

**МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ
ЗАПОРІЗЬКИЙ ДЕРЖАВНИЙ МЕДИЧНИЙ
УНІВЕРСИТЕТ
Кафедра іноземних мов**

ESSENTIALS OF MEDICAL ENGLISH

**ПРАКТИКУМ З ДИСЦИПЛІНИ «ІНОЗЕМНА МОВА ЗА
ПРОФЕСІЙНИМ СПРЯМУВАННЯМ» ДЛЯ СТУДЕНТІВ
МЕДИЧНИХ ФАКУЛЬТЕТІВ**



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E80 **Essentials of Medical English** = Професійна англійська для медиків : практикум з дисципліни «Іноземна мова за професійним спрямуванням» для студентів медичних факультетів / уклад. О.В. Гордієнко, О.А. Мирошніченко, А.В. Неруш, Ю.В. Орел-Халік, Л.В. Сазанович, О.Л. Соляненко. – Запоріжжя : [ЗДМУ], 2018. - 168 с.

Essentials Of Medical English (Практикум з дисципліни «Іноземна мова за професійним спрямуванням» для студентів медичних факультетів) складається з 30 уроків, які охоплюють такі розділи, як нормальна фізіологія, мікробіологія та хвороби. Студенти мають нагоду познайомитися і вивчити медичну англійську мову, читати, перекладати і презентувати клінічні картини багатьох хвороб. Практикум призначений для аудиторної роботи зі студентами медичних факультетів за спеціальностями «Медицина» і «Педіатрія».

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МЕТОДИЧНА ЗАПИСКА

Практикум з дисципліни «Іноземна мова за професійним спрямуванням» для студентів медичних факультетів “Essentials of Medical English” складено на підставі вимог, поставлених вищою школою до викладання іноземної мови у немовних ВНЗ України і відповідає цілям, зазначеним у програмах з навчальних дисциплін «Англійська мова» та «Англійська мова за професійним спрямуванням» для вищих медичних закладів освіти України III-IV рівнів акредитації для спеціальностей «Медицина» та «Педіатрія» напрямку підготовки спеціалістів відповідно до освітньо-кваліфікаційних характеристик (ОКХ) та освітньо-професійних програм (ОПП) підготовки фахівців, затверджених МОН України.

Практикум розраховано на дві години на тиждень аудиторних занять. Кожний розділ складається з граматичного і лексичного блоків. Граматичний блок спрямований на ревізію знань англійської граматики та містить достатньо повний обсяг труднощів з морфології та синтаксису англійської мови.

Лексичний блок містить вправи, які вводять спеціальну медичну термінологію і загальноживану медичну лексику, тексти для читання і складання резюме, тексти з інформацією для повідомлень за темою заняття, тексти для обговорення. Таким чином вдосконалюються навички оглядового, ознайомчого та вивчаючого читання. Завдання та вправи, які розвивають навички інтенсивного читання, передбачають вміння на основі здобутої інформації обґрунтувати проблеми таких медичних дисциплін, як нормальна фізіологія і мікробіологія, дати клінічну картину захворювань серцево-судинної, респіраторної систем, травного тракту, інфекційних хвороб.

Основними завданнями практикуму «Essentials of Medical English» є вивчення студентами фахового матеріалу іноземною мовою та інтеграція із такими дисциплінами як біологія, фізіологія, мікробіологія, латинська мова; закладання основ знань медичної термінології з перспективою їх подальшого використання у професійній діяльності.

Практичні заняття передбачають:

- вивчення основ термінології на базі опрацювання оригінальних та адаптованих медичних текстів іноземною мовою
- оволодіння навичками читання, розуміння та двостороннього перекладу спеціального медичного тексту
- складання анотацій та резюме іноземною мовою
- розвиток комунікативних умінь в межах тематики програми.

CYCLE I. PHYSIOLOGY OF THE HUMAN BODY

UNIT 1. THE PHYSIOLOGY OF THE CARDIOVASCULAR SYSTEM

LESSON 1.

Граматика: Основні форми англійського дієслова.

Огляд часів в Active Voice.

Типи простих речень.

Типи питальних речень.

Словотворення: Суфікси –ate, -are, -able, (-ible), -ance, -ence.

Тексти: Text A. Work of the Human Heart.

Text B. The Heart Sounds

STEP 1. GRAMMAR

1. За яким принципом англійські дієслова поділяються на правильні і неправильні? Згадайте основні форми англійського дієслова. Який час утворюється за допомогою інфінітива дієслова? Які функції виконують дієприкметники минулого і теперішнього часу? Чому в таблиці неправильних дієслів немає форми дієприкметника теперішнього часу? Які часи утворюються за допомогою дієприкметників минулого і теперішнього часів?

	Інфінітив – неозначена форма дієслова	Past Indefinite (Simple) – минулий неозначений (простий) час	Past Participle - дієприкметник минулого часу	Present Participle – дієприкметник теперішнього часу
Правильні (стандарт- ні) дієслова	To examine	examined	examined	examining
	Інфінітив без частки “to” утворює теперішній час: The doctors examine the patients.- Лікарі обстежують хворих.	The doctors examined the patient. Лікарі обстежили- ли хворого.	A patient examined by the doctors – Хворий, обстежений лікарями	A doctor examining the patient – Лікар, обстежуючий хворого
Неправильні (нестандартні) дієслова	To make	made	made	making
	The doctor makes diagnosis. Лікар ставить діагноз.	The doctor made diagnosis. Лікар поставив діагноз.	The diagnosis made by the doctor – діагноз, поставлений лікарем	The doctor making the diagnosis – лікар, який ставить діагноз

2. Утворіть Present Participle від наступних дієслів, перекладіть їх.

To perform, to treat, to enter, to study, to feel, to receive, to take to come back.

3. Утворіть Past Participle від наступних дієслів, перекладіть їх.

To write, to diagnose, to examine, to compose, to eat, to do, to fill in.

4. Перекладіть наступні словосполучення. Визначте дієприкметник.

The vessels carrying blood, an organ placed within the chest, the portal system formed by the veins passing to the liver, the heart included into the pericardium, chambers divided by the septum, the mitral valve separating the atrium and the ventricle, heart beat followed by a period of rest, the blood pumped from the right ventricle, a pump discharging out the blood to peripheral and pulmonary systems, a rare often misdiagnosed but repairable valve disease.

5. Скільки форм має англійське дієслово в активному і пасивному станах? А скільки форм має англійське дієслово тільки в активному стані? Згадайте формули утворення англійських часів Simple, Continuous, Perfect, Perfect Continuous. Коли вживаються ці часи, які дії або процеси вони виражають?

	SIMPLE	CONTINUOUS	PERFECT	PERFECT CONTINUOUS
PRESENT	I do	I am doing	I have done	I have been doing
PAST	I did	I was doing	I had done	I had been doing
FUTURE	I will do	I will be doing	I will have done	I will have been doing
FUTURE- IN-THE- PAST	I should would do	I should would be doing	I should would have done	I should would have been doing

6. Перекладіть наступні речення. Визначте час дієслова-присудка.

1. East or West – home is best.
2. The father said to his son that although the sun sets in the West it will rise the next day as always in the East.
3. We often receive advice, but only the wise profit by it.
4. Don't worry about something bad that has happened if there's nothing you can do about it.
5. Everybody talks about the weather, but nobody does anything about it.
(Mark Twain)
6. Cleaning your house while your kids are still growing is like shoveling the walk before it stops snowing.

7. After I had decided to do an English course in London I wrote to a few schools and ask them to send me an enrolment form.
8. I am looking for a job to suit my particular qualifications.
9. I was seventeen and my job was to try to keep eight fairly active eleven- and twelve-year-olds from killing one another or myself.
10. If you ask fifty people to name any colour, about thirty of them will say “red”.
11. A person with one watch knows what time it is; a person with two watches is never sure.
12. Never lend books, for no one ever returns them; the only books I have in my library are the books that other people have lent me. (Anatole France)
13. Remember me is all I ask, but if remembrance proves a task – forget!
14. Languages are living things: the old words die, the new words come in.
15. Sometimes you have to wait until the evening to see how glorious the day has been. (Sophocles).
16. Banging your head against a wall uses 150 calories an hour. (Don't try this at home, maybe at University).
17. I eat in response to how I feel. If things are going well, it's easy for me to eat healthfully. But when stress hits, I eat anything that will make me feel better.
18. The mediocre teacher tells. The good teacher explains. The superior teacher demonstrates. The great teacher inspires.
19. Doctors at a hospital in Brooklyn, New York have gone on strike. Hospital officials say they will find out what the doctors' demands are as soon as they can get a pharmacist over there to read the picket signs.
20. New research shows that we take longer and longer to reach maturity: less than a third of 30-year-olds can now be classified as adults based on the criteria of having completed their schooling, left home and became financially independent.

7. Перекладіть наступні речення англійською. Визначте час дієслова-присудка.

1. Я – студент другого курсу медичного університету. 2. Ми продовжуємо вивчати анатомію людину і починаємо вивчати нормальну фізіологію. 3. Зараз у нас заняття з англійської мови. 4. Ми вже прочитали і переклали текст. 5. Ми ще не склали резюме тексту. 6. Студенти нашої групи збираються прийняти участь в студентській науковій конференції на кафедрі іноземних мов. 7. Я вивчаю англійську мову на протязі 10 років. 8. Наш викладач сказав нам, що ми оволодіємо медичною англійською, якщо будемо добре вчити нові слова на кожному занятті.

8. Твердий порядок слів є основною особливістю англійського речення. Це обумовлено тим, що, на відміну від української (синтетичної) мови, англійська мова має аналітичний характер. Якщо в українському реченні «Студенти вивчають фізіологію серцево-судинної системи» можна робити перестановки членів речення, не зашкоджуючи його змістові, то англійське речення “The students study the Physiology of the Cardiovascular System” не допускає перестановок. Чим це викликано? В українській мові наявність словотворчих суфіксів дозволяє робити такі перестановки, а в англійській мові ці можливості

компенсуються твердим порядком слів: підмет+присудок, додаток, перебувають у строгій послідовності, складаючи ядро англійського речення. Обставина переважно стоїть до чи після ядра. Щодо означення, то воно стоїть поруч з тим членом речення, яке означається. А як перекладаються англійською ті речення, які в українській мові називаються неозначено-особовими, безособовими? В цих реченнях також працює правило підмет+присудок (навіть в тих випадках, коли підмет є формальним).

ТИПИ ПРОСТИХ РЕЧЕНЬ

(засоби перекладу українського простого речення англійською мовою)

Просте речення може бути:
Особове речення
Підмет + присудок + інші члени речення
The exception proves the rule. One day I hope to be rich and successful. The head is the top part, not only of man, but also of anything: the head of the family, the head of the flower, the head of the government.
Неозначено-особове речення
Підмет one, you, they, we + присудок + інші члени речення
One might think you know everything. How should we know? You never can know. What do they call this in English?
Безособове
Підмет it + присудок + інші члени речення
It is never too late to learn. It is bad manners to stare at people. It will come all right in the end. It is incredible!
Речення з конструкцією there is / there are
There is / there are + підмет + обставина місця
There are 15 students in the group on the list. There was a chemist's over there. There were no letters for you this morning. There is no place like home. (English proverb)

9. Перекладіть наступні речення. Визначте тип речення.

1. Students work individually.
2. You are not supposed to eat in the classroom.
3. We begin at page 64.
4. He speaks Ukrainian like a native.
5. Sorry, your name escapes me.
6. Your answer is good except for a few mistakes.
7. The students were conducted over the hospital.
8. Entrance to the college is by examination only.
9. She likes him but doesn't love him.
10. It is difficult to please everybody.
11. It may rain.
12. Students often need that extra push in studies.
13. I hear the bell going.
14. One never knows if this or that politician is completely honest.
- 15.

My idea is to close the door and to open the window. 16. It is noon already. It's high time to have a bite. 17. Necessity is the mother of invention. 18. There isn't a single picture in the book! 19. There was once a little spider who lived with his mother in a library. 20. The game is not worth the candle.

10. Які бувають речення залежно від мети висловлювання? Якщо у розповідних речень дотримується прямий порядок слів, то який порядок дотримується у питальних реченнях? Яка закономірність існує для побудови всіх типів питань? Які питання називаються загальними, які – спеціальними? Які питання називаються альтернативними, а які – роз'єднувальними?

ТИПИ ПИТАЛЬНИХ РЕЧЕНЬ

Загальні питання
- Це такі питання, які починаються з допоміжних або модальних дієслів, а також смислових дієслів to be, to have
Are you healthy? Is everything OK with you? Do you ever read poems? Do you accept credit cards? Have you got this in a smaller size?
Спеціальні питання
- Починаються питальними словами Who? What? Which? Where? When? How? How many? How much? Why? та ін. Вони базуються на загальному питанні (без того члена речення, до якого поставлено питання), крім випадків, коли питання ставиться до підмета або його означення
What date is it today? Who goes? How long is it before the bell? Where are your manners? Why can't you take me to school in the car today? I say! Why do you dislike me?
Альтернативні питання
- Передбачають вибір із двох речей, осіб, явищ та ін. Їх можна поставити до будь-якого члена речення. Будуються на основі загального питання.
Do you like tea or coffee? What coffee does she prefer, black or white?
Роз'єднувальні питання
- Мають дві частини: перша – стверджувальна або заперечна, з прямим порядком слів; друга частина – коротке заперечне загальне питання, якщо перша частина – стверджувальна, і навпаки, коротке стверджувальне загальне питання, якщо перша частина – заперечна.
He is at home, isn't he? You don't speak German, do you?

21. Перекладіть наступні питання. Визначте тип речення або питання.

1. Have you any friends here? 2. What is the reason of dew? 3. You are idling away your time! 4. What has come over you? 5. Which page are we on? 6. What does he like doing? 7. Someone's mobile phone is always ringing during the lesson. 8. The students usually leave the University late, don't they? 9. Give the door a hard push! 10. Give me a prompt answer! 11. Go to facts! 12. Every time you answer you wait for a prompt! 13. You are such a proficient! 14. No prompting! 15. Put a mark against his name. 16. Put on your caps! 17. Will you read this page and the one before. 18. Set your books apart. 19. Ask me another. 20. Ask no questions and you will be told no lies. 21. Ask for permission. 22. Pay attention to this paragraph. 23. Don't be long! 24. Come at 5 o'clock, not before. 25. The weather holds warm, doesn't it? 26. Where do we begin? 27. I believe him to be alive. 28. Will you sit beside that student? 29. Allow students enough time to write down your board work. 30. Check your answers. 31. Are you coming my way? 32. What idea came into your head? 33. On what page does it come? 34. At what time will he come back? 35. Consider yourself at home! 36. Could you write your name, please? 37. Draw your chair nearer to the table. 38. Do we have any duster to clean the board? 39. Will you wet the duster? 40. Feel how cold my hands are! 41. Find out when he will come. 42. If I only knew! 43. Stop talking this instant! 44. Learn not to interrupt! 45. How did you sleep? - I slept like a log! 46. Join us! 47. One can know a man from his laugh, and if you like a man's laugh before you know anything of him, you may confidently say that he is a good man. 48. You are joking now! 49. Joking apart! 50. Keep a seat for me! 51. Keep to the subject! 52. Keep off the grass! 53. Heaven only knows! 54. Lend only those books you never care to see again. 55. There are 3 ways to get something done: do it yourself, hire someone, or forbid your kids to do it. 56. Keep your feet warm. 57. How do you like it? 58. Stop talking while other students are trying to listen to the teacher! 59. Where is our litter-bin? 60. Look at the questions on page 78. 61. What is it made of? 62. What distance do you make it from here to the University? 63. It's high time to have a break. 64. How healthy you look! 65. Try to work against time! 66. This is private. Keep your nose out of it! 67. He can't be normal! 68. You made friends with them, didn't you? 69. She doesn't live with her parents, does she? 70. Are you free or busy the day after tomorrow? 71. How tall you've grown! 72. Save your time!

STEP 2. VOCABULARY. TEXTS

WORD-FORMATION

Суфікс **-ate** – суфікс дієслів: circulate, demonstrate, locate.

Суфікс **-able, -ible** утворюють прикметники від основи дієслова: comfortable, comparable, available, considerable.

1. Translate the following words:

a) calculate, radiate, operate, regulate, estimate

b) eatable, changeable, variable, repairable, questionable, reasonable, extensible, workable, viable, predictable, unpredictable, comparable, hospitable, inhospitable.

2. Translate the following words:

Artery, arterial; aorta, aortic; ventricle, ventricular; operate, operation, operative; respire, respiration, respiratory; estimate, estimation, estimated; regulate, regulation, regular, regularly; repair, repairmen, repaired, repairable; circulate, circulation, circulatory; atrium, atria, atrial; system, systematic, systemize, systematically; compare, comparative, comparison, comparable; reason, reasonable; sense, sensation, sensitive, sensible.

3. YOU CAN'T DO WITHOUT THIS VOCABULARY:

Cardiac - серцевий	Estimate - оцінювати
Cardiovascular - серцево-судинний	Ton - тонна
Atrial systole - атріальна систола	Determine - визначити
Ventricular systole – вентрикулярна систола	Wave - хвиля
Diastole - діастола	Follow – іти (за ким,чим); дотримуватися; поділяти погляди, розуміти; логічно виходити
Contract–стискати(ся), скорочувати(ся)	Aorta - аорта
Pump - качати, нагнітати	Aortic - аортальний
Pulse rate – частота пульсу	Artery - артерія
Respiratory rate – частота дихання	Vein - вена
Beat (beat, beaten) - битися	Venule - венула
Weigh - важити	Capillary - капіляр
Weight - вага	Systemic circulation – великий круг кровообігу
Heartbeat - серцебиття	Pulmonary circulation – легеневий круг кровообігу
Chamber - камера	Portal circulation – портальний (воротний) круг кровообігу
Costal interspace –міжреберний простір	
Exertion – зусилля, напруга	
Prolong - продовжувати	
Discharge - виділяти, випускати	

4. Translate the following word-combinations:

On physical exertion, to be discharged from the hospital, the ventricle discharges out blood, pulmonary artery, pulmonary circulation, the heart contraction, a more prolonged contraction, each wave of contraction, to regulate the rate of heart contractions, to pump blood through the blood vessels, the total body weight, the period of rest, one third of the time of the person's life, the blood received by the right atrium, the final portion of the blood, scientists have determined.

5. Read Text A. Find the sentences of different types. Give examples of using different tense forms in the text. Summarize the general ideas developed in Text A.

TEXT A. WORK OF THE HUMAN HEART

The human heart contracts from the first moment of life until the last one. The contractions of the heart pump the blood through the arteries to all the parts of the body. Scientists have determined that the total weight of the blood pumped by the heart daily is about ten tons.

The rate of heart contractions is regulated by two groups of nerve fibers. It varies in different persons and at different age.

Physiologists have determined that in the adult the heart makes from 60 to 72 beats per minute. In children the rate of heartbeat is much higher. Research work of many scientists has helped to determine that the rate of heartbeat increases depending on different emotions.

Each beat of the heart is followed by a period of rest for the cardiac muscle. Each wave of contraction and a period of rest following it compose a cardiac cycle.

Research work has given physiologists the possibility to find out that the heart muscle works or contracts about one third of the time of the person's life. The period of rest is shorter during greater physical exertion and longer when the body is at rest.

Each cardiac cycle consists of three phases. Physiologists have called the first phase of short contraction of both atria the atrial systole. They have called the second phase of a more prolonged contraction of both ventricles the ventricular systole. The period of rest of the cardiac muscle is called the diastole.

The left ventricle discharges out the blood received by the left atrium from the pulmonary circulation through the aorta to the systemic circulation.

The blood received from the systemic circulation by the right atrium is discharged out of the right ventricle to the lungs through the pulmonary arteries.

Prolonged research work of many physiologists has given the possibility to estimate the role of the ventricles which serve as the main pump. The atria act as receiving chambers. The contraction of the atria which sends the final portion of the blood into the ventricle is considerably less.

6. Choose the proper answer from those given below.

1. Did the scientists find out the total weight of the blood? a) The scientists find out the total weight of the blood. b) The scientists found out the total weight of the blood. c) The total weight of the blood was found out by the scientists. 2. Is the rate of the heartbeat regulated by two groups of nerve fibers? a) The rate of the heartbeat will be regulated by two groups of nerve fibers. b) Two groups of nerve fibers have regulated the rate of the heartbeat. c) The rate of the heartbeat is regulated by two groups of nerve fibers.

7. Read text B and say what data important for a future doctor are given in it. What will you try to remember?

TEXT B. THE HEART SOUNDS

When we listen to the heart we can hear two sounds. The third sound is also heard in some persons.

The first heart sound is the longest one. It is heard at the moment of contraction of the ventricles when the atrioventricular valves close.

The second sound lasts for a shorter period of time. It is heard at the moment when the pulmonary and aortic semilunar valves close.

The third heart sound is heard when the blood is passing from the atria into the ventricles.

The first and the second cardiac sounds are heard over all the portions of the heart and often over the large vessels. The first heart sound is greater over the surface of the ventricles, and it is the greatest over the surface of the mitral and tricuspid valves. The second heart sound is heard loudest over the aorta and the pulmonary artery.

Heart sounds are also heard over some portions of the chest. Normally the first heart sound is heard best over the apex of the heart in the fifth costal interspace. The second sound is heard best over the pulmonary artery and the aorta, that is in the second left and right costal interspaces. The aortic sound is normally louder than the pulmonic sound.

The heart sounds are very important in the clinical diagnosis and the doctors determine many cardiac diseases by heart sounds.

8. Answer the questions.

1. How many heart sounds do we hear when we listen to the heart? 2. When is the first heart sound heard? 3. When is the second heart sound heard? 4. At what moment is the third heart sound heard? 5. Where is the first heart sound heard louder? 6. Over the surface of what valves is the first heart sound heard loudest? 7. Where is the second heart sound heard loudest? 8. In which costal interspaces is the first heart sound heard best? 9. In which costal interspaces is the second heart sound heard best? 10. Which of the two sounds – the aortic or the pulmonic is louder normally? 11. What do heart sounds help the doctors to determine? 12. Does the cardiovascular physical examination include inspection, palpation, and auscultation of the heart sounds with the help of stethoscope?



When you are older you will understand how precious little things, seemingly of no value in themselves, can be loved and prized above all price when they convey the love and thoughtfulness of a good heart.

- Edwin Booth

LESSON 2.

Граматика: Часи групи Perfect.
Неозначено-особові речення.
Словотворення: Суфікси -ance, -ence.
Суфікс -ant, -ent.
Тексти: Text A. The Circulation of the Blood.

STEP 1. GRAMMAR

1. Прочитайте наступні речення і зверніть увагу на присудок. Дайте відповіді на запитання.

A.1) The doctors have prolonged the treatment.	B.1) Лікарі продовжили лікування.
2) The doctors had examined the patient before we came.	2) Лікарі оглянули хворого до того, як ми прийшли.
3) We will have finished an article by 2 o'clock.	3) Ми закінчимо статтю до 2 години.

☺ Назвіть присудки в англійських реченнях. Яке допоміжне дієслово вживається для утворення присудка? В якій формі вживається смислове дієслово? За якою формулою утворюються часи групи Perfect? Який компонент змінюється в цій формулі? Який компонент не змінюється в цій формулі? Яку дію (звичайну, тривалу або завершену) виражають дієслова в групі Perfect?

Б. Зверніть увагу на утворення заперечної і питальної форм групи Perfect.

1. The doctors have not prolonged the treatment. The doctors will have not prolonged the treatment. 2. Had the doctors examined the patient before we came?
3. We will not have finished an article by 2 o'clock. Will we have finished an article by 2 o'clock?

2. Зверніть увагу на вживання прислівників з часами групи Perfect.

For (протягом, на), since (з, з того часу як), already (вже), just (щойно), ever(коли-небудь), never (ніколи), always (завжди), so far (поки що, досі), today (сьогодні), this week/month (цього тижня/цього місяця), how long (як довго), lately (недавно, останнім часом), recently (недавно), not yet (ще ні)

NB! Present Perfect ніколи не вживається:

a) З прислівником just now (тільки що): I saw him just now.

b) В питальних реченнях з питальним словом when: When did you see him?

c) В реченнях з yesterday, last week, 10 years ago: It happened two years ago.

NB! Present Perfect слід вживати з виразами: This is the first time ... It's the first time ...

- Have you ever been in hospital?

- No, it's the first time I've been in hospital.

NB! Present Perfect/Past Indefinite

Have you met him this morning?

Ти його зустрів сьогодні вранці? (*про це питають вранці)

Did you meet him this morning?

Ти його зустрів сьогодні вранці? (*про це питають після 12 або ввечері)

3. Перекладіть наступні речення.

1. She has been to London. – Has she already visited the British Museum? 2. Have you ever travelled abroad? 3. Don't forget to have breakfast before studies at university! – I've just had a cup of coffee and sandwich. 4. They haven't lived in Ukraine for a long time. 5. I haven't met my friends since Tuesday. 6. It is hard to predict what will happen to our planet in the future: the amount of time people have lived on the Earth is like the blink of an eye compared with the long history of the Earth. 7. Giving up smoking is the easiest thing in the world. I know because I've done it thousands of times. (Mark Twain).

4. Додайте “already” або “yet”. Перекладіть речення.

1. The scientists have introduced this term. 2. The researchers have not found out the origin of the disease. 3. The physiologists have estimated the importance of this great discovery. 4. They have not published any article this year.

5. Зверніть увагу та обґрунтуйте вживання Present Perfect в наступних реченнях. Про що повідомляється в реченнях?

1. New research has revealed the ages at which people enjoy life the most are 9 and 66. 2. Studies have shown that people who practise spirituality are happier, healthier and better able to cope with stress in their lives. 3. Scientists have identified various stages of sleep, and they have found that humans can function well on very little sleep, but only if they dream. 4. It is understandable that people who have never seen a cardiologist before may be scared about the problem they are having, but they should remember that the doctor's only goal is to make their health better. 5. Research at the Karolinska Institute in Sweden has shown that the Stone Age diet – which, before man began to grow crops around 11,000 years ago, was largely restricted to nuts and berries and the odd bit of non-fatty meat – has distinct health benefits. 6. The study at Universities of London, Birmingham and Warwick has shown that Agatha Christie peppered her prose with phrases that acted as a trigger to raise levels of serotonin and endorphins, the chemical messengers in the brain that induce pleasure and satisfaction. 7. Beware! Too much television watching can be dangerous. A study at Harvard and Tufts Universities in America has confirmed that remaining in front of the television is one of the most important reasons for obesity.

STEP 2. VOCABULARY. TEXTS

WORD-FORMATION

Суфікс -ance, -ence - суфікс іменників: importance, dependence, abundance Суфікс -ant утворюють прикметники від основи іменника: important, dependent, abundant
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1. Translate the following words:

a) difference, presence, absence, assistance, attendance, incidence, coincidence, dependence, importance, performance, entrance, occurrence, instance, significance.

b) present, absent, distant, different, prevalent, prominent, persistent.

2. Translate the following groups of words:

Perform, performance, performer; attend, attendance, attending; incident, incidence, incidental, incidentally; absence, absent, absentee.

3. Read the following sentences. Translate them paying attention to the words in bold type.

1. Will you **bring** me your notes in Physiology? 2. The venous blood is **brought** to the right atrium of the heart. 3. The chemical formula of **carbon dioxide** is CO₂. 4. The chemical formula of **oxygen** is O₂. 5. Oxygen is necessary for life. 6. **To oxygenate** means to receive much oxygen. 7. The venous blood is **oxygenated** in the lungs. 8. The normal atmospheric **pressure** is 760 mm Hg. 9. One atom of oxygen plus two atoms of hydrogen – probably one of the first **chemical** formulas you ever learned. 10. Since the advent of **chemistry**, investigators have needed to know the identity and quantity of the materials with which they are working.

4. Read Text A. Find the predicates in Present Indefinite Passive and Present Perfect Active. Make a list of words and phrases for describing the process of blood circulation.

THE CIRCULATION OF BLOOD

Now we know that the venous blood from the systemic and pulmonary circulation is brought to the right atrium of the heart. When the pressure in the right atrium has increased the blood passes into the right ventricle from the right atrium.

During the systole of the ventricle the blood is pumped from the right ventricle into the pulmonary artery. When the right ventricle has pumped the venous blood into the pulmonary artery it enters the pulmonary circulation. The blood is brought to the lungs through the pulmonary artery. In the lungs the venous blood discharges out carbon dioxide. When the blood has discharged out carbon dioxide it takes in oxygen in the lungs.

The blood which has become oxygenated passes from the venous part of the pulmonary capillary system into the venules and veins. When the oxygenated blood has passed the four pulmonary veins it is brought to the left atrium of the heart.

Under the pressure in the left atrium the arterial blood which the pulmonary veins have brought to the heart is pumped into the left ventricle. During the prolonged contraction of the left ventricle, the so-called ventricular systole, the arterial blood is pumped into the aorta – the main artery of the vascular system. When the left ventricle has pumped the arterial blood into the aorta it is carried through the arteries to all the parts of the body.

LESSON 3.

Граматика: Часи групи Perfect.

Неозначено-особові речення.

Словотворення: Суфікси -al, -ar.

Суфікс -ty, -ment.

Тексти: Text A . The Corpuscular Elements of Blood.

STEP 1. GRAMMAR

1.Зверніть увагу на варіанти перекладу наступного речення:

Кажуть, що він вчиться в медичному університеті.	<ol style="list-style-type: none">1. They say that he studies at the medical University.2. It is said that he studies at the Medical University.3. One says that he studies at the Medical University.
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☺ Розберіть українське речення: знайдіть головне речення, його підмет і присудок. Назвіть підрядне речення і сполучник, який з'єднує підрядне речення з головним. Порівняйте українське і англійське речення. Який підмет ми називаємо формальним? Чи узгоджується присудок з формальним підметом?

2. Перекладіть неозначено-особові звороти, використовуючи різні варіанти перекладу:

<ol style="list-style-type: none">1. Встановлено,2. Вважають, є думка,3. До Везалія вважали,4. Визначено,5. Можна сказати,	<p>that the cardiac ventricles serve as the main main pump. that the patient will be discharged soon. that there were openings in the cardiac septum. that cardiac atria act as receiving chambers. that life cannon exist without oxygen.</p>
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3.Перекладіть наступні речення і поясніть використання часів.

1. Professor N. delivered the lecture yesterday - the audience yawned through all the lecture. 2. Professor Petrenko has already delivered the lecture. 3. Professor Petrenko has not delivered the lecture yet. 4. Yesterday the students got some interesting findings after their experiments on animals. 5. We have just got some interesting findings after our experiments on rats. 6. We have not yet got any interesting findings after our experiments on rats. 7. By the way, guinea pigs are known to be experimental animals in medicine but do you know that they don't come from Guinea, nor are they pigs; they're South American rodents.8. A new study says, that rising temperatures and falling barometric pressure often portend a pounding headache for those prone to them. 9. A great deal of study now focuses on how music actually affects our physiology and mental health.10. Doctors who treat people suffering from migraines and other chronic headaches say 50 % of their patients have reported suffering terrible episodes when the weather becomes extreme.

4. Перекладіть наступні речення, звертаючи увагу на тип речень.

1. It is known that blood becomes oxygenated in the lungs. 2. They say that the patient's health will be restored soon. 3. One knows that pulse rate becomes rapid on physical exertion. 4. It is estimated that his body weight considerably decreased during the prolonged illness. 5. It is known that disease is a harmful deviation from the normal structural or functional state of an organism. 6. General nosology as the science about diseases gives us the definition of any disease, its etiology, pathogenesis, etc. 7. According to the scientists of Warburton University, one of the greatest health threats comes from negative feelings such as depression or guilt; they say these threats create stress hormones producing cholesterol. 8. It is already a well-known fact that people who regularly watch soap-operas on television are significantly happier than those who don't.

STEP 2. VOCABULARY. TEXTS

WORD-FORMATION

Суфікс **-(i)ty, -ment** - суфікс іменників: quantity, quality, activity, reality, treatment, department, appointment.

Суфікс **-al, -ar** утворюють прикметники від основи іменника: vital, personal, functional, cellular, corpuscular.

1. Read and translate.

a) humanity, ability, possibility, immunity, maternity, identity, curiosity, propensity, obesity, prosperity, identity, fraternity, authority.

b) achievement, development, involvement, repairment, improvement, excitement.

c) medical, chemical, physiological, physical, lateral, visceral, mitral, septal, cardiological, atrial, arterial, general, mental, facial, clinical, experimental, haematological, nocturnal, mutual.

в) ventricular, muscular, vascular, regular, particular, peculiar.

2. Translate the following pairs of words. Make up sentences with some of them.

Early – late, to leave – to return, absent – present, to increase – to decrease, weakness – alertness, true – false, excited – still, former – present, to fall ill – to recover, mild – severe, to make worse – to improve, success – failure, to result in – to result from, to work – to be on a sick-leave, to be admitted to the hospital – to be discharged from the hospital.

3. YOU CAN'T DO WITHOUT THIS VOCABULARY:

Corpuscle – корпускула, часточка	Feature – характерна особливість, риса
Red corpuscle - червонокривці	Average - середнє (число); середній, звичайний; дорівнювати в
White corpuscle - білокривці	
Corpuscular - корпускулярний	
Erythrocyte - еритроцит	середньому

Leucocyte - лейкоцит	Range – ряд, лінія, сфера; діапазон;
Thrombocyte - тромбоцит	шикуватися, ставити в ряд;
Elasticity - еластичність	коливатися (в певних межах)
Flexibility - гнучкість	Volume – тцм; обсяг, кількість;
Reservoir – резервуар	ємкість
Platelet - пластинка	State – стан, становище; заявляти,
Count –рахунок, підрахунок;	формулювати, константувати
рахувати, підраховувати	Sound – звук, шум; звучати

4. Read Text A. Find the predicates in Present Indefinite Passive and Present Perfect Active. Prepare to take part in the competition for the title “The Expert on Blood”.

THE CORPUSCULAR ELEMENTS OF BLOOD

Blood is a fluid tissue with many various functions. Not only important physiological process takes place in the blood but it determines the activity of widely separated body cells.

Blood is composed of plasma and the corpuscular elements which are called red corpuscles or erythrocytes, white corpuscles or leucocytes and blood platelets or thrombocytes.

It is generally considered that no sex differences exist in the count of white corpuscles or leucocytes. The count of leucocytes in the blood of a healthy person is 4,500 to 9,500 per cu mm (cubic millimeter). When the number of white blood cells (WBC) is counted after mental or physical exertion, meals and mild activity it may increase to 10,000 and more per cu mm.

It is estimated that the erythrocytes are the most numerous cellular elements, ranging from 4,000,000 to 5,000,000 per cu mm. The red blood cell count (RBC) may change with age; when the red blood cell count is done after physical exertion and emotions it may increase.

One knows that red corpuscles have two physical features which are very important in the function of respiration. They have great elasticity and flexibility. These features give them the possibility to pass through very small capillaries. The discoid form of the corpuscle gives it a maximal surface for a given mass.

The most important part of the red cell is its red colouring substance or hemoglobin which on an average forms about 36% of its mass.

The total blood volume is divided into circulating and reservoir volumes.

The average human blood volume is not less than 7.5% but not more than 10% of the body weight. It is generally stated that the circulating volume averages smaller in the females than in the males. The circulating volume of the blood depends on the changes of the air temperature.

5. Complete the following sentences.

1. The most numerous cellular elements of blood are ... a) white blood corpuscles; b) red blood corpuscles; c) blood platelets. 2. Blood is ... a) a connective tissue; b) a muscular tissue; c) a fluid tissue. 3. The right ventricle discharges out the blood to the lungs ... a) through the aorta; b) through the pulmonary arteries; c) through the portal vein. 4. The blood is discharged out ... a) of the ventricles; b) of the atria.

6. Decide what it is spoken about in the following sentences.

1. This part of the heart discharges out the blood received from the pulmonary circulation through the aorta to the systemic circulation. 2. This part of the heart discharges out the blood received from the systemic circulation to the lungs through the pulmonary arteries. 3. These corpuscles have great elasticity and flexibility. These features give them the possibility to pass through very small capillaries. 4. The count of these corpuscles in the blood of a healthy person is from 5,000 to 7,000 per cu mm. The number of these corpuscles increases when a person becomes ill.

7. Read the passages and answer the questions.

1. This substance is composed of plasma, red corpuscles white corpuscles and platelets. *What substance is it?*
2. These cellular elements are the most numerous in the blood. They range from 4 to 5 million per cu mm in healthy adults. Their colour is red. *What cellular elements are they?*
3. This blood is brought to the heart from systemic and portal circulations. It enters the right atrium of the heart. Then this blood passes into the right ventricle. From the right ventricle this blood passes into the pulmonary artery. *What blood is it?*

8. Do you know that

1) each erythrocyte lives 120-130 days? 2) each leucocyte lives 4-7 days? 3) every day 200,000,000 erythrocytes are born and the same number dies? 4) your blood flows through blood vessels of the total length of 160,000 km, and it requires less than a minute to pass through the body? 5) a human heart beats roughly 100,000 times per day, sending blood on its journey around the body? 6) the average time it takes to complete that journey is 45 seconds? 7) your heart is known for pumping blood through your body at an incredible rate, but do you know that your kidneys process over 189,2 litres of blood every day? That's nearly double the amount the heart receives each day.



Blood is thicker than water.

- Proverb

LESSON 4.

Граматика: Passive Voice.

Словотворення: Суфікси -er, -or.

Суфікс -ous, -ive.

Тексти: Text A. The Cardiac Rhythm

Text B. What Makes The Human Heart Sing?

STEP 1. GRAMMAR

1. Скільки форм має англійське дієслово в активному і пасивному станах? А скільки форм має англійське дієслово тільки в пасивному стані? Чи відомо вам, що пасивний стан в англійській мові вживається набагато частіше, ніж в українській мові? Використайте дієслово “to write” за формулою утворення пасивного стану групи часів Simple (Indefinite). Який час не має форм пасивного стану? Коли вживаються ці часи, які дії або процеси вони виражають?

	SIMPLE (INDEFINITE)	CONTINUOUS	PERFECT	PERFECT CONTIN UOUS
PRESENT	I am examined	I am being examined	I have been examined	-
PAST	I was examined	I was being examined	I had been examined	-
FUTURE	I will be examined	-	I will have been examined	-
FUTURE- IN-THE- PAST	I should/ would be examined	-	I should/ would have been examined	-

2. Утворіть форми Simple (Indefinite) Passive від наступних дієслів:

To investigate, to take, to form, to establish, to feel, to describe.

3. Перекладіть наступні речення. Визначте час дієслова-присудка.

1. The man is known by the company he keeps. 2. The devil is not so black as he is painted. 3. Children should be seen and not heard. 4. The instruction at our University is given in Ukrainian, Russian, and English. 5. When I was sugared I was hoping to be offered a cake. 6. Is it written with your hand? 7. You are taught for the first five years of your life how to walk and talk; and for the next ten, you're told to shut up and sit down. 8. The baby was delivered, the cord clamped and cut, and handed to the pediatrician, who breathed and cried immediately. 9. I thought that I would be taken to hospital and kept there for an eternity. 10. Welcome to Albion, where according to Bernard Shaw, the mist is considered to be

good weather, the rain is considered to be the fog, and the shower is said to be the rain! 11. Hell is paved with good intentions. 12. Three men of Gotham went to sea in a bowl, and if the bowl had been stronger, my story would have been longer.

4. Виконайте трансформацію речень таким чином, щоб друге речення мало таке саме значення, як і перше.

0 Everyone has heard about his recent research in this field. (famous)

He is famous for his recent research in this field.

1. Is this pen yours? (belong)

Does _____ you?

2. How much did that medicine cost? ((pay)

How much _____ that medicine?

3. Smoking in the library is against the rules. (allowed)

You _____ in the library.

4. She needs less sleep than I do. (more)

I need _____ she does.

5. Is it necessary for me to come with you? (have)

Do _____ come with you?

6. She didn't say goodbye when she left. (without)

She _____ goodbye.

7. My parents had never been abroad before. (trip)

It was _____ abroad.

8. It will be wonderful to see you in the summer. (forward)

I am _____ you in the summer.

9. We worked on the computer all evening. (spent)

We _____ on the computer.

10. It was the first time I had ever seen a surgical operation. (Never)

I _____ a surgical operation before.

11. The Dean has sent a special report to the Rector. (been)

The Rector _____ a special report by the Dean.

12. Sarah is one of our most hard-working students. (harder)

None of our students _____ Sarah.

STEP 2. VOCABULARY. TEXTS

WORD-FORMATION

Суфікс **-er, -or** - суфікс іменників: teacher, researcher, investigator, doctor.

Суфікс **-ous, -ive** утворюють прикметники від основи іменника: famous, serious, preventive, native.

1. Read and translate.

a) killer, pain-killer, idler, reliever, follower, loner, designer, researcher, discoverer, healer, toddler, sticker, recorder, sneezer, kisser, outsider.

b) venous, nervous, fibrous, subcutaneous, mucous, numerous, continuous, simultaneous, spontaneous.

c) active, collective, relative, restorative, effective, attentive, constructive, competitive, illustrative, attractive, protective.

2. Read and translate the words with the same root.

To connect, connective, connection; to contract, contractive, contraction; clinic, clinical, clinically; to direct, director, direction, directive, directly; attention, attentive, attentively; to act, action, actor, active, actively; to develop, development, developmental, developer; to achieve, achievement, achiever.

3. Read Text A. Memorize the figures.

THE CARDIAC RHYTHM

One knows that during the diastole the atria and ventricles take in the blood. It has been determined that during the systole the atria and the ventricles discharge out the blood. The diastole of the ventricles takes place during the systole of the atria, and the systole of the ventricles takes place during the diastole of the atria. These functions of the atria and the ventricles compose the cardiac rhythm.

The cardiac cycle lasts 0.9 second. The contraction of the atria lasts 0.2” and that of the ventricles 0.3”. When the atria contract the ventricles are at rest. The diastole or the period of rest of the cardiac muscle lasts 0.4”.

So during one cardiac cycle the ventricles work 0.3” but rest 0.6”. The period of contraction of the ventricles is longer than that of the atria, and the systolic blood pressure is always higher than the diastolic one. Such an interesting cardiac rhythm which enables the heart to rest longer than to work is very important for the blood circulation.

If the period of cardiac rest has become constantly shorter, the rate of heartbeat increases. Such an increased rate of heartbeat may affect the heart and produce different cardiac diseases.

4. Combine the nouns with appropriate verbs.

The heart	<i>To contract</i>	<i>To bring</i>	<i>To be heard</i>
The blood	<i>To pump</i>	<i>To regulate</i>	<i>To close</i>
The artery	<i>To beat</i>	<i>To vary</i>	<i>To last</i>
Valves	<i>To discharge</i>	<i>To compose</i>	<i>To pass</i>
The heart sound	<i>To receive</i>	<i>To work</i>	<i>To determine</i>
Doctors	<i>To dilate</i>	<i>To consist of</i>	<i>To be important</i>

5. Read the passages and answer the questions.

1. They are at rest when the atria contract. During one cardiac cycle they work 0.3” but rest 0.6”. *What are they?*

2. If the period of cardiac rest has become constantly shorter, the rate of it increases. Such an increased rate may affect the heart and produce different cardiac diseases. *What rate is spoken about?*

3. Research work has given the possibility to find out that the heart muscle works or contracts about one third of the time of the person's life. The period of rest is shorter during greater physical exertion and longer when the body is at rest. *Whom has research work given the possibility to find out important knowledge about how heart muscle works?*

4. It is brought to the lungs through the pulmonary artery. In the lungs it discharges out carbon dioxide. Then it takes in oxygen in the lungs. *What is it?*

6. Read Text B. Find the topical sentences and make a short summary of the text using the topical sentences. *What makes your heart sing?*

WHAT MAKES THE HUMAN HEART SING?

So, what has science learned about what makes the human heart sing? More than one might imagine.

Take wealth, for instance, and all the delightful things that money can buy. Research has shown that once your basic needs are met, additional income does little to raise your sense of satisfaction with life.

A good education? Sorry, Mom and Dad, neither education nor, for that matter, a high IQ paves the road to happiness.

Youth? No, again. In fact, older people are more consistently satisfied with their lives than the young. And they're less prone to dark moods. A recent survey by the U.S. Centers for Disease Control and Prevention found that people aged between 20 and 24 are sad for an average of 3.4 days a month, as opposed to just 2.3 days for people aged 65 to 74.

Marriage? A complicated picture: married people are generally happier than singles, but that may be because they were happier to begin with.

Watching TV? Not at all! People who watch more than three hours a day – especially soaps – are more unhappy than those who spend less time in front of the box.

On the positive side, religious faith seems genuinely to lift the spirit, though it's tough to tell whether it's the God part or the community aspect that does the heavy lifting.

Friends? A giant YES! A recent study conducted at the University of Illinois by Diener and Seligman found that the most salient characteristics shared by the 10% of students with the highest levels of happiness and the fewest signs of depression were their strong ties to friends and family, and commitment to spending time with them. "It's important to work on social skills, close interpersonal ties and social support in order to be happy," says Diener.

Ruut Veenhoven, Professor of happiness studies at Erasmus University in Rotterdam, is a font of such happy facts. He edits the Journal of Happiness Studies

and manages the World Database of Happiness, a massive archive of research gleaned from all over the world. Veenhoven notes that people who drink one or two glasses of alcohol a day are happier than teetotalers; people between the ages of 30 and 50 are less happy than other groups perhaps, he says, because in mid-life we have “less freedom and more responsibilities” in terms of kids, parents, jobs and mortgages; and people are happiest in jobs that afford a certain amount of freedom and satisfaction.

7. Complete the gaps in the sentences below with a noun. The first letter of each word is the same as the last letter of the word before.

1. Some of recent studies have focused on **optimism**, a trait shown to be associated with good physical health, less depression and mental illness, longer life and greater happiness. 2. M_____ profession says that being around people can do everything from reducing blood pressure to boosting your chances of surviving cancer. 3. But psychologists say you don't have to be weird to be a l_____; being alone forces you to enjoy your own company and enjoying your own company makes you very attractive to others. 4. It has been found that to have a good r _____ with others, you need to have a good relationship with yourself. 5. You don't have to be sitting at home and writing War and P_____ but being alone helps you process your thoughts and come to your own conclusions about the world. 6. Solitude has long been linked with creativity, spirituality and intellectual might – Beethoven, Kafka and Newton are e_____ of solitary genius.

Keys to exercises:

Exercise 4: 0. is famous for his recent research; 1. this pen belong to; 2. did you pay for; 3. are not allowed to smoke; 4. more sleep than; 5. I have to; 6. left without saying; 7. my parents' first trip; 8. looking forward to seeing; 9. spent all evening working; 10. had never seen; 11. has been sent; 12. work(s) harder than.

Exercise 7: 1 optimism, 2 medical, 3 loner, 4 relationship, 5 peace, 6 examples

UNIT 2. THE PHYSIOLOGY OF RESPIRATION

LESSON 5.

Граматика: Узгодження часів.

Безсполучникові підрядні речення.

Словотворення: Суфікси –ian, -ion(-ation), -ment.

Префікси dis-, a-, ab-, be-, com-, con-, de-, ex-, per-, pre-.

Тексти: Text A. Sechenov and His Works on the Blood Gases.

Text B. The Exchange of Gases in the Lungs.

Text C. The Voice of the Body.

STEP 1. GRAMMAR

1. Прочитайте речення, звертаючи увагу на переклад підрядних речень рідною мовою. Дайте відповіді на питання:

- а) в чому полягає правило узгодження часів?
- б) за допомогою якого часу в додатковому підрядному реченні виражається одночасність дії, і як це речення перекладається рідною мовою?
- в) за допомогою якого часу в додатковому підрядному реченні виражається дія, яка передувала дії головного речення?
- г) за допомогою якого часу в додатковому підрядному реченні виражається дія, яка відбудеться в майбутньому?

I know Я знаю	they live in Canada. <i>що вони живуть в Канаді.</i> they lived in Canada. <i>що вони жили в Канаді.</i> They will live in Canada. <i>що вони будуть жити в Канаді.</i>	I knew Я знав	they lived in Canada. <i>що вони живуть в Канаді.</i> they had lived in Canada. <i>що вони жили в Канаді.</i> they would live in Canada. <i>що вони будуть жити в Канаді.</i>
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☺ Узгодження часів в додатковому підрядному реченні

1. Правило узгодження часів стосується тільки додаткових підрядних речень, що стоять після дієслова-присудка головного речення в минулому часі. Якщо присудок головного речення стоїть в минулому часі, то присудок додаткового підрядного речення вживається в одному з минулих часів.
2. а) Якщо дії головного і підрядного речень відбуваються одночасно, то дієслово-присудок додаткового підрядного речення стоїть в Past Indefinite (або Past Continuous) і перекладається теперішнім часом:

2. Утворіть форми Past Perfect та Future in the Past від наступних дієслів: to observe, to investigate, to prove, to isolate, to enable.

3. Перекладіть наступні речення, визначте часи присудків:

1. The patient had restored his health by the end of September.
2. He had slept well before the surgeon came.
3. The male patient had had the grippe before he was admitted to the clinic.
4. The doctor had observed an unusual case of a mitral valve disease before he reported on it at the conference.

4. Оберіть речення, в яких дії головного та підрядного відбуваються одночасно. Перекладіть ці речення:

1. The scientists determined that the rate of heartbeat increased because of different emotions.
2. The doctor said that he had examined the patient a day before.
3. The surgeon considered that the operation would be successful.
4. It was estimated that blood was a fluid tissue.

5. Вивчіть наступні словосполучення, звертаючи увагу на прийменники:

to be due to, to come to the conclusion, to prove to, in conclusion, due to, to report on smth; on the basis of smth, to work on the problem

6. Перекладіть рідною мовою:

the solution of salts, due to the transfer, due to the diffusion of gases, to accomplish the investigations, the accomplishment of this process, to come to the conclusion, to draw a conclusion, to investigate the phenomenon, to investigate the laws of diffusion, estimate the role of hemoglobin

7. Зробіть наступні речення а) заперечними; б) питальними. Перекладіть їх:

1. The doctor stated that the patient had pneumonia.
2. The surgeon considered that the patient would feel well in two or three days.
3. The professor found out that the patient had had tuberculosis two years before.
4. They came to the conclusion that the atmospheric pressure was an important factor for patients with cardiac diseases.
5. The researchers said that they had observed new phenomena.

STEP 2. VOCABULARY. TEXTS

WORD-FORMATION

Суфікси **-ian, -ion(-ation), -ment-** суфікси іменників та прикметників: Ukrainian, academician.

Префікс **dis-** утворює слова зі значенням, протилежним кореню: to appear з'являтися - to disappear зникати.

На префікси **a-, ab-, be-, com-, con-, de-, ex-, per-, pre-** наголос не падає. absorption, explain, prevent, decrease.

1. Read and translate.

- a) Ukrainian, Indian, Canadian;
- b) musician, politician, academician;
- c) discontinue, disorganize, discover, discovery, disconnect, disconnection ;
- d) absorption, become, complete, conclusion, exchange, perform, explain, prevent, decrease, depend, amount.

2. Form nouns with the help of suffixes **-ion (-ation), -ment**. Translate them.

- a) investigate, observe, combine, complete, isolate, found, conclude;
- b) accomplish, achieve, measure, establish, state, appoint.

3. Remember the following words. Find their translation below.

psychology [saɪ'kɒlədʒi], process ['prəʊses], absorption [əb'zɔ:pʃən], diffusion [dɪ'fju:ʒən], phenomenon [fi'nɒmɪnən] (pl) phenomena [fi'nɒmɪnə]

феномен, явище; явища; процес; абсорбція, поглинання; дифузія; психологія.

4. YOU CAN'T DO WITHOUT THIS VOCABULARY

exchange n - обмін; v обмінювати (ся)	due - обумовлений, відповідний
able a - здатний, умілий;	due to - внаслідок; завдяки, через, в зв'язку з; в результаті
be able - бути в змозі, могли	transfer n - перенесення; передача; v переводити, переміщувати
draw a conclusion - зробити висновок	enable v - давати можливість (право)
accomplish v - виконувати; завершувати	

5. Read and translate the following words and word-combinations.

1. **prove:** to prove facts, to prove to smb that, he proved that he was right, he was able to prove that
2. **conclusion:** a right conclusion, in conclusion, to come to the conclusion that..., to draw a conclusion
3. **accomplish:** accomplishment, to accomplish the observation, the accomplishment of the respiratory process
4. **due to:** due to his illness, due to a high temperature, in due time, his bad condition was due to a high blood pressure
5. **investigate:** investigation, to accomplish the investigation, the investigation of the blood cells.

6. 1. Read Text A. 2. Find in the text: a) words having the similar pronunciation with Ukrainian words; b) sentences in Past Perfect Active. Translate them.

SECHENOV AND HIS WORKS ON THE BLOOD GASES

I. M. Sechenov (1829-1905) was a prominent scientist, the founder of physiology and scientific psychology. The range of Sechenov's scientific interests and the number of his research works are really great. 106 scientific works were written by him. In these works he included the findings which he had observed and determined before. Some of his research works were connected with the investigation of the blood gases and their role in the respiratory process.

I. M. Sechenov isolated the blood gases and found out that most of the blood gases were combined with erythrocytes. No physiologist had been able to do it before Sechenov. On the basis of his observations I. M. Sechenov came to the conclusion that hemoglobin was that substance of the blood which accomplished the exchange of oxygen and carbon dioxide in the respiratory process. Physiologists of many countries who had worked on this problem before Sechenov could not estimate the role of hemoglobin in the act of respiration. So the accomplishment of the respiratory process is due to hemoglobin. I. M. Sechenov investigated the process of absorption of carbon dioxide by the solutions of salts. When he had completed his investigations, he proved that only 2/3 of carbon dioxide were dissolved in plasma. The rest of carbon dioxide was combined with red blood cells. The transfer of carbon dioxide from the blood into the lungs was due to the law of diffusion of

gas from fluid into the air. When Sechenov had investigated this phenomenon, he was able to answer the question why oxygen passed into the blood from atmospheric gases during the act of respiration.

7. Translate the following sentences according to the model.

No conclusions were drawn from this experiment.

Ніяких висновків не було зроблено з цього досвіду.

☺What have you noticed while translating this model?

1. The doctor has observed no considerable changes in the lungs. 2. No difference exists between the substance of the bones of the lower and upper extremities. 3. The surgeon came to no exact conclusion after he had examined the patient. 4. No human being can exist without oxygen. 5. No comments were made!

8. Answer the questions according to the model.

a) I have already published my findings. Have you?

b) I have not published my findings yet. I will have published them by the end of the month.

1. I have already changed my method of research. Have you? 2. I have already determined the findings of my observations. Have you? 3. I have already completed my investigations. Have you?

9. Answer the following questions. *What do we call a person who:*

1. discovers something? 2. founds some new theories? 3. investigates some phenomena? 4. researches in some field of science? 5. observes some changes in the experiments? 6. explores a medical problem? 7. suffers from some disease?

10. Read and translate Text B. Remember the given data to be able to answer the questions.

THE EXCHANGE OF GASES IN THE LUNGS

The exchange of gases takes place in the alveoli of the lungs. Oxygen passes into the blood and carbon dioxide passes into the atmospheric air. The exchange of oxygen and carbon dioxide is due to the difference of partial (парціальний) pressure of these gases in the alveolar air and in the venous blood.

The partial pressure of oxygen in the alveolar air is higher than in the venous blood. The transfer of oxygen from the atmospheric air into the blood is due to this difference of pressures. The partial pressure of carbon dioxide is higher in the venous blood and this enables carbon dioxide to pass from the blood into alveolar air. The process of transfer of gases into the medium (середовище) with a lower partial pressure is called diffusion. Hemoglobin is that substance of the blood which transfers oxygen in the blood. The oxygen capacity of the blood averages to 18-20 millilitres (ml) per 100 gr of blood. Carbon dioxide is transferred in

combination with hemoglobin and as bicarbonic salts. The combination of oxygen and hemoglobin is called oxyhemoglobin, that of carbon dioxide and hemoglobin - carbohemoglobin.

11. 1. Read and translate Text C by Alexander Lowen. 2. Make a list of words and phrases used for describing the remarkable properties of respiration. 3. Explain the meaning of the words in black type. 4. Do you agree with the author's ideas?

THE VOICE OF THE BODY

It is a common belief that we breathe with our lungs alone, but in point of fact, the work of breathing is done by the whole body. The lungs play a passive role in the respiratory process. **Proper breathing involves** the muscles of the head, neck, thorax, and abdomen. Breathing is a rhythmic activity. Normally a person at rest makes approximately 16 to 17 **respiratory incursions** a minute. The rate is higher in infants and in states of excitation. It is lower in sleep and in depressed persons. The depth of the respiratory wave is **another factor** which varies with emotional states. Breathing becomes shallow when we are **frightened or anxious**. It deepens with relaxation, pleasure and sleep. But above all, it is the quality of the respiratory movements that determines whether breathing is **pleasurable** or not. With each breath a wave can be seen **to ascend and descend** through the body. The head moves very slightly forward to suck in the air while the nostrils dilate or the mouth opens. The expiratory wave begins in the upper part of the body and moves downward: the head drops back, the chest and abdomen collapse, and the pelvis rocks forward.

Breathing easily and fully is one of the basic pleasures of being alive. The pleasure is clearly experienced at the end of expiration when the descending wave fills the pelvis with a delicious sensation. The rhythm of breathing is experienced by the total body as **a feeling of fluidity, softness, lightness and excitement**.

The importance of breathing needs hardly be stressed. It provides the oxygen for the metabolic processes; literally it supports **the fires of life**. But breath as "**pneuma**" is also the spirit or soul. We live in an ocean of air like fish in a body of water. By our breathing we are attuned to our atmosphere. If we inhibit our breathing we isolate ourselves from **the medium in which we exist**. In all Oriental and mystic philosophies, the breath holds the secret to **the highest bliss**. That is why breathing is the dominant factor in the practice of Yoga.



... I wonder if Beethoven held his breath the first time his fingers touched the keys the same way a soldier holds his breath the first time his finger clicks the trigger. We all have different reasons for forgetting to breathe.

- Andrea Gibson

LESSON 6.

Граматика: Безсполучникові підрядні речення.

Словотворення: Префікс dis-, im-, un-.

Тексти: Text A. The Physiology of the Lungs.

Text B. The Physiology of Respiration.

STEP 1. GRAMMAR

1. А. Прочитайте речення і дайте відповіді на питання.

The lungs which are among the hardest-working organs in the body, expand and contract up to twenty times a minute to supply oxygen to be distributed to tissues all over the body and expel carbon dioxide.

1. Скажіть, із яких частин складається це речення (скільки в ньому речень)? 2. Назвіть підмет і присудок в реченнях. 3. Чи є залежність між цими реченнями? 4. Чи є сполучник, який поєднує ці речення? 5. Перекладіть речення.

Б. Прочитайте і порівняйте наступні речення.

a) I know *bronchitis is an inflammation of the bronchi of the lungs.*

б) *Bronchitis symptoms of which include coughing up mucus, wheezing, shortness of breath, and chest discomfort is caused by a viral infection in more than 90 per cent of cases.*

☺ 1. Визначте типи підрядних речень (а) і (б). 2. Скажіть, як підрядні речення поєднуються з головним реченням? 3. Як перекладаються безсполучникові підрядні речення?

Безсполучникові підрядні речення

1. В англійській мові підрядні додаткові речення, які стоять після дієслова-присудка (а), і визначальні, які стоять після іменника (б), часто з'єднуються з головним без сполучника, так як сполучники *that, which, what, who, whom* можуть опускатися.

2. Додаткові підрядні речення переводяться зі сполучники *що* або *без нього*:

I know *my friend is not ill.*

Я знаю, (що) мої друг не хворий.

При перекладі на українську мову означальних підрядних речень потрібно ввести сполучник «який», наприклад:

My friend you know well is not ill. Мій друг, якого ви добре знаєте, не хворий.

2. Визначте види підрядних речень і перекладіть їх.

1. We know well Servet was the first anatomist to describe the pulmonary circulation in the first half of the 16th century (1536-1538). 2. The phenomenon of the transfer of carbon dioxide from the blood into the lungs Sechenov investigated is due to the law of diffusion of gas from the fluid into the air. 3. The vital capacity of the lungs many physiologists have studied changes in some cardiac and pulmonary diseases. 4. The great English anatomist W. Harvey found out that the heart changed its colour during the contractions. 5. Acute bronchitis usually has a cough that lasts around three weeks

3. Виберіть відсутні за змістом слова з поданих нижче. Дієслова поставте у відповідній формі (письмово).

1. On physical exertion the patient's... became deep. 2. When the temperature is high a patient usually ... deeply. 3. When one ... the lungs dilate. 4. When one ... the lungs contract.

breathe, breathe out, breath, breathe in

STEP 2. VOCABULARY. TEXTS

WORD-FORMATION

Префікс **dis-**, **im-**, **un-** мають від'ємне або протилежне значення :
discontinue, impossible, independent.

1. Read and translate the following words. Find in them:

a) suffixes: operate, various, regulation, changeable, appearance, importance, production, politician

b) prefixes: discontinue, discovery, impossible, exchange, independent, disconnect, untreated, inattentive

2. Read and translate the words with the same root:

associate, associated, associative, association; particular, particularly, particularity; change, changed, changing, changeable, exchange; connection, connective, connected; deep, deeply, depth.

3. YOU CAN'T DO WITHOUT THIS VOCABULARY

passage ['pæsɪdʒ] n - прохід; проток

breathe [bri:ð] v - дихати

breathe in - вдихати

breathe out - видихати

breath - дихання

respiration (лат.) - дихання

respiratory - дихальний

flow [fləʊ] n - ток, протягом; струмінь
втекати; циркулювати

depth [depθ] n - глибина

hemoglobin - гемоглобін

4. Read Text A. Find Present Participle, define its functions and translate sentences. Compose five Interrogative sentences to the text.

THE PHYSIOLOGY OF LUNGS

The physiology of the lungs is associated with their structure. There are over 700,000,000 alveoli in the lungs. The total surface of the alveoli is about 90 sq. m (square meters). The lungs have many capillaries with the total surface of about 80 sq. m. This particular structure of the lungs enables the exchange of gases between the alveolar air and the blood.

Elastic fibers of connective tissue composing the walls of the alveoli, alveolar passages and the visceral pleura enable the lungs to dilate.

When one breathes normally not all the alveoli and capillaries of the lungs are opened. When respiration becomes deep, the number of the opened alveoli and capillaries increases. The flow of blood into the lungs increases when one breathes in and it decreases when one breathes out.

The regulation of the vital capacity of the lungs is of particular importance to the exchange of oxygen and carbon dioxide taking place in the lungs. It is considered that in the adult the vital capacity of the lungs is about 3-4 litres. When the depth of respiration increases the vital capacity may be 6 litres and even more.

The lungs take part in the production of physiologically active substances, in the regulation of blood coagulation, in the metabolism of proteins, fats and carbohydrates.

5. Write down English equivalents of the following phrases:

має особливе значення для, що відбувається в легенях, беруть участь у виробленні

6. Give the English equivalents of the words in brackets. Translate the sentences into Ukrainian:

1. When we breathe out (потік) of blood into the lungs (зменшується). 2. One of the mechanisms of headache (пов'язаний) with the pressure made by a tumour on the cranial and cervical nerves. 3. During the act of respiration the air enters the lungs through the air (ходи). 4. When the doctor was examining the patient he asked him (дихати) deeply. 5. (Жирові) substances which are located in the cell compose 1-2% of its total weight. 6. (Кількість) of the fluid part of the blood called the plasma composes 60%.

7. Read and translate the following sentences into Ukrainian:

1. The treatment the patient had begun on the first of June was quite effective. 2. The condition of the patient we are treating has become better. 3. The methods of investigation the scientist had included in his research helped him to determine the origin of the pulmonary disease. 4. Each lung houses a bronchial tree which gets its name from the intricate network of air passages that supply the lungs with air. 5. White blood cells known as macrophages, located inside each alveolus, ingest and destroy airborne irritants that enter the lungs. 6. Snoring occurs due to an obstruction in the nose, sinuses or in the back of the throat; did you know that English King George II was one of the loudest snorers in history?

8. Complete the sentences choosing the appropriate clause:

1. The patient stated that... (a) he had had pneumonia two years before; b) he has pneumonia) 2. The doctor thought that ... (a) the white blood cell count will be normal; b) the white blood cell count would be normal) 3. The scientists established that ... (a) hemoglobin was the carrier of oxygen; b) hemoglobin is the carrier of oxygen)

9. 1. Read Text B. 2. Choose and translate indefinite personal sentences. 3. Say what the 2nd and 3rd paragraphs deal with.

THE PHYSIOLOGY OF RESPIRATION

If one investigates the act of inspiration (вдих) one will observe such phenomena. When one breathes in, the external intercostal muscles contract and lift (піднімати) the ribs. At this moment the diaphragm also contracts and goes down. The volume of the chest increases. The increase of the chest volume enables the lungs to extend. The pressure in the lungs becomes less and the atmospheric air enters the lungs.

When one breathes out, the external intercostal muscles and the muscles of the diaphragm become relaxed (розслаблені). The ribs go down, the diaphragm goes up, the volume of the chest decreases and the lungs contract. The pressure in the lungs becomes higher and the air goes out of the lungs, if one is sitting or lying one makes 16-20 respirations per minute. On physical exertion the respiratory rate and the depth of respiration increase.

Normally during one inspiration the man breathes in about 500 ml of air. On deep inspiration one breathes in 1.5-2 litres of air.

The vital capacity of the lungs in the male averages 3.5-4 litres and in the female 3-3.5 litres.

The respiratory rate and its depth depend on the amount of carbon dioxide in the blood.



At eight, he had once told his mother that he wanted to paint air.

- Vladimir Nabokov

UNIT 3. THE PHYSIOLOGY OF THE NERVOUS SYSTEM

LESSON 7.

Граматика: Часи групи Perfect Passive.

Підсилювальна конструкція it is ...that.

Форми інфінітива.

Перфектний інфінітив після модальних дієслів.

Словотворення: Суфікси -ize (-ise), ancy (-ency); - ness.

Тексти: Text A. The Brain.

Text B. Body Clocks.

Text C. The Munchies.

STEP 1. GRAMMAR

1. В англійській граматиці часи групи Perfect називають “the most troublesome fellow in our grammar”. А якщо це Perfect Passive? Поставте допоміжне дієслово to be із формули to be + Participle II (третя форма дієслова) в Perfect. Яку формулу ви отримали? Який компонент в формулі Perfect Passive to have been + Participle II (третя форма дієслова) змінюється за часами, особами і числами? Як утворюються питальна і заперечна форми?

Три «кіта» для розуміння того, коли вживати цю форму - 1) дія тільки відбулась; 2) дія відбулась в минулому, але наслідки продовжуються до теперішнього часу; 3) на час дії немає ніяких вказівок, завдяки чому складається враження, що інтерес і важливість має тільки сам факт.

Так як форма Perfect Continuous відсутня в пасивному стані, Present Perfect Passive також виконує функції цього часу.

2. Утворіть форми Perfect Passive від наступних дієслів:

To observe, to prove, to find out, to accomplish, to count, to prolong.

3. Утворіть минулий і майбутній час в наступних реченнях.

1. The work has been completed. 2. The important findings have been proved.

4. Зробіть наступні речення а) заперечними; б) питальними.

1. The new methods of research have been included into our work. 2. The course of treatment has been prolonged. 3. Participants of the experiment have been allowed to sleep. 4. In their study, domestic animals have been used to help people through healing processes.

5. Визначте присудок в наступних реченнях, його час і дайте формулу, за якою вони утворені.

1. The direction of the nerve fibers has already been established experimentally. 2. Several new medical schools have been founded in this country recently. 3. Similar studies have not been done in people. 4. The first IQ test was developed by the Parisien psychologist Alfred Binet after 80 children had been examined in a considerable research for the measurement of intelligence.

6. Розкрийте дужки, виберіть час і стан для дієслова-присудка.

1. Recently some important findings (to obtain) by the researchers. 2. All the observations (to analyze) and (to summarize) by the physiologists by the end of their experimental work next month. 3. The patient (not to feed) since early morning because he will be operated on today. 4. The treatment (to prolong) as the patient is still complaining of a general weakness. 5. Before the surgeon began the blood transfusion, the number of red blood cells (to count).

7. Прочитайте інформацію про видатного вченого-фізіолога Івана Павлова, а потім речення в таблиці. Порівняйте переклад цих речень і дайте відповіді на питання: а) Яка конструкція в англійських реченнях

перекладається за допомогою « саме», «тільки»? Для чого використовується ця конструкція?

Ivan Pavlov, the famous scientist-physiologist, laureate of the Nobel prize (1904) in Medicine and Physiology, had acquired the world-wide fame due to his investigations in the field of physiology of reflexes, in particular, conditioned reflexes as essential constructive elements of adaptive mechanisms in behavior of animals and human beings.

1) I. Pavlov received the Nobel Prize in recognition of his work in Physiology in 1904.	1) І. Павлов отримав Нобелівську премію в знак визнання його роботи з фізіології в 1904 році.
2) It was I. Pavlov who received the Nobel Prize in recognition of his work in Physiology in 1904.	2) Саме І. Павлов отримав Нобелівську премію в знак визнання його роботи з фізіології в 1904 році.
3) It was his work in Physiology that I.Pavlov received the Nobel Prize in 1904.	3) Саме за свою роботу з фізіології І. Павлов отримав Нобелівську премію в 1904 році.
4) It was not until 1904 that I.Pavlov received the Nobel Prize in recognition of his work in Physiology	4) Саме (тільки) в 1904 році І. Павлов отримав Нобелівську премію в знак визнання його роботи з фізіології.

8. Перекладіть наступні речення.

1. **It is the central nervous system** that helps all the parts of the body such as the digestive, **endocrine**, immune, lymphatic and muscular systems to communicate with each other. 2. **It is 43 different pairs of nerves** that connect your central nervous system to the rest of your body. 3. **It is 12 of these nerve pairs** that connect your CNS to the brain, while the remaining ones connect the CNS with the spinal cord. 4. **It is in the human brain** where there are more nerve cells than there are stars in the Milky Way.

9. Використайте підсилювальну конструкцію за зразком вправи 7 в наступних реченнях.

1. Alfred Binet devised and published a scale for registering intelligence quotient (IQ) in L'Annee Psychologique in 1905. 2. The Binet Scale was used by the Paris educational authority for examining children who had been recommended for transfer to a special school for mental defectives. 3. By the end of World War I, the Army intelligence examination had been applied to nearly 2,000,000 men, of whom 7,800 had been recommended for immediate discharge as being of subnormal mental caliber (nearly 30% of the total were found to be illiterate).

STEP 2. VOCABULARY. TEXTS

WORD-FORMATION

Суфікс – **ize (-ise)**, - суфікс дієслівів: devise, summarize, analyze.
 Суфікс **-ancy (-ency)** - це суфікс іменників: infancy, insufficiency.
 Суфікс **-ness-** суфікс іменників, утворених від прикметників: whiteness, blindness, witness.

1. Read and translate.

- a) to realize, to organize, to advise, to practise, to mobilize;
- b) sufficiency, efficiency, deficiency, emergency, accuracy, dependency, urgency, persistency;
- c) illness, happiness, coldness, redness, readiness, badness, fitness, alertness, breathlessness, sleeplessness, softness, consciousness.

2. Read and translate the words with the same root.

Weak, weakness; analysis, analyze, analytical, analytically; important, importance, importantly; bad, badness, badly; to tire, tired, tiredness; quiet, quietly, quietness.

3. Read and memorize the words.

Mechanism	Cortex	Cortical	corticovisceral
motor cortex	stimulus (stimuli)	hemisphere	hypothalamus

4. YOU CAN'T DO WITHOUT THIS VOCABULARY

<p>Complicate – ускладнювати(ся); складний, заплутаний; ускладнений</p> <p>Area – площа, простір, ділянка; район, зона; сфера</p> <p>Control - керівництво, управління; керувати, управляти; контролювати, перевіряти</p> <p>Constant – постійний, сталий</p> <p>Move – рухатися,</p> <p>Order – порядок; наказ; наказувати</p> <p>Vision – зір; проникливість; образ, картина; видіння</p> <p>Feeling – почуття, емоція</p> <p>Pattern – патерн, зразок, модель</p> <p>Entire – цілий; повний</p> <p>Circadian - циркадний</p>	<p>Habit – звичка, звичай, схильність</p> <p>Roughly – грубо; приблизно</p> <p>Alert – насторожений, пильний; моторний, жвавий; тривога</p> <p>set – комплект, набір; ставити, розміщувати, вставляти; сидати</p> <p>insight – прозорливість, проникливість; інтуїція</p> <p>out of step - не в ногу</p> <p>shift – переміщення; зміна; пересуватися, перемещатися; мінятися, змінюватися</p> <p>rate – норма; ставка, ціна; темп; розряд, сорт</p> <p>obesity – гладкість, оградність</p>
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5. Read Text A. Give examples of sentences: a) carrying the construction “it is ... that”; b) with Present Perfect Passive.

THE BRAIN

Scientists consider that our brain is the most complicated mechanism which has ever been constructed.

The weight of the human brain is from one to two kilograms. It has a volume of about 3.21 litres and consists of about 12 billion cells. It has been determined by the scientists that each cell is connected to the other directly or indirectly by nerve fibers.

The brain is the centre of a wide system of communication. It has been found out that a constant flow of stimuli come into the brain through the spinal cord. The stimuli come to the brain from our eyes, ears, and other sense organs for pain, temperature, smell and other feelings. When all the received stimuli have been summarized and analyzed the brain sends orders through the nerve fibers in the spinal cord to different parts of the human body. It is due to these orders that one eats, moves, hears, sees and does many other things.

To estimate the functions of different areas of the brain many experiments have been carried out by the investigators. It is due to such experiments that the investigators have been able to determine those areas of the brain which control vision, hearing, physical movements and emotions.

Due to experimental studies it has been determined that the motor cortex controlling many body movements of the human being becomes tired rapidly. But the hypothalamus which controls such functions as blood pressure is almost never tired.

6. How would you use the following phrases when discussing Text A? Make up sentences based on the text.

The most complicated mechanism which has ever been constructed; a constant flow of stimuli; to estimate the functions of different areas of the brain; due to experimental studies it has been determined.

7. Read text B. First of all put the paragraphs in the correct order. Then give examples of sentences: a) with Present Perfect and Passive Voice; b) the Infinitive after Modal Verb.

BODY CLOCKS

A. Everyone's rhythms are unique, that is why you might like to stay up late while your sister always wants to go to bed early. But overall, everyone is programmed to feel tired at night and alert during the day.

B. Learning about our body clocks may help scientists understand why problems arise when we act out of step with our circadian rhythms. For example, travelling across time zones can make people wake up in the middle of the night. Regularly staying up late can make kids do worse on tests and quizzes. And working shifts at night lead to higher rates of heart disease, diabetes and obesity.

C. The human body is regulated by several internal clocks, which control eating and sleeping patterns among other things. Try this: For an entire day, forget about the clock. Eat when you are hungry and sleep when you are tired. What do you think will happen? You may be surprised to find that your day is much like most other days. You'll probably get hungry when you normally eat and tired when you normally sleep. Even though you don't know what time it is, your body does.

D. Scientists have known for a long time that the light of day and the dark of night play important roles in setting our internal clocks. Now, new discoveries are giving scientists insights into how these clocks work.

E. There is a growing sense that when we eat and when we sleep are important parts of how healthy we are.

F. These patterns of daily life are called circadian rhythms, and they are more than just habits. There are several clocklike systems inside our bodies that follow a roughly 24-hour cycle. Throughout the day and night, our internal clocks direct changes in temperature, body chemicals, hunger, sleepiness and more.

8. Get ready to read the following text but initially have a look at new words and their combinations.

Munchies – відчуття голоду To hit – уражати Vulnerable – уразливий Guard – пильність To devour – пожирати Cookie – домашнє печиво To crave – жадати Craving - тяга To be equipped – бути підготовленим To defeat – завдавати поразки To deal with – мати справу з To store – накопичувати(ся) Glycogen – глікоген To release – випускати Horrific - жахливий	Period - менструація To deplete – виснажувати Trainload - потяг Celery - селера To go bananas – божеволіти (сл.) To trigger - викликати To quell - заглушати To wolf down – пожирати жадібно Goodies - солодощі Admittedly - признатися Junk – <i>тут</i> солодощі Vigorous - енергійний To hold – 1)тримати, держати;; 2) стримувати; 3) проводити To release one's hold - звільнити
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9. Read and translate the following words and word-combinations.

1. **Munch:** Syn.: to crunch, to bite, to masticate; (to chew with steady or vigorous working of the jaws, often audibly); to munch an apple; munchies.
2. **Hit;** to hit something hard (with a hammer); to hit below the belt; to hit a man when he is down; to hit somebody on the head (in the face);
3. **Guard:** guard of honour; to be on guard; the guard at the door; to be on the guard;
4. **Devour:** to devour one's prey; to devour one's dinner; to devour a novel; to devour somebody with one's eyes; he devoured every word;
5. **Defeat:** to defeat the enemy; to defeat a candidate; to defeat somebody of his hopes;
6. **Release:** to release a bird; to release from care; to release from pain;
7. **Deplete:** to deplete one's resources; to deplete one's strength; to deplete one's pocket; to deplete one's bowel;
8. **Quell:** to quell one's fears; to quell pain.

10. Read Text C. Look through the text and translate sentences. Which sentences are true for you? Discuss the text in group.

THE MUNCHIES

The munchies hit you when you're at your most vulnerable. When your guard is down, they push your private taste buttons and don't let go until you've devoured the entire bag of candy, carton of ice cream or (and?) package of cookies.

Of course, it's true that your emotions have something to do with food cravings, but there are also absolute biological reasons for the munchies.

SOME OF IT'S ALL IN YOUR LIVER

Once you understand the physiological meanings behind the munchies, you'll be better equipped to defeat them. "You get the seemingly uncontrollable cravings for two main reasons," says Eric Sternlicht. "The first has to deal with levels of glucose – or sugar – in your blood. This is necessary for energy and is stored in the liver as glycogen. In between meals, the liver releases glycogen into your bloodstream. As long as there's enough glycogen in your liver, you can move through the day without feeling hungry."

But sometimes you don't have enough glycogen in your liver. Like when your body undergoes those horrific hormonal changes right before your period. Exercise, too, can deplete glycogen stores. And when that happens, wham! You crave food. But not just any food. You can eat a trainload of celery and still have the munchies, because if the body is low on sugar, that's what it wants: SWEETS!!!

SOME OF IT'S ALL IN YOUR BRAIN

The second reason your appetite goes bananas has to do with your brain. Your brain is made up of numerous neurotransmitters, which send messages to various parts of your body. Imbalances in certain appetite-controlling neurotransmitters trigger cravings for certain food.

WHEN YOU'VE GOT A MUNCHIE ON YOUR BACK...

Whatever the reason, when the munchies strike, you have to satisfy them with sugar. Most of us reach for our dear, dear friends – bars of Snickers, different chocolates. However sweet they may seem, they're full of as much (if not more) fat than sugar! As a result, most of the food you eat to quell the munchies ends up in your fat cells – very little glycogen actually makes it to your liver or bloodstream, so after you've wolfed it down, you still want more.

To control (and satisfy) yourself, you'd better reaching for a piece of fruit or a glass of juice – no, really. Fruit is not just fat-free and high in fiber, it's extremely high in fructose, a type of sugar your liver can easily store.

And if you want to have your cake and eat it too, at least start with a piece of fruit; then 15 or 30 minutes later, go for the goodies.

Admittedly, shifting from candy and ice cream to fruit isn't easy. But it is possible. When the munchies come gunning for you, remind yourself that what they're demanding is sugar. So eat the fruit first and note how much better you feel. You may even discover you don't want the junk.

KEYS to exercise 7: 1 C; 2 F; 3 A; 4 D; 5 B; 6 E.



The brain is like a muscle. When it is in use we feel very good. Understanding is joyous.

- Carl Sagan



A man who works with his hands is a laborer; a man who works with his hands and his brain is a craftsman; but a man who works with his hands and his brain and his heart is an artist.

- Louis Nizer



Everything we do, every thought we've ever had, is produced by the human brain. But exactly how it operates remains one of the biggest unsolved mysteries, and it seems the more we probe its secrets, the more surprises we find.

- Neil deGrasse Tyson

LESSON 8.

Граматика: Часи групи Perfect Passive.

Підсилювальна конструкція it is ...that.

Форми інфінітива.

Перфектний інфінітив після модальних дієслів.

Словотворення: Префікси -un, -in, -im, -il, -ir . Суфікс -less.

Тексти: Text A. Conditioned Reflexes.

Text B. What Does Sleep Do For Us?

Text C. Sleep – Tonic For A Busy Life.

STEP 1. GRAMMAR

1. Згадайте форми інфінітиву для часів Indefinite (Simple), Continuous, Perfect в Active і Passive.

Infinitives	Active	Passive
Indefinite (Simple)	To determine	To be determined
Continuous	To be determining	-
Perfect	To have determined	To have been determined

☺ Дія, виражена перфектним інфінітивом, звичайно має відношення до минулого часу.

Can + Perfect Infinitive вживається в заперечних та питальних реченнях.

He cannot have known this. – Він не міг не знати цього/Не може бути, щоб він цього не знав.

Can he have known this? – Невже він знав це?

May + Perfect Infinitive перекладається «можливо», а інфінітив – дієсловом в минулому часі.

The scientists may have got important information.. – Вчені, можливо, отримали важливу інформацію

Must + Perfect Infinitive перекладається «має бути, ймовірно», а інфінітив – дієсловом в минулому часі.

The doctor must have examined the patient already. - Лікар, ймовірно, вже оглянув пацієнта.

2. Перекладіть наступні речення, звертаючи увагу на інфінітиви після модальних дієслів.

1. Can such a serious complication have occurred in this case? 2. The disease can't have developed so quickly. 3. The pain may not have been controlled yet. 4. The doctor may have administered this patient a light diet. 5. The nurse must have already given the injection. 6. His vision must have been checked up. 7. According to Dr Gideon Mantell, 40-foot-long dinosaurs might have used their short arms to grasp food.

3. Використайте підсилювальну конструкцію в наступних реченнях.

1. The motor cortex controls many movements of the human being. 2. During the systole both ventricles of the heart contract. 3. On deep respiration the vital capacity of the lungs may become 6 litres. 4. In 1538 Andreas Vesalius published his six-volume work “Tabulae Anatomicae”.

4. Прочитайте наступні речення і дайте відповіді.

1) Patient Kovalenko has already been operated on. Patient Boiko must be operated on. *Кого із пацієнтів вже прооперовано?*

2) The new book on the physiology of respiration will have been published by the end of the year. The book “The Anatomy of the Cardiac Blood Vessels” has already been published. *Котра із книг буде опублікована?*

3) Patient A. caught a severe cold with high temperature, and his doctor is going to send him to the hospital. Patient B. had to be followed up at his therapist after he had been discharged from the hospital. *На кого з пацієнтів чекає лікарня?*

5. Перекладіть парні речення. Визначте інфінітиви.

1. The patient may be discharged soon. The patient may have been discharged by the 15th of the last month. 2. The process of inhibition in the cortex of experimental animals must be described in detail. The process of inhibition in the cortex of experimental animals must have been described after the observation.

6. Згадайте значення слова “one”. Перекладіть речення.

1. The brain is *one* of the most complicated mechanisms that has ever been constructed by nature. 2. In patients with tuberculosis the morning temperature is usually normal but the evening *one* is high. 3. In pneumonia *one* may observe considerable changes in the white blood cell count. 4. It is in infancy that *one* begins to develop first conditioned reflexes. 5. The right lung has three lobes and the left *one* has only two.

STEP 2. VOCABULARY. TEXTS

WORD-FORMATION

Префікси **-un, -in** - ці префікси означають відсутність або заперечують те, що виражено в корені слова: *unusual* - незвичайний, *inorganic* - неорганічний.

NB! Префікси **-im, -il, -ir** - це фонетичні варіанти префікса **-in**.

Суфікс **-less** - це суфікс прикметників, що вказує на відсутність будь-чого або якоїсь якості: *useless, breathless, hopeless*.

1. Read and translate.

a) uninteresting, uncontrolled, imprecise, irregular, unbelievable, incorrect, uncommon, insufficiency.

b) careless, homeless, lifeless, sleepless, painless, restless, childless.

2. Read and translate the words with the same root.

Condition, conditioned, unconditioned, conditional, conditionally; produce, product, productive, unproductive, productively; add, addition, additional, additionally; act, action, activity, react, reaction, reactive, reactively; associate, association, associative, associatively; significance, significant, insignificance, insignificant, significantly, insignificantly.

3. YOU CAN'T DO WITHOUT THIS VOCABULARY

Feed (fed, fed) – харчувати(ся), годувати(ся) <i>The mother feeds her infant.</i> <i>Milk is the main feeding of an infant.</i>	Supply –запаси; постачання; постачати, доставляти <i>Blood supply may become decreased in some heart diseases.</i>
Obtain – одержувати, здобувати, домагатися	Response – реакція, відповідь <i>The response to the treatment was rapid.</i>
Develop – розвивати(ся); розробляти <i>The patient developed a bad pain.</i>	Somatic - соматичний Occipital - потиличний

4. Read and translate Text A. State the difference between conditioned and unconditioned reflexes.

CONDITIONED REFLEXES

All the visceral and somatic reflexes including the protective, feeding and others are formed by various internal and external stimuli. These stimuli produce reactions not depending on surrounding conditions. The great physiologist Ivan Pavlov called them unconditioned reflexes.

In human beings the nervous system has the additional ability to form cortical associations which increase the range of reactions. This function is obtained by all the human beings and formed upon signalization, i.e. the process in which an ineffective reflex stimulus forms the same reactions as the stimulus with which it has become associated. Ivan Pavlov called these individually obtained reflexes conditioned because they are developed only in connection with some other reflexes.

It is through constant contacts of life that men develop many conditioned reflexes. They begin to develop already in infancy. During human development their number is much increased through training and education.

Under experimental conditions it was determined by I. Pavlov that many new conditioned reflexes to stimuli not supplied by Nature could be established in dogs. But such stimuli had to be associated with those which formed as unconditioned response. I. Pavlov determined that in higher animals it was in the cortex that conditioned reflexes were formed.

5. Complete the sentences choosing an appropriate word.

1. The ear is the sense organ of (vision, hearing). 2. The human being smells with the (nose, eye). 3. The motor cortex controlling many body movements (becomes tired rapidly, is almost never tired). 4. The stimuli from different parts of the human body come to the brain through (the blood vessels, the nerve fibers in the spinal cord).

6. Do you know that:

1) the vision centres are located in the occipital area of the cortex? 2) the nervous system of the human being has about ten times more nervous cells than the number of all people in the world? 3) the stimuli pass into the brain through the spinal cord very rapidly – about 100 m per second?

7. Read the passage and say what interesting things you have learned.

If a human being has a bad headache he often feels pain within the skull. But really the nerves through which pain stimuli pass exist mainly in the blood vessels and nervous system, but not in the proper substance of the brain. So the brain itself does not feel pain.

8. Read and translate Text B. What does sleep do for us?

WHEN MAN SLEEPS ...

The nervous cells of the cortex are the most delicate of all the cells of the human body.

It is in the moment of tiredness of the cortical nervous cells that the process of inhibition begins to act. This process does not allow new stimuli to pass to the tired areas of the brain. To provide the smooth work of the brain the nervous cells must be well supplied with oxygen and feeding substances. And for this purpose any human being must have regular complete rest, i.e. sleep.

When the process of inhibition extends over a great number of cells, spreads widely over the cortex and even over the subcortical areas of the brain one falls asleep.

When one sleeps the vital activity of the nervous system is restored. So sleep is of a great protective significance to the human being.

The man sleeps about one third of his life. Numerous investigations and experiments have shown that sleep is more necessary for the human being than food. One can live longer without food than without sleep.

During a sound quiet sleep the whole activity of the human organism changes, the body metabolism decreases, the respiratory and pulse rates become slower, the body temperature drops. Though the stimuli continue to come into the brain, the inhibited cortical cells do not react to them.

9. Divide Text B into logical parts and find the topical sentences of each part.

10. Read and translate Text C. Five sentences have been removed from the text. Choose from the sentences A-E the one which fits each gap (1-5).

SLEEP – TONIC FOR A BUSY LIFE

Every culture recognizes how important sleep is to wellbeing. (1) Ancient medical texts around the world show time and again how critical sleep is to healing and health. Sleep is the one sure cure for the wear and tear of everyday life. A good night's sleep brings us the energy and stamina to face the challenges of a new day. Or, as William Shakespeare so wonderfully put it, sleep "knits up the raveled sleeve of care" by repairing many of the hurts that our minds and bodies suffer.

(2) However, this is not true for everybody. A growing number of people find that they cannot get to sleep easily, or that they sleep very poorly during the night. (3) The number of insomniacs, or people suffering from sleep deprivation, seems to be growing rapidly and urbanized societies. However, there is good news. Insomnia is related in part to how people lead their lives. Insomniacs can help themselves find more restful sleep by changing some of the ways they approach taking a night's rest. If you find it hard to get a good night's sleep, try following these simple guidelines to improve your sleep habits.

- Make your bedroom a place of calm and peace. (4) Keep the room as clear and tidy as you can.
- Train your body clock to regular rest and activity rhythms. Always get up around the same time, even when you sleep badly. Always go to bed around the same time. This helps train your mind and body to welcome sleep on a regular cycle, even when your life is demanding and stressful.
- Do not use the weekends for catching up on your sleep.
- Napping during the day can be a great way to find energy and inspiration.
- Take your exercises in the morning. Exercise is good for sleep in general. (5) By the way, exercise stimulates the brain, too.
- Drink a cup of chamomile tea before you go to bed. Herbal teas help you relax and can do you more good than a sleeping pill or sedative. If you take herbal tea regularly, the smell alone can act as a signal to your body that it is time to sleep.

A	This condition is called insomnia.
B	Gentle exercise before breakfast is best of all.
C	Sleep is a natural good that most of us enjoy without thinking.
D	Sleep is mankind's original, oldest and kindest medicine ever.
E	Take out any computers, televisions, or music equipment.

KEYS to exercise 10: 1 D; 2 B; 3 A; 4 E; 5 B.

CYCLE II. MICROBIOLOGY

UNIT 4. MICROORGANISMS

LESSON 9.

Граматика: Замінники модальних дієслів.

Похідні від займенників *some, any, no, every*.

Словотворення: Суфікси *-th, -ish, -ful*.

Тексти: Text A. Microorganisms.

Text B. How Microorganisms Enter The Human Body.

STEP 1. GRAMMAR

1. Прочитайте наступні речення, звертаючи увагу на замітники модальних дієслів. Запам'ятайте ці замітники-еквіваленти.

Present	He can do this work	=	He is able to do this work.
Past	He could do this work.	=	He was able to do this work.
Future	-		He will be able to do this work
Present	He may do this work.	=	He is allowed to do this work.
Past	He might do this work.	=	He was allowed to do this work.
Future	-		He will be allowed to do this work.
Present	He must do this work.	=	He has to do this work.
Past	-		He had to do this work.
Future	-		He will have to do this work.

☺ 1. Чим можуть бути замінені модальні дієслова *can, may, must*? 2. Як змінюються еквіваленти модальних дієслів за часами? 3. Як будуються заперечна і питальна форми з еквівалентом *to have to*?

2. Поставте присудок в майбутньому часі.

1. The scientist can prove his conclusions. 2. The patient may walk. 3. The nurse must feed the infant.

3. Поставте присудки в заперечній і питальній формах.

1. The patient was able to fall asleep after taking the medicine. 2. We had to summarize and analyze all the findings of our observations. 3. Ершу fifth-year students will be allowed to operate on the patients by themselves.

4. Поміняйте модальні дієслова на їх еквіваленти.

1. The doctor must determine the origin of the infection. 2. The doctor could reveal the consolidation in the lung by the X-ray examination. 3. The students may not be away from the lecture. 4. The best students of our group must take part in the student's scientific conference. 5. The scientist can observe a rapid growth of microorganisms under the microscope.

5. Замість теперішнього часу використайте в реченнях минулий час.

1. The infant must move as much as possible for his proper development. 2. The functions of the heart in this patient can be impaired due to the grippe. 3. Working on the computer, one must give rest to the organism (particularly to the brain and the eyes) every hour or half an hour. 4. His constant tiredness may result from the state of his health.

6. Перекладіть наступні речення, звертаючи увагу на модальні дієслова.

1. A single kiss can contain 40,000 parasites, 250 types of bacteria and up to 0,45 grams of fat.
2. Kindness is the language which the deaf can hear and the blind can see. (Mark Twain)
3. One might think you know everything.
4. I have a running nose, I must have caught a cold.
5. You have to stop your car when people walk across the street.
6. In California, you will be allowed to drive when you reach the age of fifteen.
7. You can't judge a book by its cover.
8. Must we do exercise 15? – No, you needn't.
9. You should have helped your friend!
10. If you told the truth, you don't have to remember anything. (Mark Twain)
11. Friends may come and go, but enemies accumulate.
12. Wrinkles should merely indicate where smiles have been.
13. Money can't buy you love, but it could buy your way out of a tight corner if you've forgotten about your girl-friend's birthday.
14. Food is now international. We can eat burgers anywhere in the world today but they started in the United States.
15. Politicians are like nappies, they should be changed often, and for the same reason.
16. We should not only use all the brains we have, but all that we can borrow.
17. Chocolate releases small amounts of chemicals in the brain, such as serotonin and phenylethylamine, which can give a slight mood lift.
18. He that would eat the fruit must climb the tree.
19. A man without a smiling face mustn't open a shop.
20. You can write to Queen Elizabeth II at the following address:
Her Majesty The Queen, Buckingham Palace, London SW1A 1AA.

STEP 2. VOCABULARY. TEXTS

WORD-FORMATION

Суфікс **-th** утворює іменник від прикметника, іноді від дієслова: warm *теплий* – warmth *тепло*; grow *рости* – growth *ріст* .

При утворенні іменника від прикметника за допомогою суфікса **-th** часто має місце зміна голосної кореня слова: strong *міцний* – strength *сила*.

Суфікс **-ish** утворює прикметники від а) іменника: fever *лихоманка* - feverish; б) прикметника; в цьому випадку новий прикметник має значення неповної якості: yellow *жовтий* - yellowish *жовтоватий*.
Суфікс **-ful** утворює прикметник від іменника, іноді від дієслова, означає наявність тої чи іншої якості: hope *надія* – hopeful.

1. Read and translate.

- depth, length, truth, width, death.
- reddish, thinnish, womanish, fattish, longish, blackish, thickish.
- useful, aimful, purposeful, beautiful, helpful, thankful, watchful, painful, harmful, restful, meaningful, respectful.

2. Form new words using the given suffixes. Translate the words.

-ence, -ance	occur, persist, exist, depend, enter, clear, appear
-ment	Impair, develop, move, establish, appoint, require
-able	Favour, control, vary, depend, value, consider
-sion	Invade, divide, conclude, include, decide, diffuse
-th	Deep, grow, wide, strong, long, warm, dead
-ish	Thin, fat, long, green, red, sweet
-ful	Peace, rest, mind
-y	Dirt, wind, sleep,
-less	Help, hope, love, home, child, sleep, harm

3. Read and translate the following sentences.

1. The recovery was uneventful. 2. Tired with all this, for restful death I cry. (W.Sh.) 3. The diagnosis made by the doctor was undoubtful. 4. My friends are in need, and I am ready to be helpful at any moment. 5. We are hopeful to see you living and well. 6. The test is useful in patients whose physical condition limits exercise. 7. Clinical and laboratory signs and symptoms are generally unhelpful. 8. Many beautiful things to hear, to see belong to you, belong to me! The sun, the trees, the grass, the sky, the yellow moon that's passing by, the blowing winds, the birds that sing, bright autumn woods, gay flowers of spring, the cold long winter with snow so white, the running rivers, the stars of night.

4. Read and memorize the following words.

Microorganism, aerobic, anaerobic, coccus, cocci, bacillus, bacilli, virus, viral, virulent, lobar, pneumococci, consolidation, mucus, mucous, membrane, phagocyte.

5. YOU CAN'T DO WITHOUT THIS VOCABULARY.

Growth – зростання, ріст; збільшення	Destroy – руйнувати, знищувати
Favourable - сприятливий	Occur – траплятися, мати місце
Multiply – множити(ся),	Reveal – показувати, виявляти

збільшувати(ся) Size – розмір, величина, об'єм Certain – певний, відомий; впевнений Environment – оточення, середовище Invade – захоплювати, вдиратися	Persist – наполягати, бути впертим Impair – погіршувати(ся) Catch (caught, caught) – ловити, спіймати; збагнути; зачепити(ся)
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6. Read and translate the following word-combinations.

1. **Favourable:** a favourable reaction, favourable condition, favourable results, a favourable development;
2. **Environment:** home environment, the conditions of the environment, the environment acts favourably;
3. **Occur:** occurred, a disease occurs, an interesting phenomenon occurred during the observations. When did it occur?
4. **Persist:** persisted, the disease persists, the temperature persists, the pain in the left side persisted.
5. **Impair:** impairment, to impair the left lung, to impair the functions of the pancreas, to impair the health.

7. Make up English sentences.

1. Вчені вважають, що кожної секунди в тілі людини руйнується біля 10000000 червоних кров'яних тілець.	Scientists, that, 10,000,000, are, consider, about, red, blood, cells, the, destroyed, every, second, human, in, body
2. Через шкіру всмоктується не більше 1% кисню, необхідного організму людини.	Not, oxygen, the, human, for, body, more, than, necessary, is, absorbed, 1%, of, through, the, skin.
3. В сприятливому навколишньому середовищі мікроорганізми розмножуються дуже швидко.	In, multiply, favourable, may, very, environment, microorganisms, rapidly, a.

8. Read Text A. a) Translate paragraphs 3 and 6 in written form. b) Put questions to all the paragraphs of the text. c) Write down the equivalents of the following word-combinations:

Існуючі мікроорганізми, життя і зріст, збільшуватися у розмірі, ніяка хвороба не трапляється, повністю зруйнувати, інфекція може мати місце, вивчати під мікроскопом, продукувати хвороби, людина хвора на лобарну пневмонію, захисні бар'єри.

d) **Translate the following English word-combinations:** the man with lobar pneumonia; the growing organism; no disease occurs; any minute virulent microorganisms; the process of division; they enter the tissue and destroy it; the disease persists; the local protective agents; the consolidation may develop; according to this feature; the microorganisms produce diseases; considerably

impaired because of; favourable for the development; to be revealed; if one examines under the microscope; microbe cell destroyer.

MICROORGANISMS

All the existing microorganism can be divided into two main groups – aerobic and anaerobic. Aerobic microorganisms must have atmospheric free oxygen for their life and growth. However one knows that free oxygen is not favourable for the development of anaerobic microorganisms.

Bacteria vary in shape and according to this feature they are divided into some groups. Spherical bacteria have been called cocci. They are also subdivided into several groups. Rod-shaped bacteria are called bacilli.

When bacteria multiply they divide. The growing organism increases in size up to a certain limit and in due time divides. The process of division depends on the conditions of the environment.

Any minute virulent microorganisms may invade the human body. But due to the local protective agents of the human organism they are destroyed. In this case no disease occurs.

However the local protective agents of the human organism are not always able to destroy completely the invading microorganisms. It is known that in such a case a local or general infection may occur.

Most of the microorganisms produce diseases when they enter the tissue and destroy it. If one examines under the microscope the alveoli of the lung of the man with lobar pneumonia a great number of pneumococci can be revealed. While the disease persists the lung may be considerably impaired because of the consolidations which may develop in it.

But the human organism can fight against the microorganisms which have passed its first protective barriers, i.e. skin and mucous membranes.

The prominent scientist I. Mechnikov had made many investigations before he was able to come to the conclusion that leucocytes could catch and destroy certain microbes. I. Mechnikov called them phagocytes or microbe cell destroyers.

9. Answer the following questions.

1. What conditions are favourable for the growth and life of both aerobic and anaerobic microbes?
2. According to what are bacteria divided into groups?
3. To what limit do growing organisms increase in size when they multiply?
4. Due to what are minute virulent microorganisms destroyed when they invade the human organism?
5. In what case may local or general infection occur?
6. What can be revealed under the microscope in the alveoli of the lung of the man with lobar pneumonia,
7. Why may the lung be considerable impaired while the disease persists?
8. What barriers do skin and mucous membrane form?
9. What is the role of leucocytes in the human body?
10. I. Mechnikov was awarded the 1908 Nobel Prize in Physiology or Medicine for his discovery, wasn't he?

10. Put the paragraphs of the Text B in the correct order. Read and translate the text.

HOW MICROORGANISMS ENTER THE HUMAN BODY

A. The skin and mucous membranes of the body have a large number of bacteria, some of them are highly pathogenic in a favourable environment. The spread of these bacteria is controlled by the skin and phagocytes fighting against the invaders.

B. The way by which a microorganism enters the human body is an important factor to determine the occurrence of any disease. Certain bacteria can persist and develop in the human body only coming into contact with the respiratory tract, others through contact with the mucus of the intestines.

C. If there are no wounds on the skin no bacteria can invade it. But if any smallest wound exists then bacteria can pass into the tissue. The thin membranes about the eye, in the nose and throat have less protective properties against bacterial invasion and infection may often develop in these points.

KEYS to exercise 10: 1 C, 2 B, 3 A

LESSON 10

Граматика: Похідні від займенників *some, any, no, every*.

Дієслова *to be, to have*.

Словотворення: Суфікс *-ly*.

Тексти: Text A. The Founder of Virology D. Ivanovsky.

Text B. Alexander Fleming: An Accidental Discovery.

Text C. Microbes, or Bugs, or Germs.

STEP 1. GRAMMAR

1. Прочитайте наступні речення і зверніть увагу на займенники. Дайте відповіді на запитання.

Give me some books.	Somebody wants to see you.	Something has happened.
Did you meet any difficulties?	Is there anybody here?	Is there anything I don't know?
We have no problems.	Nobody wants to understand me.	There is nothing interesting in the article.
Every word of it is false.	Everybody wants to be well.	They did everything to help us.

☺ Які неозначені займенники (Indefinite Pronouns) можна зустріти в стверджувальних реченнях? Які займенники зустрічаються в питальних і заперечних реченнях? Які особливості використання займенника “no” в стверджувальних реченнях? Чи можете назвати їх похідні займенники?

1. They don't know any symptom of the disease. 2. We are waiting him every minute. 3. Ask any person you meet. 4. Any work would be better than no work. 5. Have you read any new books? 6. If he doesn't find any book on the subject, he won't be able to write this paper. 7. He cannot see any difference between these two statements. 8. Will you have any more water? 9. Is there anybody else who thinks so? 10. Everybody who is anybody will be there. 11. Is there anything you want? 12. If he is anything of a gentleman he will be thankful. 13. He will do anything to help you. 14. Anybody never saw him. 15. Nobody ever saw him. 16. He eats anything. 17. Not every man can do it. 18. There is every reason to believe that this is true. 19. I always put everything in its place. 20. Everything is good in its season. 21. To know everything is to know nothing. 22. Not everybody can be empathic. 23. I want to check something over. 24. He can't do it, nor can I, nor can you, nor can anybody. 25. Nothing new under the sun.

2. Перекладіть слова в дужках, потім прочитайте і перекладіть речення.

1. (Всі) understood well the significance of this problem. 2. (Ніхто) felt tiredness after a long walk. 3. Can you see (що-небудь) on the lateral surface of the right lower extremity? 4. Does the pain spread (куди-небудь) when you breathe in? 5. There is (нічого) new about the positive dynamics in the condition of this patient.

3. Поставте питання до наступних речень.

1. Somebody wanted to speak to the doctor about the condition of patient Sidorenko. 2. The boy has impaired something in his abdomen when he fell down. 3. Someone will have to describe the course of the this disease. 4. Everyone knows that phagocytes destroy microorganisms.

4. В наступних реченнях зверніть увагу на дієслово to be. Дайте відповіді на запитання.

My friend is a surgeon.	Мій друг – хірург.
The surgeon is performing an operation.	Хірург робить операцію.
The patient is operated on.	Пацієнта оперують.
The surgeon is in the clinic.	Хірург знаходиться в клініці.
The surgeon is to operate on the patients.	Хірург повинен оперувати хворих.

☺ В якому із англійських речень дієслово to be використано з : 1) іменником з прийменником і в якій синтаксичній функції; 2) іменником без прийменника і в якій синтаксичній функції; 3) дієприкметником теперішнього часу, і який час утворюється; 4) дієприкметником минулого часу, і який стан утворюється; 5) інфінітивом дієслова, і яке значення дієслово to be має в цьому випадку?

5. В наступних реченнях зверніть увагу на дієслово to have. Дайте відповіді на запитання.

She has blue eyes.	В неї блакитні очі.
The doctors have made the diagnosis.	Лікарі поставили діагноз.
We have to examine a new patient.	Ми повинні обстежити нового хворого.

☺ Яке значення має дієслово to have в поєднанні з 1) іменником; 2) дієприкметником минулого часу; 3) інфінітивом дієслова?

6. Перекладіть наступні речення, звертаючи увагу на дієслова to be, to have.

1. Microbiology encompasses numerous sub-disciplines including virology, mycology, parasitology, and bacteriology. 2. Microbiology is the study of microscopic organisms, either unicellular (single cells), multicellular (cell colony), or acellular (lacking cells). 3. The existence of microorganisms was hypothesized for many centuries before their actual discovery. 4. Microbes have been around longer than anything else on Earth, longer even than dinosaurs. 5. There are ten times more bacteria in the average human's digestive system than there are cells on the entire body. 6. Scientists point out that trying to eradicate all bacteria from your environment is unnecessary and possibly harmful. 7. We have a nice coexistence with a lot of germs. 8. According to Dr Charles Gerba, a microbiologist in Arizona, the bathroom is cleaner than the kitchen and you're safer making a sandwich on the top of the toilet bowl than in the kitchen. 9. The toilet handle in most bathrooms at work has 400 times more germs than the toilet seat. 10. Some dentists recommend that a toothbrush should be kept at least 2 metres away from a toilet to avoid air-borne particles resulting from the flush – what a large bathroom! 11. When you cough, sneeze or just breathe out, you spray tiny droplets into the air – this can spread colds and flu to other people. 12. Malaria could threaten Britain as a result of climate change, according to a Department of Health study published recently. By the way, Alexander the Great is thought by some to have died of malaria. Other well-known victims include Oliver Cromwell, Dante Alighieri, the evolutionary biologist Prof William Hamilton, the explorer David Livingstone and the poet Lord Byron.

STEP 2. VOCABULARY. TEXTS

WORD-FORMATION

Суфікс **-ous** утворює прикметник: glorious, famous, notorious.

Суфікс **-ly** утворює прислівник від прикметника: usually, quickly, weekly.

1. Read and translate.

a) numerous, omnivorous, enormous, dangerous.

b) badly, highly, happily, simply, rightly, finally, incredibly, possibly, extremely.

2. Read and translate the following sentences.

1. It is now generally accepted that effective treatment can reduce the morbidity and mortality of many diseases. 2. Occasionally, some patients may be

asymptomatic. 3. Patients frequently have a tender abdomen. 4. They can occasionally have a palpable abdominal mass. 5. Usually, this appearance results from the presence of necrotic debris and is very common. 6. The infection is rarely severe. 7. We defined a wound infection clinically. 8. One half of these wounds may eventually become infected. 9. Initially, the patients aged 45 to 57 years received a long-acting medicine, however, to achieve improvement, more preparations were added in 40%, 28% and 22% of the patients, respectively. 10. Epidemiologically, there is a clustering of several risk factors, including obesity, hypertension, and diabetes mellitus. 11. Consequently, the prevention of the disease should be a major treatment goal. 12. Importantly, the study provides an important information about the safety and efficacy of this kind of treatment. 13. According to the World Health Organization (WHO), cardiovascular diseases are the leading cause of deaths globally. More people die from these diseases than from anything else. Over 75 percent of deaths from cardiovascular disease occur in low and middle-income countries. They affect men and women equally.

3. YOU CAN'T DO WITHOUT THIS VOCABULARY.

To cause damage – завдавати шкоди	Fungus - грибок
Tobacco mosaic disease – тютюнова мозаїчна хвороба (у рослин)	Unleavened – прісний (про хліб)
Fine filter – тонкий фільтр	Flavor – аромат, приємний смак; присмак
Mould – цвіль; пліснява	Sufferer - хворий
Trial – випробування, проба	Sequence – послідовність; побудувати
Abandon - відмовлятися від; залишати	Gut - кишка
Common - загальний; звичайний	Inhospitable - негостинний
Bug - жук; мікроб	Boiling point - точка кипіння
Germ – бактерія, мікроб	Polluted - забруднений
Do - робити, чинити, виконувати; підходити	Core – серцевина; суть
Decay – гниття; руйнування; розпад	Waste – відходи (виробництва)
Ammonia – аміак, нашатир	Tip - звалище, смітник
Yeast - дріжджі	Fail – не вдаватися, зазнавати невдачі, бути неспроможним (щось зробити)

☺ Іноді дієслово *to fail* з наступним інфінітивом перекладається запереченням «не», а інфінітив перекладається в тому часі, в якому стоїть дієслово *to fail*. Наприклад: **The X-ray examination failed to reveal heart enlargement.** Рентгенологічне обстеження не виявило розширення серця.

4. Перекладіть наступні речення, звертаючи увагу на переклад дієслова **to fail**.

1. The researcher failed to draw any conclusion from his numerous experiments. 2. The X-ray examination failed to prove the consolidation in the lungs. 3. Ninety five students failed (at) the examination in Physiology. 4. Sometimes in the man with impaired health phagocytes fail to destroy the invading microorganisms. 5. He failed in Biochemistry as he had not paid enough attention to this subject.

5. Read Text A. Give examples of using modal verbs and their equivalents.

THE FOUNDER OF VIROLOGY

Dmitry Ivanovsky, a scientist-botanist and biologist, was born in 1864. He was one of two biologists usually credited with discovering viruses. In 1887 D. Ivanovsky was sent to Ukraine and Bessarabia to investigate a tobacco mosaic disease causing great damage to plantations located there at the time. He discovered that the incidence of the disease was caused by some microscopic agent, many times smaller bacteria. To prove this phenomenon, D. Ivanovsky had to make many experiments on various plants. He had to pass the juice of the diseased plant through a little filter which could catch the smallest bacteria. At that time everybody considered that bacteria were the smallest living organisms. Further researches led Ivanovsky to conclude that the causal agent was an exceedingly small parasitic microorganism that was invisible even under great magnification. He published his findings in an article, "On Two Diseases of Tobacco" (1892), and a dissertation, *Mosaic Disease in Tobacco* (1902).

Before D. Ivanovsky nobody had been able to prove the existence of viruses. In 1898, the Dutch microbiologist Martinus Beijerinck independently replicated Ivanovsky's experiments and became convinced that the filtered solution contained a new form of infectious agent, which he named virus. Beijerinck subsequently acknowledged Ivanovsky's priority of discovery.

Dmitry Ivanovsky was the first scientist who was able to establish the new branch of Microbiology – Virology.

6. Read Text B. Give examples of using a) adverbs; b) indefinite pronouns some, any, no, every and their derivatives.

ALEXANDER FLEMING: AN ACCIDENTAL DISCOVERY

When I woke up just after dawn on September 28, 1928, I certainly didn't plan to revolutionize all medicine by discovering the world's first antibiotic, or bacteria killer. But I suppose that was exactly what I did

- Alexander Fleming

Alexander Fleming (1881 – 1955) was an English physician, microbiologist and pharmacologist. He did research work at one of the hospitals in London and became interested in bacterial action and antibacterial drugs. During World War I, Fleming witnessed the death of many soldiers from sepsis resulting from infected wounds. By 1927, Fleming had been investigating the properties of staphylococci. He was already well-known from his earlier work, and had developed a reputation as a brilliant researcher, but his laboratory was often untidy. On 3 September 1928, Fleming returned to his laboratory having spent August on holiday with his family. Before leaving, he had stacked all his cultures of staphylococci on a bench in a

corner of his laboratory. On returning, Fleming noticed that one culture was contaminated with a fungus, and that the colonies of staphylococci immediately surrounding the fungus had been destroyed, whereas other staphylococci colonies farther away were normal, famously remarking "That's funny". Fleming grew the mould in a pure culture and found that it produced a substance that killed a number of disease-causing bacteria. He identified the mould as being from the *Penicillium* genus, and, after some months named the substance penicillin.

Fleming published his discovery in 1929, but little attention was paid to his article. Fleming continued his investigations, but found that cultivating penicillium was quite difficult, and it was even more difficult to isolate the antibiotic agent. In the 1930s, Fleming's trials occasionally showed more promise, and he continued, until 1940, to try to interest a chemist skilled enough to further refine usable penicillin. Fleming finally abandoned penicillin, and not long after he did, Howard Florey and Ernst Boris Chain from Oxford took up researching and mass-producing it. They started mass production after the bombing of Pearl Harbor.

The laboratory in which Fleming discovered and tested penicillin is preserved as the Alexander Fleming Laboratory Museum in St. Mary's Hospital, Paddington.

Fleming was knighted for his scientific achievement in 1944. He received the Nobel Prize for his great discovery in 1945. But he said: "*Everywhere I go people thank me for saving their lives. I do not know why they do it. I didn't do anything. Nature makes penicillin. I only found it.*"

7. Say whether the following statements are true or false.

1. Alexander Fleming was an English physician, microbiologist and pharmacologist. 2. He was not well-known from his earlier work, and had no a reputation as a brilliant researcher. 3. It is a well-known fact that he was very orderly parson, and his laboratory was very tidy. 4. On returning, Fleming noticed that one culture was contaminated with a fungus, and that the colonies of staphylococci immediately surrounding the fungus had been destroyed, whereas other staphylococci colonies farther away were normal, famously remarking "That's great". 5. Fleming published his discovery in 1937, and great attention was paid to his article. 6. Fleming planned to revolutionize all medicine by discovering the world's first antibiotic, or bacteria killer. 7. He received the Nobel Prize for his great discovery in 1944. Fleming was knighted for his scientific achievement in 1945.

8. Put the paragraphs of Text C in the correct order. Read and translate the text.

MICROBES, OR BUGS, OR GERMS

△ Microscopic colonies of microbes have enormous power. Without them there'd be no disease but, as Deborah Cohen points out, the planet would have to do with neither bread nor beer.

B Now the bad – the bugs that make us ill. The bacterium *Vibrio cholera* is responsible for the disease cholera, in which sufferers have aggressive diarrhea, nausea and vomiting. Without treatment it can be fatal. Recently the bacterium's genome has been sequenced. Researchers say this information will help them understand why the bug is so successful at surviving in the human gut and making us ill.

Another bug that continues to make a major impact on our health is *Mycobacterium tuberculosis*. TB is on the rise in some parts of the world. The treatment depends on taking a cocktail of antibiotics for six months. Scientists are searching for new drugs that can be taken for a shorter period.

C Finally, the ugly, or rather the strange. Scientists have found microorganisms that live in the most inhospitable areas of the earth. Some inhabit incredibly hot areas, above the boiling point of water, or under extreme pressure, kilometres under the ocean; others have been found alive and well in highly polluted places such as the water core of nuclear reactors or in waste tips. The scientists are busy to find a good job for these microorganisms, for example, in some industrial processes.

D First, the good. All plants need nitrogen to grow. Although there's vast amounts of it in the air, most plants can't use this gas form. It's the bacteria in the ground that turn nitrogen into ammonia that can be taken up by plants. Other good microbes give us our favourite food and drink. Without yeast, a single-celled fungus, we'd all be eating unleavened bread. As well as adding the carbon dioxide that makes the bread rise, yeasts add flavours and are key ingredients in the beers of the world. Here, too, they add flavour as well as the carbon dioxide that provides the bubbles and the alcohol.

E Microbes are everywhere. There are more of them on a person's hand than there are people on the entire planet. We couldn't digest food without them – nor can animals. Without microbes, plants couldn't grow, rubbish wouldn't decay and there would be a lot less oxygen to breathe. But bugs generally get a bad press – rightly so as they cause often deadly diseases – but there's also the good, as well as the bad and the ugly.

9. Read and translate the following text. Three sentences have been removed from the text. Choose from the sentences A-C the one which fits each gap (1-3).

Scientists point out that trying to eradicate all bacteria from your environment is unnecessary and possibly harmful. (1) Your gastrointestinal tract has germs most of which do no harm and some of which are beneficial. They help with digestion

and produce B-complex vitamins. Your skin also contains bacteria that colonize to protect you from pathogenic bugs.

The germs that cause us greatest risk are not bacteria but the viruses of the common cold. (2) If someone sneezes into their hand, which you then shake and then touch your eyes, nose or mouth, the virus may well set up house in your body. Viruses need moisture to survive. (3) But under dry conditions they die pretty quickly.

A	As long as moisture is present, viruses may be viable.
B	We have a nice coexistence with a lot of germs.
C	Like most viruses, a cold's route of transmission is most likely hand to mouth.

KEYS to exercise 8:	1 A, 2 E, 3 D, 4 B, 5 C
KEYS to exercise 9:	1 B, 2 C, 3 A



Adam
Had 'em.

— Anonymous



Microbiology is usually regarded as having no relevance to the feelings and aspirations of the man of flesh and bone. Yet, never in my professional life do I find myself far removed from the man of flesh and bone. It is not only because microbes are ubiquitous in our environment, and therefore must be studied for the sake of human welfare. More interesting, and far more important in the long run, is the fact that microbes exhibit profound resemblances to man. They resemble him in their physical makeup, in their properties, in their responses to various stimuli; they also display associations with other living things which have perplexing and illuminating analogies with human societies.

— René Dubos



It is usually not recognized that for every injurious or parasitic microbe there are dozens of beneficial ones. Without the latter, there would be no bread to eat nor wine to drink, no fertile soils and no potable waters, no clothing and no sanitation. One can visualize no form of higher life without the existence of the microbes. They are the universal scavengers. They keep in constant circulation the chemical elements which are so essential to the continuation of plant and animal life.

— Selman Waksman

CYCLE III . MEDICAL INSTITUTIONS

UNIT 5. POLYCLINICS

LESSON 11.

Граматика: Застосування Present замість Future. Післялоги.
Словотворення: Суфікс –less, ness.
Тексти: Text A. Polyclinics.
Text B. Types of Healthcare Institutions.

STEP 1. GRAMMAR

1.Зверніть увагу на переклад дієслова-присудка в підрядних реченнях.
Дайте відповідь на питання.

1) If you come to me we shall study Anatomy.	Якщо ви прийдете до мене, ми будемо займатися анатомією.
2) As soon as the patient is admitted to the hospital the doctor will examine him.	Як тільки хворий надійде в лікарню, лікар обстежує його.
3) Before the surgeon performs the operation he will have to observe the patient's condition for some days.	До того як хірург зробить операцію, він повинен буде спостерігати за станом хворого кілька днів.

☺ Визначте види підрядних речень. 2. Визначте час дієслова-присудка в англійських:
а) головних, б) підрядних реченнях. 3. В якому часі стоїть дієслово-присудок у відповідних російських а) підрядних, б) головних реченнях? 4. Який висновок ви можете зробити з зіставлення українських і англійських речень?

2. Перекладіть наступні речення.

1. If the red blood cell count decreases the patient will require additional treatment.
2. The development of cortical inhibition will begin after the experimental animal is given the proper drug. 3. The infant will be fed artificially until the mother's health is restored.

3. а) В англійській мові є ряд дієслів, які у поєднанні з післялогами (прислівниками, прийменниками), які йдуть безпосередньо слідом, набувають іншого значення, наприклад:

to bring - переносити, перевозити; to bring up – виховувати; to carry - нести, везти ; to carry on - вести, проводити; to carry out - виконувати.

б) Перекладіть зі словником речення, звертаючи увагу на переклад слова `look` і його сполучень з прийменниками:

1. We looked but saw nothing. 2. The nurse looked after the patients carefully.

3. I looked for the Anatomical Atlas but could not find it. 4. Don't worry! Look at me and calm down. 5. He looked through the dictionary.

Що змінює значення дієслова?

4. Випишіть і перекладіть значення наступних дієслів з післялогами:

1. To give in, to give up, to give away;
2. To get up, to get down, to get in, to get off.

STEP 2. VOCABULARY. TEXTS

WORD-FORMATION

Суфікс **-less** утворює прикметники від іменників, вказує на відсутність чогось або якоїсь якості: use користь – useless некорисний, child дитина – childless бездітний.

Суфікс **-ness** утворює іменник від прикметника.

1. Read and translate the following words and word combinations.

Sleepless, careless, helpless, homeless, lifeless, painless, hopeless, restless.

2. Translate the following words.

Breathless, breathlessness, sleepless, sleeplessness, care, careful, careless, carelessness, heartless, numbness, alertness, voiceless.

3. Read and memorize the following words.

Out-patient department	polyclinic	therapist	neurologist
otorhinolaryngologist	ophthalmologist	traumatologist	cardiologist
dermatologist	diagnosis	urine	urinalysis

4. YOU CAN'T DO WITHOUT THIS VOCABULARY:

<p>Polyclinic - поліклініка In-patient department – стаціонарне відділення Ring up (rang up, rung up) – дзвонити Call – окликати; звати, називати Call in – викликати (лікаря на дім) To see a doctor – відвідувати лікаря To consult a doctor – відвідувати лікаря Consulting hours -приймальні години</p>	<p>Consulting room – кабінет лікаря Reception - прийом, ресепшн Sick-leave – лікарняний лист To be on a sick-leave – бути на лікарняному; хворіти Temperature chart – температурна діаграма Fill in a patient's card – заповнювати карту хворого To make analyses – робити аналізи</p>
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5. 1. Read Text A. 2. Find sentences in which present time is used instead of future time. 3. Give equivalents:

Викликати лікаря, поставити правильний діагноз, призначити відповідне лікування, отримати лікарняний лист, зробити ін'єкцію, виміряти температуру.

POLYCLINICS

Ukraine has established a wide network of medical institutions to protect the health of our people. One of such medical institutions is the polyclinic.

If a person falls ill he will ring up his local polyclinic and call in a doctor. When his condition isn't very poor and he has no high temperature he will go to the local polyclinic and a physician will examine him there.

Many specialists including therapists, neurologists, surgeons cardiologists, dermatologists, urologists, ophthalmologists, otolarhingologists (ENT spesialists) and others work at the polyclinic. During the medical examination a physician usually asks the patient what he complains of and according to the complaints carries on the medical examination. The physician listens to the patient's heart and lungs and measures his blood pressure and if necessary asks the patient to take the temperature. The laboratory findings which include blood analysis, the analysis of urine (urinalysis) and other tests help the physician to make a correct diagnosis and administer a proper treatment.

In addition to their consulting hours at the polyclinic local physicians go out to the calls to examine those patients who are seriously ill and whose condition is bad. Such sick persons receive a sick-leave. They usually follow a bed regimen.

Any physician of the polyclinic knows his patients very well because he treats only a definite number of patients. At the local polyclinic every patient has a personal patient's card which is filled in by his physician. Everything about the patient—the diagnosis of the disease, the administrations made by the doctor, the course of the disease, the changes in the patient's condition after the treatment are written down in the card.

If it is necessary a nurse will come to the patient's house to give him the administered injections or carry out any of the doctor's administrations.

All Ukrainians receive medical treatment free of charge.

6. Read Text B. Five sentences have been removed from the text. Choose from the sentences (A-F) the one which fits each gap (1-5). There is one extra sentence which you don't need to use.

TYPES OF HEALTHCARE INSTITUTIONS

Healthcare institutions are centres that are staffed by a team of doctors, nurses, midwives and/or other healthcare practitioners for the promotion of good wellbeing and the prevention of illnesses and diseases. These workers undergo extensive education and training so they can provide high-quality medical care to those who need it. (1)_____. Here are some of them:

Hospitals

Hospitals are designated structures, buildings and locations for assessing, diagnosing and treating disorders. (2) _____. Specialists use a lot of specialized equipment such as X-rays, MRI machines, medical ventilators and CT scanners. Hospital services are offered both on inpatient and outpatient basis.

Nursing homes

Nursing homes are for patients who do not need hospital care yet cannot be cared for at their own homes. Nursing homes provide medical care as well as speech, occupational and physical therapy. (3) _____. Some specialized nursing homes offer a respite for clients with special needs such as learning disabilities, dementia and Alzheimer's.

Wellness centres and clinics

The goal of wellness centres and clinics is to provide optimum level of wellness to clients suffering from short-term issues such as alcohol addiction and binge eating or from debilitating disorders like cancer and Hansen's disease. (4) _____. With the help of a diverse pool of healthcare professionals including therapists and alternative practitioners and with an integrated and multi-discipline approach, wellness clinics and centres can help you overcome any health obstacle.

(5) _____. They also offer educational classes that cover health-related topics. If you happen to be on the lookout for a healthcare institution, identify first your needs so you can determine which among those mentioned above is appropriate for you.

On another note, if your disability is caused by the negligence or the carelessness of someone else, you have the right to assert a claim for compensation. Maurice Blackburn personal injury lawyer will be able to help you understand more about this matter.

- A. Some of them are set up like hospitals while other look more like homes.
- B. There are many types of health institutions, each of which provide access to different groups of people with different needs.
- C. A lot of therapists, neurologists, surgeons and others work there.
- D. They are also where surgeries, procedures and laboratory exams are done.
- E. Many of healthcare institutions implement dietary, fitness, and psychological interventions to treat disabilities.
- F. These speciality clinics offer customised services to improve quality of life.

7. Read the following texts which are both concerned with medical science.

For each question choose answer (A, B or C) which you think fits best according to the text. Entitle the texts.

Text 1.

Rodin's The Thinker may do it sitting down; Sir Winston Churchill did it in the bath smoking a cigar; scientific research now shows that lying down in bed or on a sofa is the best way to think.

Clinical tests have shown men and women can solve problems faster when lying down compared to when they are standing up or sitting. Scientists have discovered that noradrenalin, a natural hormone produced in the brain by stress, interferes with brain cells and reduces people's attention to detail and reasoning.

When people stand up, it triggers a reaction in the brain which produces more of the hormone. But lying down decreases the concentration of noradrenalin in the brain and helps us to think more clearly.

Tom Hodgkinson, editor of *The Idler* and author of the book *How To Be Idle*, said there was a long tradition of horizontal thinkers: "Most of the greatest thinkers of the last few hundred years have done most of their thinking in bed.

Descartes, the philosopher, was constitutionally incapable of getting out of bed in the morning. When you're lying down your mind is clearer of the flotsam of everyday life. There's more space in your mind with which to think."

Q: All medical scientists are:

- A inexhaustible inventors
- B horizontal thinkers
- C hopeless idlers

Text 2

Red, white, pink, purple – what is your favorite color? We are all sensitive to color. There are some colors we like a lot and some we don't like at all. Some colors soothe us, others excite us, some make us happy, and others make us sad.

Experts in colorgenics, the study of the language of color, believe that people are affected by color more than they realize because color is tied to all aspects of our lives. Although colorgenics may be a recent area of study, associating colors with emotions is not new. Colors have always been used to describe not only our feelings, but also our physical health. "Red with anger" describes anger; "in the pink" means to be in good health; "feeling blue" is a sad way to feel; and "green with envy" indicates a jealous attitude.

Some experts believe colors can be used to heal. White is said to be cleansing, and it can balance the body's entire system. Yellow stimulates the mind and creates a positive attitude, so it can help against depression. Green, which has a calming and restful effect, is supposed to be good for heart conditions.

Books are now available that teach people how to heal with color. These books provide long lists of ailments and the colors that can heal them.

Q: What color are you sensitive to?

- A red because it is a color of winners
- B pink because I like this color most of all
- C yellow because this color makes me relaxed.

KEYS to exercise 6: 1 B, 2 D, 3 A, 4 F, 5 E

LESSON 12.

Граматика: Часи групи Continuous Passive.

Тексти: Text A. A Case of Bronchitis.

Text B. Tracheitis.

Text C. How To Avoid a Cold?

STEP 1. GRAMMAR

1. Виконайте наступне завдання та дайте відповідь на питання:

1. Дайте формулу пасивного стану. 2. Яку формулу ви отримаєте, якщо поставите допоміжне дієслово to be із цієї формули в Continuous? 3. До якого стану та до якої групи часу ви віднесете цю формулу, якщо дієслово to be буде в Continuous? 4. Змініть дієслово to examine за цією формулою та вкажіть, що зміниться в ній за часом, займенниками і числом. 5. Як утворюються негативна і питальна форми?

2. Переведіть наступні речення, визначивши час присудка:

1. Now the total number of platelets in the blood of the patient is being counted by the laboratory worker. 2. The exact amount of salt was being determined during the experiment, which we were carrying on yesterday at 10 o'clock. 3. We can clearly observe that a favourable effect is being produced on the patient's condition by the administration of these drugs.

3. Ознайомтеся з наступною таблицею.

Continuous Passive		
<i>To be + being + Past Participle (3-я форма змістового дієслова)</i>		
Present Continuous Passive		
Стверджувальна	Питальна	Заперечна
The letter is being read now. — Листа читають зараз.	Is the letter being read now? — Листа читають зараз?	The letter isn't being read now. — Листа не читають зараз.
The pictures are being shown to us. — Нам показують картини.	Are the pictures being shown to us? — Нам показують картини?	The pictures aren't being shown to us. — Нам не показують картини.
Past Continuous Passive		
The letter was being read at that moment. — Листа читали у той час.	Was the letter being read at that moment? — Листа читали у той час?	The letter wasn't being read at that moment. — Листа не читали у той час.
The pictures were being shown to us at 5 p.m. — Нам показували картини о п'ятій годині.	Were the pictures being shown to us at 5 p.m.? — Нам показували картини о п'ятій годині?	The pictures weren't being shown to us at 5 p.m. — Нам не показували картини о п'ятій годині.
NB! Форми The Future Continuous Passive не існує.		

4. Перекладіть пари речень і визначте, чим відрізняються їхні присудки:

1. I am examining. I am being examined. 2. The nurse was giving intravenous injections when we came in. Intravenous injections were being given to the nurse as she herself was ill at that time. 3. Now neurologist Belenko is administering a new treatment. Now neurologist Belenko is being administered a new treatment.

5. Прочитайте і перекладіть речення. В яких реченнях присудок виражений Continuous Passive?

1. No changes are being observed in the patient's condition now. 2. The blood was dropping from the wound slowly. 3. The functions of the left lower extremity were being restored rapidly during the treatment of the patient at the rehabilitation centre. 4. At the end of October this female visited the clinic complaining of a bad pain in the heart.

STEP 2. VOCABULARY. TEXTS

1. Read and memorize the following words.

Bronchus	bronchial	bronchitis	catarrh	discomfort	abnormal
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2. Define which parts of speech are the words in bold.

1. The patient had a bad **ache** in his ear. 2. My head **aches** so badly that I cannot read. 3. The X-ray examination did not reveal any lung **trouble**. 4. The doctor wants to know what **troubles** the patient. 5. I do not **doubt** that the patient will feel well after the treatment. 6. There is no **doubt** that the pain will be controlled with a new preparation. 7. During the operation the **approach** to the diseased portion of the colon was difficult. 8. The surgeon **approached** the portion of intestine on which he had to operate.

3. Analyse the word-building elements of the following words and translate them.

A. 1.ache, headache, earache, stomache, toothache; 2. trouble, lung trouble, heart trouble, liver trouble; 3. a ward, a ward doctor, a ward nurse; 4. an immediate response, an immediate relief, immediate measures.

B.1.doubt, doubtful, undoubtful, undoubtfully; 2.approach, approaching, approachable, unapproachable; 3. definite, definitely, indefinite, indefinitely; 4. dry, to dry, dried, drying, dryish, dryness, dryly; 5. warm, to warm, warmed, warming, warmish, warmly, warmth; 6. moist, moisture, moisturize.

4. 1. Read Text A. 2. Make the plan. 3. Describe the main symptoms of bronchitis. 4) Find and translate the sentences with Continuous Passive.

A CASE OF BRONCHITIS

Patient Smerenko called in a physician from the local polyclinic. He could not go to the polyclinic himself because his temperature was about 38°C. In a few hours doctor Belenko, an experienced therapist, came to the call.

Doctor Belenko wanted to know the patient's complaints. When the patient was being questioned by the physician on his condition, he said that a short painful dry cough associated with rapid respiration had developed two days before. In addition to that the patient complained of the pain both in the throat and behind the breastbone.

While the patient was being examined the physician listened to his heart and lungs and then measured his blood pressure. Neither the blood pressure nor the heart sounds were abnormal. But both dry and moist rales were heard in the lungs. The respiratory rate was considerably increased and the patient breathed with difficulty. The physician also determined that the patient felt discomfort in the chest.

On the basis of all the findings the physician made the diagnosis of acute bronchitis in a mild form. She thought it was neither a catarrh nor a cold. The amount of the discharge from the bronchial mucous membrane was large. It accumulated in the bronchial tubes and made the patient cough. Passing through this fluid in the bronchial tubes the air which was breathed in and out produced moist and dry rales.

It was not necessary to admit the patient to the hospital, he was allowed to follow home treatment. The patient had to be on a sick-leave until his temperature became normal and all the symptoms were controlled. He was to follow a bed regimen and a light diet. He was also recommended to drink either warm milk or have warm applications to his chest. These procedures had to control the cough and impaired breathing.

The doctor administered the patient two tablets of tetracyclin to be taken orally and a cough mixture to be taken three times a day.

5. 1. Read Text B. 2. Try to understand the meaning of the words in bold type from the context. 3. Retell the text.

TRACHEITIS

Tracheitis [,treiki'aɪtɪs] is the disease in which the mucous membrane of the **trachea** [trə'kiə] is impaired. The disease usually develops in a weak organism, after a person has been in the cold environment for a long period of time, or after some infectious disease.

In such conditions the microorganisms such as **pneumococci, staphylococci and streptococci** which usually invade the upper respiratory tract multiply rapidly and produce the inflammation of the mucous membrane.

The main symptom of tracheitis is the cough, usually dry at first. But in a day or two it becomes productive. After the **attack** of cough the patient feels pain in the **substernal** area and in the throat. The general condition becomes worse. When the attacks of cough are particularly long, a bad headache may develop. In adults the temperature may not be high, but in children it may be as high as 39 °C.

The patient with tracheitis usually follows home treatment receiving a sick-leave for the period of his disease. The patient must be in a warm room wellaired. He may be administered **aspirin or codein** which gives some relief. He may also be recommended to have warm milk with soda several times a day.

6. Read the passages, translate them and answer the questions:

A. The patient had a dry cough. In a day or two the cough became productive. After the attacks of cough the patient felt pain in the substernal area and in the throat. His temperature was not very high. He followed home treatment and was administrated aspirin and codein. He was recommended to have warm milk with soda several times a day. *На що хворів пацієнт: бронхіт або трахеїт?*

B. The patient's temperature had been changing but persisting for two weeks. His breathing was rapid and he complained of breathlessness. There was cyanosis of the face. The chest pain was particularly sharp on deep breathing in. he had cough with purulent sputum. His erythrocyte sedimentation rate was accelerated. Dry rales were heard all over the right lung. *Який діагноз ви поставили би цьому пацієнту – бронхіт або пневмонія?*

7. 1. Read Text C. 2. Translate the underlined word-combinations and sentences. 3. Many people confuse the severer forms of cold with the flu. Make up a dialogue to compare these two conditions.

HOW TO AVOID A COLD?

“You’ll catch your death of cold” is a common way for English speaking people to express concern for someone who is cold or wet. However, no one nowadays seriously believes that someone with a common cold is really likely to die from it. It was not always so.

In the early part of the 20th century, colds commonly led to complications that frequently ended in death. In those days of poorer public health, people really did fear the onset of a cold. Medical advice warned you to stop your feet and face (and especially your nose) from getting chilled or wet. The sensible thing was to “wrap up warm” and “wear a hat”.

Interestingly, up until the 1950th or so, doctors agreed with folklore that putting your feet in a bowl of warm water was the best possible cure – preferably while holding your head over a pan of steaming water infused with menthol or lavender. Recent research now shows that this is really good health advice.

While no longer life threatening, the common cold is one of the most prevalent ailments in the world. Most adults suffer from between two to four bouts of cold a year. Children are even more prone to catching cold. Indeed, colds often start in schools where children are indoors in close contact with each other for much of the day.

Colds range from the very mild to the quite severe. Many people confuse the severer forms of cold with the flu – short for influenza – which is still a very serious illness indeed. Flu viruses spread through populations in seasonal epidemics.

Really bad outbreaks of flu can affect millions of people. Called pandemics, these outbreaks can take place on a global scale. At the end of the First World War the Spanish influenza spread around the world and killed more somewhere between 20-40 million people, more than died in the war itself.

Despite much research over decades, there is no panacea or general cure-all for the common cold. Such a cure seems unlikely to come about in the near future. So, if you cannot easily cure a cold, the best thing is to avoid one.

COLD SYMPTOMS	FLU SYMPTOMS
<ul style="list-style-type: none"> • Little fever, or no fever at all • Occasional headaches, often mild in form • Runny nose, stuffiness, blocked breathing • Spluttering and sneezing • Irritating cough • Usually fairly mild aches and pains • General fatigue for two or three days • Sore throat • Energy level mildly lower 	<ul style="list-style-type: none"> • High fever • Constant, intense headache • Clear nose • Little or no sneezing • Constant cough, often very severe • Typically severe and intense aches and pains • Heavy fatigue over several weeks • Occasionally a sore throat • Complete exhaustion

8. If the best thing is to avoid a cold, discuss the key tips for doing so.

1. Avoid getting cold in general and in your feet and face in particular.
2. Avoid contact with people who have a cold.
3. Always wash your hands with soap when you come into contact with someone with a cold.
4. Avoid crowded, heavily air conditioned environments.
5. Drink at least two litres of water a day.
6. Rest well.

UNIT 6. HOSPITALS

LESSON 13.

Граматика: Forms of Participles.

Словотворення: Префікси intra-, over-, re- .

Тексти: Text A. Work of an In-Patient Department.

Text B. A Morning Ward Round In General Clinic

STEP 1. GRAMMAR

1. Перекладіть англійською:

Лікар, обстежуючий хворих.

Пацієнт, обстежений лікарем.

© 1. Визначте, яка форма дієприкметника : Present Participle (Participle I) або Past Participle (Participle II) використовується при перекладі? 2. Як утворюються дієприкметники в англійській мові? 3. Які функції виконують дієприкметники в реченні?

Дієприкметник в англійській мові – неособова форма англійського дієслова, що має властивості дієслова, прислівника та прикметника. Форми дієприкметника в англійській мові

2. Перекладіть речення. Визначте форми дієприкметників та їх функцію у реченні.

1. Having investigated the patient's past history the physician drew the conclusion that the patient was sensitive to antibiotics. 2. Having been treated for a prolonged period of time the patient began to feel better. 3. Being asked some questions about the attack of the cardiac pain the patient stated that it was particularly acute on physical exertion. 4. The man examining a patient is our ophthalmologist. 5. Examining the patient the cardiologist listened to his heart. 6. The neurologist was standing near the patient examining him attentively. 7. Having prevented the spread of inflammation the surgeon saved the life of the child.

3. Визначте частину мови і синтаксичну функцію виділених слів.

1. Any drug **causing** a strong reaction must be taken only if the doctor has administered it. 2. **Hospitalizing** a patient, the doctor on duty examines him in the reception ward. 3. Always listen to the patients, they might be **telling** you the diagnosis. 4. The therapist was **measuring** blood pressure when the professor entered the ward. 5. Hemoglobin **forming** on an average about 36% of cell's mass is the most important part of the red cell. 6. **Consulting** a patient, the doctor takes his pulse, looks at his tongue, listens to his heart and lungs and checks his temperature and blood pressure. 7. When patients speak about their problem they often refer to a part of their body: "I am **having** a problem with my back". 8. Human diseases can be well observed when **investigating** monkeys.

STEP 2. VOCABULARY. TEXTS

1. WORD-FORMATION

Префікс **intra-** означає всередині: cellular клітинний – intracellular внутрішньоклітинний.

Префікс **over-** надає слову значення понад, надмірно: dosage дозування – overdosage передозування.

Префікс **re-** означає повторну дію: reread, remake, recycle, rework.

2. Read and translate the following words.

a) Intracranial, intramuscular, intravenous, intracardiac, intrapleural, intrathoracic, intratracheal, intraspinal

b) Overweight, overgrowth, overestimate, overgrow, overwork, overeating, overstrain, overhead, overjoy.

c) To try to reinvent the wheel, to retrace the history of the case, to renew youth.

3. YOU CAN'T DO WITHOUT THIS VOCABULARY:

Hospital - лікарня	Cause - спричиняти
Department – відділення в лікарні	Death - смерть
in-patient department- стаціонар	Relieve -полегшувати
out-patient department - поліклініка	Prevent – запобігати
Reception ward – приймальне відділення	Recovery видужання
	Attitude - позиція, ставлення

4. 1. Read and translate Text A. 2. Have you ever been in the hospital? 3. Can you give any additional information about the work of an in-patient department?

WORK OF AN IN-PATIENT DEPARTMENT

When patients are admitted to the hospital first of all they are received by a nurse on duty at the reception ward.

Those patients who are to be hospitalized have already received the direction from the polyclinic. The nurse on duty fills in patients' case histories in which she writes down their names, age, place of work, occupation, address and the initial diagnosis made by a doctor at the polyclinic.

Then a doctor on duty examines the hospitalized patients and gives his instructions what department and wards the patients are to be admitted to.

The morning routine starts early in the hospital. Because doctors need a patient's tests to decide what to do during the day, tests are often taken very early in the morning. In addition, a patient's vital signs (blood pressure, temperature, oxygen saturation, heart rate and weight) are also taken early in the morning by the nurse or nurse assistant.

The doctors check on patients in the morning to see how they are doing. Doctors call this "rounds". For example: "Well, let me feel your pulse, check the

respiration and take your temperature... The pulse is accelerated. You have a fever. Now relax, please. I'll put the blood pressure cuff around your arm and take your blood pressure... It's 150 over 90... It's a little high for your age. Now I want to check your reflexes..."

Many doctors round with the whole healthcare team – the interns, the nurse, etc. During rounds, doctors often decide on additional tests. The patient will go to the tests at various points during the day. In the late morning and into the afternoon, new members of the team may come by to see you. These new members have been asked by your doctors to give them advice about specific problems. In the afternoon, some doctors will round again on their patients. At night, there are fewer doctors in the hospital taking care of patients. The doctors who leave will tell the doctors who are staying about you.

Nighttime can be a very difficult time for patients. Visitors have gone home. There are fewer people in the hospital. Many patients cannot sleep, or are awoken at night for tests, medicines or vital signs. Often, the lights are on, even if it is nighttime. Patients can become confused about whether or not it is nighttime. Often, because there are fewer people around and less distractions, patients have more pain at night.

Being sick and in the hospital is really hard for most patients and for their families. But hospital personnel consists of many experienced doctors and skilled nurses whose task is to help people to become healthy and enjoy quality of life.

All the doctors always treat the patients with great attention and care. There is no doubt that such a hearty attitude of the doctors to the patients helps much in their recovery.

5. Look through the text and find sentences which describe:

1. The morning routine; 2. nighttime; 3. attention and care of every medical worker.

6. a) Use the active vocabulary of the lesson instead of the following:

1) To advise and order the patient some medicine; 2) to produce; 3) to put cups; 4) a definite amount of the drug; 5) to stop the spread of inflammation; 6) a toxic medicine; 7) to make the pain less; 8) to be allowed and used.

b) Choose the sentences corresponding to Text A:

1. a) Those patients who are to be hospitalized have already received the direction from the polyclinic; b) Those patients who are to be hospitalized have already received the direction from his teacher. 2. a) The morning routine starts late in the hospital; b) The morning routine starts early in the hospital. 3. a) Well, let me feel your pulse, check the respiration and take your temperature; b) Well, let me feel your temperature, check the headache and take your blood. 4. a) The patient will go to the tests at various points during the day; b) The patient will go to the tests at various points during the night. 5. a) Patients have to suffer from pain at night; b) Patients have more pain at night.

c) Read the passages and answer the questions:

1. Patient S. was treated at the hospital. His temperature was taken every morning. He was given the prescribed medicine and the intramuscular injection of vitamin B. *Who carried out the administrations?*

2. My sister has a high temperature. Her blood analysis shows a considerable increase of the white blood cell count. Her first and second heart sounds are greatly decreased. Her electrocardiogram shows abnormal findings. *Where must she be treated?*

7. Read and translate the information about General Clinic and Morning Ward Round in it.

A MORNING ROUND IN GENERAL CLINIC

Professor, Dr. Rails, M.D.: Let's start Rounds.

Chief (Head of the clinic) *(to the attending doctor)*: Lead the way, please.

Case 1.

Attending doctor *(at the bedside of a 8-year-old girl)*: This is her first admission.

CC (Chief Complaint): joint pain.

-When did she feel her joints aching?

- A month prior to admission she caught a bad cold. She was treated under the care of a family physician. The girl got through her illness all right and did fairly well for some time. A week ago she became feverish and began complaining of pain in her knees and joints. As the fever persisted, her mother brought her here. She was admitted to the clinic in the morning.

Professor *(to the girl)*: Well, how are things going, dear girl?

-My knees, legs, and arms are badly aching, Doctor.

-Don't cry, you'll do all right with the treatment in no time and your mother will take you home... Now sit up and let me see your naughty knees and arms...

Don't shed tears for pain, we'll stop in soon. There's a good girl.

After the Examination

Professor: There is oedema [i:'di:mə] of both and elbows with redness and increased local temperature. Heart tones are slightly distant but with no rub. There is a moderate tachycardia. I'm interested in her EKG.

-The EKG was reported as the first degree auriculoventricular block.

Chief of the clinic: What's your working diagnosis?

Attending doctor: Well, she has acute rheumatic fever with failure of the heart.

Professor: Right you are. What are your recommendations?

Attending doctor: Complete bed rest, salicylates and penicillin.

Chief of the clinic: Fill up your prescription blanc. I'll sign it, Doctor Fellows.

Case 2.

-Well, how are you, Mrs. Brag?

-Much better, Doctor, but I have still some shortness of breath, especially at night.

-An emotional upset again, eh? Bad news from your husband perhaps?

-Not exactly so, but I've a cause to be worried.

_I see you easily give way to anxiety. Don't let your mind dwell on troubles. Shake them off, and you'll feel much better I'm sure.

Professor: Your attending doctor is quite right. I've seen his prescription blanc. Your treatment is very effective and you will soon be on the mend.

LESSON 14.

Граматика: Герундій. Його форма та функції у реченні

Тексти: Text A. Case History.

Text B. The Importance of Case Reports.

Text C. Types of Therapy.

Text D. Hypnotherapy.

STEP 1. GRAMMAR

1. Прочитайте речення по колонках. Дайте відповіді на запитання:

a) –	a) Reading is useful.
б) –	б) I like his rapidly reading.
в) –	в) His favourite occupation is reading.
г) The reading man is my friend.	г) I like your idea of reading this book.
2. The man reading a book is my friend.	
д) Reading a book I did not hear when she came in.	д) After reading I began to write a letter.
е) He stood nearby reading a book.	е) We cannot gain knowledge without reading.

☺ Чи знайома вам форма на -ing в реченнях г, д, е лівої колонки, як вона називається і як перекладається на російську мову? 2 Якими членами речення є ці ing-форми в реченнях г, д, е лівої колонки? 3 Чи знайомі вам ing-форми у всіх реченнях правої колонки, якими частинами мови їх можна перекласти? 4. Чи є подібна безособова форма в українській мові? 5. Визначте синтаксичні функції герундія в усіх реченнях правої колонки. 6. Порівняйте праву і ліву колонки. Якими синтаксичними функціями відрізняється герундій від дієприкметника? 7. Які загальні синтаксичні функції виконують герундій і дієприкметник? 8. Яка формальна ознака відрізняє герундій від дієприкметника в цих загальних синтаксичних функціях? 9. Як перекладається герундій на українську мову? 10. Чим визначається герундій?

2. Перекладіть наступні речення. Визначте, в яких з речень вжито герундій.

1. The scientist continued investigating the properties of blood gases. 2. Your rapid recovery depends on properly following the administered treatment. 3. He works on determining the increase of white blood cells in this disease. 4. In making observations particular care to obtain exact findings is necessary. 5. The microorganisms invading the human body are able to develop an infection. 6. The process of growth is due to the increasing number of cells. 7. The patient had to give up going in for sports because of the disease of the joints. 8. It is no use extending our investigations as the nature of this phenomenon has become clear.

3. Виберіть одну із запропонованих форм герундія для наступних речень.

1. The results of the treatment of the patient depend on his ... in time. (having been operated on; being operated on; having operated on; operating)
 2. I want my electrocardiogram ... by 3 o'clock (being taken; having been taken; taking; having taken).

4. Прочитайте наступні речення. Дайте відповідь на запитання.

1. Treating patients with lobar pneumonia is necessary at the in-patient department. 2. He wants being treated at the in-patient department. 3. The physician remembers having treated this patient. 4. I remember having been treated for pneumonia at this hospital.

☺ 1. Визначте синтаксичні функції ing-форм і назвіть ці форми. 2. Від яких інфінітивів утворений герундій в кожному реченні? 3. Назвіть форму герундія в кожному реченні, пам'ятаючи про те, від якого інфінітива він утворений. 4. Перекладіть ці речення. 5. Яку дію показує герундій форми Indefinite в 1-му і в 2-му реченнях по відношенню до дії, вираженої присудком? 6. Яку дію показує герундій форми Perfect в 3-му і 4-му реченнях по відношенню до дії, вираженої присудком? 7. Як перекладається герундій у 2-4-му реченнях?

STEP 2. VOCABULARY. TEXTS

1. Read and translate the following words.

Information, care, abstract, observation, evidence, detection, scientific, respective, essential, personal, role, argue, novelty, ladder, develop, view, shape, identify, intervention, lack, rare, rarity, publication, knowledge, challenge, strange, report, easy, together, remember, link, add, rigour, anecdotal, react, appeal, curiosity.

2. a) Which of the following nouns and adjectives go together.

Profession	medicine	impairment	dose	trial
information	patient	practice	observation	evidence
knowledge	experience	impairment	information	case

ancient, emotional, unique, essential, scientific, interesting, medical, personal, emotional, clinical, exact, mental, complete

b) Which of the following verbs and nouns go together.

To include	To perform	To know	To write
To have	To describe	To view	To provide

case-history, insights, information, trials, operation, complaints, cases, information, pathology, health and diseases.

3. Read and translate Text A. Retell the text.

CASE HISTORY

As soon as the patient is admitted to the in-patient department the ward doctor fills in the patient's case history. It must include the information about the patient's parents – if they are living or not. If they died, the doctor must know at what causes they died. The doctor must know if any of the family has ever been ill with tuberculosis or has had any mental or emotional impairments. This information composes the family history.

The patient's medical history must include the information about the diseases which the patient had both being a child and an adult, about the operations which were performed, about any traumas he had. The patient's blood group and the obtained information written down in the case history. These findings compose the past history.

The attending doctor must know what the patient's complaints and symptoms are. He must know how long and how often the patient has had these complaints.

The information on the physical examination of the patient on his admission to the hospital, the results of all the laboratory test and X-ray examination, the description of the course of the disease with any changes in the symptoms and the condition of the patient, the administered medicines in their exact doses and the produces effect of the treatment – all these findings which compose the history of the present illness must always be written down in the case history.

The case history must always be written very accurately and consist of exact and complete information.

4. 1. Read and translate Text B. 2. Find the topical sentences of each passage of Text B and make a short summary of the text using the topical sentences.

THE IMPORTANCE OF CASE REPORTS

A. Case reports are a time-honored tradition in the medical profession. From Hippocrates, and even further back since the papyrus records of ancient Egyptian medicine to modern day, physicians of all specialties have described interesting cases involving all specialties. Published case reports provide essential information for optimal patient care because they can describe important scientific observations

that are missed or undetected in clinical trials, and provide individual clinical insights thus expanding medical knowledge base.

B. Any case reports has indeed become a standard lexicon of the medical literature. The act of recording, discussion with colleagues, and publishing clinical observations with patients remains essential to the art of medicine and patient care. Early case reports were little more than personal communications between colleagues about unique and interesting patients seen in their respective medical practices.

C. Given the unpredictable and challenging nature of medicine, many medical students will have come across a patient who has not been a textbook case. The patient may have presented in an unusual way, had a strange new pathology, or reacted to a medical intervention in a manner that has not been seen before. The publication of these novelties and curiosities as case reports has for many centuries been a fundamental way of sharing knowledge and conveying medical experience, and throughout history there have been famous case studies that have helped shape the way we view health and disease.

D. There are those who argue, however, that case reports are increasingly irrelevant in current medical practice and education. Their obscurity and rarity appeal only to the specialized few, and they add little to everyday medical practice. Their anecdotal nature lacks the scientific rigour of large, well conducted studies, and they have therefore fallen down the hierarchical ladder of medical evidence.

E. Case reports still have a role to play in furthering medical knowledge and education. Their ability to flag up novelty means that they are still used to identify emerging pathologies. Case reports also hold valuable educational worth as brief clinical caveats. Many people find abstract medical knowledge easier to remember when linked to a patient. Different areas of medical education such as physiology, pathology, pharmacology, and anatomy are brought together in case reports and help students and doctors to develop a more holistic approach to patients.

5. Read and translate the following example of a case report.

a) It's Mr. Alan Jameson, a 53-year-old carpenter. He is 1.78 meters in height and 68 kilos in weight. He's been an infrequent attender in the past but he came to the hospital complaining of pain in his right leg and in his back. It started about six weeks ago and it's become gradually more severe over the past couple of weeks. The pain wasn't localized. It's been getting to the stage where the pain is waking him up at night, it's been so severe, and he's noticed some tingling in his right foot. He's having difficulty in carrying on with his work. He's also lost three kilos and has become quite depressed. In the past he has suffered from intermittent pain in back. Paracetamol gave some relief but didn't solve the problem completely. He didn't have any problems with health in the past. As the pain he has numbness in his toes on the right foot. An MRI scan of the lumbar spine confirmed that the patient had a prolapsed interverbal disc. The patient was prescribed a maximum of

“twenty-four hours” bed rest and with strong painkillers (Dihydrocodeine 30 mg.), he was given some physio to ease his leg and back.

b) A blank of the Case History

SURNAME Jameson	First name Alan	OCCUPATION Carpenter
AGE 53	SEX M	MARTIAL STATUS M
PRESENT COMPLAIN		
Acute backache referred down R sciatic nerve distribution. Began 6/52 ago and became more severe over past 2/52. Affecting work and waking him at night. Also 6/0 tingling in R foot. Wt loss 3 kg. Depressed		
O/E		
General condition	Fit, well-muscled	
ENT	NAD	
RS	NAD	
CVS	P	BP
GIS	NAD	
GUS	NAD	
CNS	Loss of lumbal lordosis, spasm of R erector spinae. Straight leg raising R restricted to 45 °. Reflexes present equal. Neural-depressed Rancle jerc.	
IMMEDIATE PAST HISTORY		
Paracetamol helped a little with previous intermitted basic pain.		
POINTS OF NOTE		
Carpenter- active work 1.78m, 68kg –tall, slightly-built		
DIAGNOSIS		
Prolapsed interverbral disc		
MANAGEMENT		
Dihydrocodeine 30mg 2 q.d.s. p.c.		Bed rest, physic

6. 1. Read and translate Text C. 2. About what therapy there is a speech in every passage? 3. What’s your opinion of every type of therapy? 4. What type of therapy do you like most of all and why?

TYPES OF THERAPY

A. Did you know that poetry can solve all our fatigues of daily life? According to some British doctors, poetry plays a distinct role not only in eliminating daily stress but also in the treatment of patients. In one of the articles in the British Medical Journal, these “poet-doctors” encourage people to compose verses to cure anxiety and nervousness. They say that they try to communicate with patients who are introverts through poetic verses which actually have a calming effect on them. In fact, patients with this kind of a therapy feel deeply relieved and now attend poetic composition courses to avoid possible nervous breakdowns. The story

doesn't end here. Former drug addicts who are on their way to recovery even they find comfort in poetry. Dedicating most of their time to reading poetry, they have left behind their nightmarish past.

Therefore, be grateful to the poetry you study at school taking it as a sweet medicine instead of a bitter pill to swallow.

B. We know that music affects us emotionally. But not all music moves us equally. A piece of music that inspires one person can cause irritation and annoyance in another. Music that we love listening to makes us feel relaxed and impacts on us through its harmony, melody, rhythm and beat.

Why is it that music influences us so much?

Researchers are only just beginning to uncover the secrets of this very powerful medium. A great deal of study now focuses on how music actually affects our physiology and mental health. Today there is a growing field of health care known as music therapy. Those who practise music therapy use music to help cancer patients, children with attention deficit disorder, and many other ailments. Many hospitals now use music to help patients to cope with pain, or to relieve depression, or to promote movement.

Certain types of music help create a more positive state of mind in us. This can stimulate creativity as well as feelings of wellbeing and optimism. Numerous studies prove that certain music aid memory while studying. At meal times listening to calm music helps your body digest food better. Listening to music on the way home from work or university can help create a mental break that is good for your work/life balance. And finally, listening to tranquil music as we drift off to sleep can help you fall into a deeper sleep that helps your mind to relax and your body to rejuvenate more deeply as you sleep.

As all the recent studies seem to show, music can also be a great help and healer. Music may not be appropriate to every moment of your day, but you may be surprised by how much difference a little of the right music at the right time can make to you.

C. If you have ever snuggled up to her on a cold, lonely night, or cried into her fur about a horrible Monday you know there is nothing more soothing than your furry friend's big, round eyes, and lolling pink tongue. In addition to providing you with timely, welcome comfort, your pet can also provide emotional and physical benefits to others in need. Animal assisted therapy and animal assisted activities bring joy as well as healing to people who need a little extra love.

Animal assisted therapy and animal assisted activities are the official terms for programs in which animals are used to help people through healing processes.

Animal assisted therapy is goal-oriented, while animal assisted activities involve using animals for recreation, education and other life improvement activities.

7. 1. Read and translate Text D. 2. Do you know how hypnosis works? 3. Do you have an ability of self-hypnosis? 4. Would you like actually remember back across lifetimes to events that happened before you were born?

HYPNOTHERAPY

First, you are probably wondering what the difference between hypnosis and hypnotherapy is. The word “hypnosis” is derived from the Greek hypnos meaning “sleep”. But, actually, you are in a trancelike state of restful alertness when hypnotized – and not asleep at all. When under hypnosis, you are also extremely open and receptive to suggestion. Hypnotherapy is the use of hypnosis for self-improvement and/or healing. All hypnotherapy employs hypnosis. But not all hypnosis is hypnotherapy.

The hypnotic state is not nearly as mysterious as it sounds. People go into trancelike states all the time. For example, musicians and artists can become so engrossed in their work that they lose track of time. Readers often become totally immersed in the pages of a good novel. Drivers can find they have no memory of how they travelled to work or home because their mind has been taken up with thoughts about the day. Children can pass hours of the day happily playing.

All of these very normal day-to-day experiences are similar to the hypnotic state.

Psychologists and hypnotherapists separate the trancelike state into three distinct stages. The first stage is a superficial trance. Although your eyes may be closed, you are very much aware of your surroundings. During this stage you can easily accept suggestions such as giving up smoking or eating or drinking less.

The second stage is called the alpha state. It is significantly deeper than the initial stage as you enter the alpha state, your heart rate and respiration slow and your blood pressure drops. Under these conditions, the hypnotherapist can change the way you respond to certain situations. This is where a specialist can lead you to find true relief from pain, allergies and even problems caused by your immune system. It is here that hypnosis can truly help you to stop smoking or cure disorders with eating or drinking.

The third stage of hypnosis is deeper still. Highly trained psychologists try to use this stage to direct a person back in time to remember events from the past with great clarity. Termed “age regression”, this technique can be helpful for revealing painful memories that a person’s conscious mind has done its best to bury and forget forever. However, there are those in the medical profession who are very skeptical about the validity of some of the memories recovered through this kind of hypnotherapy.

Because hypnosis deals with the subconscious, many people who do not understand the process worry that the hypnotherapist somehow “takes control” of the hypnotized person’s brain and will.

People who have been hypnotized usually say it is a much more subtle process than they expected. A hypnotherapist, for instance, cannot do anything that you do not want. You will not quack like a duck when asked to do so.

Hypnotized, you will probably actually feel more alert than you ordinarily do. At the same time, however, you will be in a state of profound relaxation. As we get caught up in the pressure of modern life, stepping back into ourselves to find the connections that make us whole does not sound so bad or strange an idea after all.

8. Read and translate the following case histories. Pay attention to questions used by doctors to ask the patients about their condition.

CASE 1.

Identification (of a patient):

Ann Brag; 24-year-old female; 32, Forest Street, Missouri. The first admission.

CC (chief complaint): Difficulty in breathing.

- What brings you here, Mrs. Brag?
- I have episodes of wheezing. Difficulty in breathing, which comes on at night. keeps me awake. Those episodes of shortness of breath become more and more frequent.

HPI (History of Present Illness):

- When did you feel the onset of the disease? How long has it been troubling you?
- I was taken ill when I was 5 year old. My parents sought advise from our family doctor about my episodes of wheezing. He advised a change of air and so they took me to the sea shore.
- How did you feel there?
- Just fine. I had no trouble while staying there for more than 15 years. But when we moved inland my breathing ailment began again.
- What treatment did your physician place you on?
- On inhalation, but my wheezing progressed by and by and I was admitted to the clinic.

PH (Past History):

- What childhood disease had you?
- Measles, mumps and chicken –pox.
- No operation?
- No, Doctor.
- Couldn't you tell me more details about your present illness?
- Why, of course . . . First I had episodes of wheezing when I was 5. My parents told me that I had shortness of breath after successive attacks of children diseases.

FH (Family History):

- Are you married?
- Yes.
- Have you children?
- No.

- Are your parents alive?
- Yes, they seem to be healthy.
- And your grandparents?
- No, they both died of heart trouble when they were elderly.
- And your uncles and aunts?
- They are still enjoying good health.
- So you have never heard your people talk about asthma in your family?
- Never.

CASE 2.

Identification (of a patient):

Ann Brag, 26-year-old female; 32, Forest street, Missouri. The second admission.

CC (Chief Complaint): Shortness of breath. Bronchial asthma.

- What brings you, Mrs. Brag, to our clinic this time?
- I have episodes of wheezing again, Doctor Brill. Difficulty of breathing becomes more severe every day.

HPI (History of Present Illness):

- When did you feel again the onset of attacks?
- About a month today. I felt quite myself before I caught cold.
- Generally for the most part I don't feel well in cold and damp, rainy weather.
- It has an ill effect on me. My disease becomes worse, more severe.
- Aren't you suffering from headaches as before?
- I'm, doctor Brill, but a tablet of aspirin has soothing effect on me . . . You know, Doctor, what I badly suffer from, what most annoys, irritates me – it's tobacco smoke.
- Goodness gracious!.. You smoke?!
- No, not I. It's my husband! He smokes a lot. He is a heavy smoker. . .
- You need fresh and pure air, Mrs. Brag. Doesn't he know that?
- Certainly he does, but he is too careless.
- Perhaps he doesn't know your diagnosis? Bronchial asthma is a serious disease.
- I advise you a change of air, Mrs. Brag. This is the most I can do. Go to the California coast again – but this time more there for good, if you don't want to suffer from your disease any more.

CASE 3.

Identification (of a patient):

Andrew Smith, 68-year-old mal; 10, Lime Street, Chicago. The First admission.

CC (Chief Complaint): Pain in the slotnach.

- What ails you?
- Pain in my belly, Doc. I didn't get a wink of sleep last night. Now I was shivering with cold now I was awfully hot.

HPI (History of Present Illness):

- How long have you had such a pain?
- A couple of weeks.
- Did you have a feeling of sickness?
- Yes, sir. I threw up on two or three occasions.
- Have you had a burning sensation in the lower part of your chest, a heartburn, I mean?
- Yes, Doc, especially after a rich food.
- Any trouble with your bowels?
- Yes, sir. I had a black bowel movement and a dark urine too. I thought it was something amiss with my health and I wanted to find out what was the matter with me. That`s why I have come here.

PH (Past History):

- What kind of sickness did you have in the past?
- I had measles, whooping-cough and scarlet fever when I was a kid. I had pneumonia last year.
- Have you cver been operated of?
- Five years ago I had urethral resection and received two pints of blood.
- No bad after-effects of the operation
- No.

FH (Family history):

- Are you married?
- Yes, sir
- Have you any children?
- A boy and a girl
- Are they all right?
- They seem to be in good heath
- And your father and mother? Are they alive?
- No, my father diad of diabetes, and mother of old age. She was very strong and healthy.
- Do you have brothers and sisters?
- We are four in the family: two brothers and two sisters: my brother is living and well, and both sisters are in good health too.
- I see ... Well, he down on the examining table, I`ll carry out a local examination.



The art of medicine consists in amusing the patient while nature cures the disease.

- Voltaire

LESSON 15.

Грамматика: Gerund. Participle.

Тексти: Text A. Examination of the Patient.

Text B. Modern Methods of Diagnostics.

Text C. Pediatric History And Medical Examination.

Text D. Physicians are Doing Physical Examination.

STEP 1. GRAMMAR

1. Від наданих інфінітивів утворіть Participle. Використайте їх в реченні.

To prevent, to buy, to smoke, to irritate, to suffer, to trouble, to love, to restore.

2. Від наданих інфінітивів утворіть Gerund. Використайте їх в реченні.

To divide, to know, to feel, to tell, to include, to increase, to prevent, to indicate.

3. Порівняйте герундій і дієприкметник теперішнього часу.

Герундію може передувати прийменник: I am fond of traveling.	Дієприкметнику прийменник не передує: A doctor sat speaking to a patient.
Герундію може передувати присвійний відмінок іменника або займенника: I can't approve Victor's (his) leaving the work at the hospital.	Дієприкметнику присвійний відмінок іменника або займенника не передує.
Герундій може вживатися у реченні у функції підмета, додатка, предикатива: Gardening is her hobby.	Дієприкметник не вживається у реченні у функції підмета, додатка, предикатива.
Герундій вживається у функції означення чи обставини (герундію завжди передує прийменник): My aim is speaking English like a native.	Дієприкметник вживається у функції означення чи обставини: Examining a patient, the doctor was very attentive.
Герундій вживається у функції означення чи обставини (герундію завжди передує прийменник): Before visiting a foreign country, have a necessary vaccination.	Students have to work a lot in the reading room of the University library.
Герундій не вживається для утворення часів групи Continuous.	Дієприкметник вживається для утворення часів групи Continuous: We are examining a new patient now.

©1. Чи збігається за формою герундій і дієприкметник теперішнього часу? 2. Які труднощі викликають герундій і дієприкметник при їх розпізнанні?

4. Визначте форми з закінченням - ing. Речення перекладіть.

1. His being sent to the Congress of Anatomists was useful to him. 2. I remember having been reported this interesting case. 3. On having received the necessary findings of our experiments we summarized them in the article published recently.

4. The initial diagnosis must be made before the patient's being directed to the in-patient department.

5. Виберіть необхідну форму дієприкметника. Речення перекладіть.

1. ... the necessary fluid we could continue our experiments. (having obtained; having been obtained; being obtained) 2. ... for a prolonged period of time the patient made a complete recovery (being treated; having been treated; having treated) 3. ... by the physician the patient was complaining of an acute pain in the substernal area. (having been examined; being examined; having examined). 4. The results of the treatment of the patient depend on his ... in time. (having been operated on; being operated on; having operated on; operating) 5. I want my electrocardiogram ... by 11 o'clock (being taken; having been taken; taking; having taken).

6. Визначте, в яких з наступних речень вжито герундій. Перекладіть речення.

1. His bad condition prevented him from attending the lecture in Microbiology. 2. The microorganisms invading the human body are able to develop an infection. 3. The process of growth is due to the increasing number of cells. 4. The patient had to give up going in for sports because of the disease of the joints. 5. It is no use extending our investigations as the nature of this phenomenon has become clear. 6. We do learn from experience. Allow yourself to fail. Each failure teaches us something. Each one is a step closer to succeeding.

STEP 2. VOCABULARY. TEXTS

1. Translate the following words paying attention to their suffixes and prefixes.

Restless, embarrassed, displeased, overdosage, various, senior, examining, painless, numbness, inflammation, giddy, giddiness, gifted, homeless, irritative, different, markedly, bilateral, diminished, visualize, elderly, troublesome, notable.

2. Translate the following sentences paying attention to the meaning of the words in bold.

1. We **call** "aetiology" the causes of a disease. 2. We **call in** a doctor when some of our relatives are seriously ill. 3. I cannot **find** this patient's temperature chart. 4. I cannot **find out** any changes in the course of this patient's disease. 5. He cannot **carry** this heavy box. 6. He can **carry out** this difficult experiment.

3. Read and memorize the following words.

Aetiology	pathogenesis	Mechanism	visual
palpation	percussion	auscultation	cystoscopy
edema	haemorrhage	objective	subjective

4. YOU CAN'T DO WITHOUT THIS VOCABULARY:

Dizziness - запаморочення	Data (pl від datum) –дані
Objective об'єктивний	To generate – породжувати, спричиняти, викликати
Subjective суб'єктивний	To distinguish – відрізняти; бачити, розпізнавати
Evident – очевидний, явний	To yield – виробляти, давати
Ultrasound examination – ультразвукове обстеження	Spatial - просторовий, космічний
Ultrasonography - ультрасонографія	To sustain - підтримувати
Portable – портативний, розбірний	Bat - кажан
Computed tomography (CT) комп'ютерна томографія (КТ)	Navigate – плавати (на судні)

5. Read and translate Text A.

EXAMINATION OF THE PATIENT

Before treating the patient it is necessary to make a correct diagnosis of the disease and to determine its aetiology, i.e. the causes of the disease. The doctor must know well the pathogenesis of any disease, i.e. the way and mechanism of its development, as well as the symptoms by which it can be revealed.

A number of different procedures is used to establish a diagnosis: history-taking, physical examination, which includes visual examination, palpation, percussion, auscultation, laboratory studies, consisting of urinalysis, blood, sputum and other analyses; instrumental studies, for example, taking electrocardiograms or cystoscopy, X-ray examination and others.

For determining a disease it is very important to know its symptoms such as breathlessness, edema, cough, vomiting, fever, haemorrhage, headache and others. Some of these symptoms are objective, for example, haemorrhage or vomiting, because they are determined by objective study, while others, such as headache or dizziness (головокружение), are subjective since they are evident only to the patient.

6. Read Text B and say what data important for a future doctor are given in it. What will you try to remember?

MODERN METHODS OF DIAGNOSTICS

1) Medical ultrasound is a diagnostic imagine technique based on the application of ultrasound. It is used to see internal body structures such as tendons, muscles, joints, blood vessels, and internal organs. Its aim is often to find a source of a disease or to exclude any pathology. The practice of examining pregnant women using ultrasound is called obstetric ultrasound and is widely used.

Ultrasound is sound waves with frequencies which are higher than those audible to humans (>20,000 Hz). Ultrasonic images, also known as sonograms, are made by sending pulses of ultrasound into tissue using a probe. The sound echoes are recorded and displayed as an image to the operator.

Compared to other prominent methods of medical imaging, ultrasound has several advantages. It provides images in real-time, it is portable and can be brought to the bedside, it is substantially lower in cost, and it does not use harmful ionizing radiation.

2) A CT scan, also known as computed tomography scan, makes use of computer-processed combinations of many X-ray measurements taken from different angles to produce cross-sectional (tomographic) images (virtual "slices") of specific areas of a scanned object, allowing the user to see inside the object without cutting. Other terms include computed axial tomography (CAT scan) and computer aided tomography.

The term "computed tomography" (CT) is often used to refer to X-ray CT, because it is the most commonly known form. But, many other types of CT exist, such as positron emission tomography (PET) and single-photon emission computed tomography (SPECT). X-ray tomography, a predecessor of CT, is one form of radiography, along with many other forms of tomographic and non-tomographic radiography.

CT produces data that can be manipulated in order to demonstrate various bodily structures based on their ability to absorb the X-ray beam.

3) Magnetic resonance imaging (MRI) is a medical imaging technique used in radiology to form pictures of the anatomy and the physiological processes of the body in both health and disease. MRI scanners use strong magnetic fields, electric field gradients, and radio waves to generate images of the organs in the body. MRI does not involve X-rays and the use of ionizing radiation, which distinguishes it from CT or CAT scans.

MRI is widely used in hospitals and clinics for medical diagnosis, staging of disease and follow-up without exposing the body to radiation. However, MRI may often yield different diagnostic information compared with CT. There may be risks and discomfort associated with MRI scans. In addition, people with some medical implants or other non-removable metal inside the body may be unable to undergo an MRI examination safely.

4) Facts about Ultrasound Technology

Perhaps the most well-known fact in the world of ultrasounds - outside its use in pregnancy care - is that there are several animals that use ultrasound, referred to as echolocation, to navigate and survive. These include bats, whales, dolphins and shrews. But, moving to the world of medicine - here are some interesting facts.

- Though he did not invent it, Robert Hooke (1635 - 1703) noted that he believed it would be possible to study the inside of the body through the use of sound.
- Ultrasound has been around since 1794, when Italian physiologist, Lazzaro Spallanzani began studying the way bats navigate in the dark. This understanding became the basis for the modern ultrasound physics.

- The first tests to be conducted using ultrasound technology were done in 1826.
 - In the early years of ultrasound usage, patients had to be completely submerged in water in order to get a reading.
 - Dr. John J. Wild (1914 – 2009) is credited as being the Father of Medical Ultrasound. He is best known for using ultrasound to diagnose cancer.
 - In 1942, Dr. Karl Dussik first used ultrasound to diagnose brain tumors.
 - Other uses for ultrasound technology include veterinary procedures, gallbladder disease, cyst and tumor detection, urological concerns, heart problems and thyroid related issues – to name just a few.
 - In 1957, the Pan Scanner was introduced. It used a rotating transducer that did not require the patient to be fully submerged in water.
 - The first handheld ultrasound scanner was used in the US in 1963.
 - There is such a thing as 5-Dimensional ultrasound! It was invented by a group at John Hopkins University and integrated with computer surgical systems in conjunction with 3D ultrasounds. It was patented by Dr. Russell Taylor in 2011.
 - Ultrasound screenings are supported by 90% of cardiologists, neurologist and vascular surgeons.
 - The gel used during an ultrasound is to enable a tighter bond between the skin and the transducer, thus giving a more accurate reading.
- So, the next time you hear the word “ultrasound” don’t be surprised if it is not in reference to a pregnancy. It could be to a long list of procedures and includes much more than one might expect.

7. Read and translate Text C.

PEDIATRIC HISTORY AND PHYSICAL EXAMINATION

Every child should receive a complete systematic examination at regular intervals. Pediatrician should not restrict the examination to those portions of the body considered to be involved on the basis of the presenting complaint.

Approaching the Child

Adequate time should be spent in becoming acquainted with the child and allowing him/her to become acquainted with the examiner. The child should be treated as an individual whose feelings and sensibilities are well developed, and the examiner's conduct should be appropriate to the age of the child. A friendly manner, quiet voice, and a slow and easy approach will help to facilitate the examination.

Wash your hands with warm water before the examination begins. You will impress your patient's mother and not begin with an adverse reaction to cold hands in your patients. With the younger child, get to the heart, lungs and abdomen before crying starts. Save looking at the throat and ears for last. If part of the examination is uncomfortable or painful, tell the child in a warm, honest, but determined tone that this is necessary. Looking for animals in their ears or

listening to birdies in their chests is often another useful approach to the younger child.

Observation of the Patient

Although the very young child may not be able to speak, one still may receive much information from him/her by being observant and receptive. The total evaluation of the child should include impressions obtained from the time the child first enters until he/she leaves; it should not be based solely on the period during which the patient is on the examining table. In general, more information is obtained by careful inspection than from any of the other methods of examination.

8. Some of the statements are not true. Correct them.

1. The child should be treated as an individual whose feelings and sensibilities are well developed. 2. A friendly manner, quiet voice, and a slow and easy approach will help to facilitate the examination. 3. It is unnecessary to wash your hands with warm water before the examination begins. 4. With the younger child, get to the heart, lungs and abdomen when crying starts. 5. Postpone looking at the throat and ears for last. 6. Looking for animals in their ears or listening to birdies in their chests is often another abnormal approach to the younger child. 7. The total evaluation of the child should not be based solely on the period during which the patient is on the examining table.

9. 1. Read and translate Text D. 2. Make up your own dialogues (“At the Surgeon”, “At the Therapist’s”, “At the neurologist’s”).

PHYSICIANS ARE DOING PHYSICAL EXAMINATION

(1)

Patient: Help my headache, doctor, please. It's just killing me. You know, I'm often feverish and have a sore throat.

Dr. Osborn : Well, let me examine you.

Doctor O., while doing physical examination, fills in the History of the case (in his Notes, the Chart):

- No skin or other lesions.
- No weight loss.
- No murmur in the heart, but sinus tachycardia is present.
- Diminished breath sounds in the right base of the left lung and dry rales in both lung bases.
- Liver is palpable one finger breadth below the right costal margin.
- Spleen is not palpable.
- X-rays of the chest showed bilateral infiltration of the lower lobes.
- E. C. G. is normal.

Conclusion:

P-t: What do you think, Doctor, please? What's the matter with me?

Dr. O.: Well, your case hasn't been worked up yet... We should have different lab studies, skin tests for TB and histoplasmosis to diagnose your case. A liver, pleural and lung biopsies should be done too.

(2)

Dr. J.: Take your things off... Take this seat. I'm going to examine you. Well, your skin and sclera are markedly jaundiced.

(He takes an ophthalmoscope and visualizes the patient's eye-ground; with an otoscope he examines the patient's tympanic membranes.

Well, open your mouth now. I want to examine your throat.

(He takes a tongue blade and a flashlight).

Stick out your tongue, please... Good... Now let me check your neck and chest...

Neck is normal, no lymph nodes... Thyroid is not enlarged. Well, now breathe in and out through your mouth. Not so quick, please... Good... Say 'ninety nine' several times... Draw a deep breath and hold it. Blow the air out and don't breathe, please... Good... Lungs are clear.

(3)

- Well, now come up to me and lie down on the examining table. Nurse, help the patient, please.

Doctor begins palpation of the patient's abdomen

- Does it hurt here?... No?... And here?... Any tender spot?

-Yes, Doctor. It hurts me when you are pressing here.

(The patient shows the place with his finger).

-Well, it's your liver. It's tender. It's two finger-breadths below the right costal margin. You'll be hospitalized and kept on the complete bed rest ... Now, nurse, take the patient to be x-rayed and bring him back again. He must have some laboratory tests done: blood and urine tests and a needle biopsy on the liver too.

☺

He who studies medicine without books sails an uncharted sea, but he who studies medicine without patients does not go to sea at all.

- William Osler

☺

The aim of medicine is to prevent disease and prolong life, the ideal of medicine is to eliminate the need of a physician.

- William J. Mayo

☺

Kindness and a generous spirit go a long way. And a sense of humor. I'd like medicine – very healing.

Max Irons

CYCLE II. DISEASES

UNIT 7. THE DISEASES OF THE RESPIRATORY TRACT

LESSON 16.

Граматика: Часи групи Perfect Continuous

Тексти: Text A. Lobular Pneumonia

Text B. The Treatment of Lobular Pneumonia

STEP 1. GRAMMAR

1. Назвіть формулу часів групи Continuous. Поставте дієслово to be за цією формулою у Perfect та скажіть формула якої групи часів у вас вийшла. Яке допоміжне дієслово змінюється за часами у цій формулі? Як називаються такі часи? Прочитайте приклади і скажіть яка дія показує дієслово у Perfect Continuous та коли ця дія відбувається? Як перекладається дієслово у часах групи Perfect Continuous?

I have been examining the patient for half an hour.	Я обстежую цього пацієнта (вже) півгодини.
I had been examining the patient for half an hour when you came.	Я обстежував цього пацієнта (вже) півгодини, коли ви прийшли.

2. Назвіть підмети, формулу за якою вони утворені. Перекладіть речення.

1. The patient has been making a slow recovery for a month.
2. We shall have been investigating this case for three weeks by the end of the year.
3. The patient had been coughing for a month by the time he was admitted to the hospital.

3. Перепишіть пари речень, підкресліть присудки та визначте у чому їх різниця. Речення перекладіть.

1. a) I am waiting for the findings of my blood analysis.
b) I have been waiting for the findings of my blood analysis for an hour.
2. a) Dry rales are disappearing slowly.
b) Dry rales have been disappearing during this week.
3. a) The nurse is giving the injections.
b) The nurse has been giving the injections for two hours.

4. Напишіть питання до виділених членів речення.

1. My mother has been suffering from a bad pain in the substernal area for three hours.
2. The patient had been complaining of a considerable muscular pain before he was admitted to the hospital.
3. By 3 o'clock the professor will have been delivering the lecture for half an hour.

5. Визначте час дієслів. Перекладіть речення.

1. Although the patient had been receiving the injections of streptomycin for several days she showed little improvement.
2. The red blood cell count has been gradually returning to normal as the patient is being given blood transfusion.
3. My friend will have been living in Ternopil for a month when I come there.

6. Розкрийте дужки, напишіть дієслова у потрібному часі.

1. As fever (to persist) for about three weeks the patient's condition is very poor.
2. The researcher (to investigate) the origin of the inflammation for about a week before he drew a definite conclusion.
3. Some symptoms of the vascular impairment of the brain (to develop) gradually for some time before they became clearly marked.

STEP 2. VOCABULARY. TEXTS

WORD-FORMATION

Суфікс -ment – утворює іменники від дієслів: to excite - excitement
Суфікс -ness – утворює іменники від прикметників: weak- weakness
Суфікс -ance (-ence) утворюють іменники від дієслів: to enter-entrance

1. Form and translate the nouns:

- a) develop, improve, accompany, enlarge, impair, move;
- b) dull, clear, complete, breathless, ill;
- c) appear, enter, exist, occur, persist.

2. Translate the following words:

appear, appearing, appeared, appearance, disappear, disappearance;
reduce, reduced, reducing, reduction;
large, enlarge, enlarged, enlarging, enlargement;
improve, improving, improved, improvement;
intensity, intensive, intensively, intensify.

3. Match the words with their translation.

Lobular, focus (pl. foci), cyanosis, bronchiole, crepitation, diffuse, differentiate, pleurisy.
--

Бронхіола; крепітація, хруст; лобулярний; дифузний, розсіяний; фокус, центр, осередок; плеврит; диференціювати, відрізнити; ціаноз, синюшність.

YOU CAN'T DO WITHOUT THIS VOCABULARY:

Gradually- поступово	Accelerate- прискорювати
Improve- поліпшувати	Reduce- зменшувати
Accompany- супроводжувати	Dullness- тупість

Occlusion- закупорка	Intensity- напруженість
Purulent- гнійний	Shadow- тінь, затінити
Sputum- мокрота	Severe- сильний

4. Read and translate the following words and word-combinations:

1. **occlusion:** the occlusion of the artery, the occlusion of the small intestine, to reveal the intestine occlusion;
2. **sputum:** purulent sputum; thick sputum, the analysis of the sputum failed to reveal cellular elements;
3. **sign:** abnormal signs, the signs of the disease, these signs indicated the presence of inflammation;
4. **severe:** a severe form of the disease, a severe inflammation, to suffer from a severe cardiovascular disease.

5. Read Text A. Find the sentences with the Perfect Continuous, translate them. Make up a plan to the text. Ask the questions to the text.

LOBULAR PNEUMONIA

A 48-year-old patient was admitted to the hospital with the diagnosis of lobular pneumonia. He had been developed lobular pneumonia gradually. A week before the admission to the hospital he had had bronchitis after which his condition did not improve.

Fever had an irregular course and the temperature changes were caused by the appearance of the new foci of inflammation in the pulmonary tissue. Fever had been persisting for two weeks and had been decreasing gradually.

The patient's breathing was rapid with 30-40 respirations per minute. There was breathlessness and cyanosis of the face associated with the accompanying bronchitis, decrease in the respiratory surface and occlusion of numerous bronchioles and alveoli.

The patient complained of the pain in the chest particularly on deep breathing in and cough with purulent sputum. The pulse rate was accelerated and the arterial pressure was reduced.

On physical examination dullness in the left lung, abnormal respiration, numerous rales and crepitation were revealed. Dry rales caused by diffuse bronchitis were heard all over the lungs. The liver and spleen were not enlarged. The examination of the organs of the alimentary tract failed to reveal any abnormal signs but the tongue was coated.

The blood analysis revealed leukocytosis in the range of 12,000 to 15,000 per cu mm of blood and an accelerated erythrocyte sedimentation rate (ESR).

The urine contained a small amount of protein and erythrocytes. The X-ray examination of the lungs revealed numerous foci of inflammation of various size, irregular form and different intensity. Shadowing was particularly marked at the base of the left lung due to the enlargement of the lymphatic glands.

It was a severe form of pneumonia which was difficult to differentiate from pulmonary tuberculosis and pleurisy. Yet the physician made a correct diagnosis.

6. Choose the statements corresponding to text A:

1. a) Dry rales caused by diffuse bronchitis were heard all over the lungs.
b) Moist rales produced by pleurisy were heard all over the lungs.
2. a) The examination of the organs of the alimentary tract failed to reveal any abnormal signs.
b) The examination of the organs of the cardiovascular system revealed the signs of the heart impairment.

7. Choose the appropriate word from those given in brackets. Translate the sentences.

1. (Dry, moist) rales were caused by diffuse bronchitis. 2. The shadow at the base of the left lung was particularly marked due to the (enlargement, decreased) of the lymphatic glands. 3. (Mild, sever) forms of lobular pneumonia are difficult to differentiate from pulmonary tuberculosis and pleurisy. 4. Luminal and bromide were prescribed to the patient (to improve, to impair) his sleep.

8. Answer the following questions:

1. Where is the spleen located?
2. In what case may the spleen be enlarged?
3. What does purulent sputum always contain?
4. Where is the patient with a severe form of pneumonia admitted to?
5. When does the pulse rate accelerate?
6. In what disease may a shadow in the lungs be revealed?
7. What unit of blood pressure is used in medicine?
8. What temperature is a severe form of lobular pneumonia usually accompanied by?
9. What particular signs is bronchitis accompanied by?
10. What treatment must a patient follow to improve his state in case of bronchitis?

9. Read Text B. Put the paragraphs in the correct order. What have you learned about the treatment of pneumonia from the text?

THE TREATMENT OF LOBULAR PNEUMONIA

A. To improve the patient's sleep and the condition of his nervous system he had been taking fenobarbital during the whole course of the disease until his discharge from the hospital. Cough and chest pain were relieved by the administration of broncholytin, cough mixture, cups and other necessary procedures.

B. On the third day after the return of body temperature to normal the patient was allowed to walk a little. The doctor prescribed him the necessary physical exercises. The patient had not any possible complications such as lung abscess or pulmonary gangrene. As the findings of all the analyses and the temperature were normal the patient was discharged from the hospital in a week.

C. As the name of the disease suggests, a complete lobe or even two lobes of a lung are affected, the most striking changes occurring in the alveoli. The disease is seen typically in adults aged 20–50 years with males predominating. Lobular pneumonia is usually caused by *Streptococcus pneumoniae*.

D. On his first day of the disease, the patient with lobular pneumonia was administered a new antibiotic named linezolid in dose 600 ml every twelve hours during 14 days. Linezolid is the first of a new line of antibiotics known as oxazolidinones. The patient had been receiving this drug for the following 14 days when he began to feel better. In addition to linezolid the patient had been receiving Gentamycin in doses of 3ml per kg of body weight intramuscularly and intravenously three or four times a day during a period of 7 -10 days.

KEYS to exercise 9: 1 C; 2 D; 3 A; 4 B.

LESSON 17.

Граматика: Часи групи Perfect Continuous
Тексти: Text A. Pulmonary Tuberculosis – Clinical Picture.
Text B. Lung Abscess.

STEP 1. GRAMMAR

1. Перекладіть речення англійською мовою письмово, зверніть увагу на часи дієслова-присудка.

1. Зараз кардіолог обстежує цього хворого. 2. Кардіолог обстежує цього хворого вже півгодини. 3. Зараз мій брат знаходиться у стаціонарі. 4. Мій брат знаходиться у стаціонарі вже місяць. 5. Коли медсестра зайшла до палати хворий міцно спав. 6. Учора хворий міцно спав впродовж декількох годин після прийняття ліків.

2. Визначте, у яких реченнях слово «for» перекладається: а) «для», «так як»; б) слово «since» має значення «з», «так як», «з тих пір як»:

A) 1. The patient stated that he had been suffering from a bad cough with purulent sputum for about a month.

2. The patient was administered a diet for the physical examination of the liver had revealed its considerable enlargement.

3. The change of the patient's body temperature to abnormal was quite unexpected for the physician.

B) 1. Poorly developed bones and teeth, slow growth and even the general impairment of health occurred in some children since their food contained little phosphorus.

2. I have been waiting for the nurse since 8 o'clock. She must give me an intramuscular injection.
3. The patient had been complaining of cough with purulent sputum since he was administered to the hospital.
4. Since the patient's body weight had been considerably reducing and his liver became enlarged he was administered a number of laboratory analyses to make the diagnosis clear.

3. Визначте «-ing- forms». Перекладіть речення.

1. Having been affected by the benign process the lungs of the patient showed a marked shadowing at their base.
2. Having revealed the occlusion of numerous bronchioles and alveoli and the decrease in the respiratory surface of the lungs the physician determined the cause of breathlessness and cyanosis.
3. Being examined by the therapist the patient stated that he had had an accelerated pulse rate and reduced arterial pressure a month before.
4. Having been questioned about the results of the study, its participants reported about the high levels of satisfaction achieved from eating when watching a film.
5. Most experts agree that the best way to reduce disease for people is to wash their hands often. But a recent study showed that even though 94% of adults say they're washing their hands after using a public restroom, only 74% of women and 61% of men actually did so upon observations.

4. Перекладіть речення письмово, зверніть увагу на вживання часів.

1. При тяжких формах пневмонії температура зазвичай тримається на рівні 38°C.
2. Зараз у цього хворого тримається температура 38°C внаслідок тяжкої форми пневмонії.
3. У цього хворого тримається температура на рівні 38°C вже на протязі місяця.
4. Хворий завжди дотримувався постільного режиму під час серцевих приступів.
5. Хворий дотримувався постільного режиму, коли у нього з'явився серцевий приступ.
6. У зв'язку з серцевим захворюванням хворий дотримувався постільного режиму вже три тижні.

5. Назвіть корінь у наступних словах та перекладіть їх.

Intoxication, allowance, changeable, washing, clearly, uncomplicated, disappearance, remarkable, breathlessness, unprotective, senselessness, thickness, warmth, ineffective, findings, considerably, antibiotic, enlargement.

6. Утворіть однокореневі іменники (1), прикметники (2), прислівники (3), дієслова (4) та перекладіть їх:

1. accomplish, accumulate, investigate, pass, perspire, present;
2. protect, effect, change, move, pain, poison, produce, response;
3. loud, mild, quiet, rapid, separate, severe, sharp, smooth, sudden;
4. accomplishment, complicated, considerable, unexpected, elevation.

7. Заповніть пропуски словами «what», «which», «when», «whose».

1. ... treatment is indicated if a patient has a severe form of lobular pneumonia?
2. ... may the patient's erythrocyte sedimentation rate be accelerated?
3. ... of the following symptoms is characteristic of tuberculosis: a bad headache, cough with mucopurulent sputum or a coated tongue? 4. Thanks to ... scientific investigation was mycobacterium tuberculosis discovered?

8. Оберіть потрібну форму дієслова від тих, що наведені у дужках. Використайте їх у необхідній формі.

1. The patient's general condition (to improve, to recover) gradually since he was administered streptomycin injections.
2. The most characteristic symptoms of primary tuberculosis such as loss of appetite and weight, short periods of fever and slow growth (to develop, to produce) in a child since the age of two.
3. As the patient's temperature (to enlarge, to elevate) constantly since he was admitted to the hospital he had to follow a bed regimen.

9. Замініть виділені слова займенниками «one» («ones»), «that» («those»). Перекладіть речення.

1. In case of pulmonary gangrene the right lung is more often affected than the left lung.
2. In acute forms of pulmonary gangrene the sputum has a bad smell, like the smell of dead tissues or of a destroyed tooth.
3. In pulmonary edema the clinical picture reveals some findings like the findings observed in other lung diseases.

STEP 2. VOCABULARY. TEXTS

1. YOU CAN'T DO WITHOUT THIS VOCABULARY:

Affect- вражати (хворобою)	Profuse - рясний, надмірний
Causative agent- збудник	Permanent - постійний
Stage- стадія	Benign - доброякісний
Malaise - нездужання	Elevation- підвищення
Fatigue - втома	Perspiration - потовиділення
Loss - втрата	Evidence - очевидність, доказ
Pus - гній	Involve - вражати

2. Read and translate the following words and word-combinations:

- 1) **malaise**: a general malaise, to complain of a general malaise, a general malaise is one of the symptoms of tuberculosis;
- 2) **fatigue**: a considerable fatigue, a marked fatigue, to suffer from a slight fatigue;
pus: a thick pus, the discharge containing much pus, much pus was found in the sputum;

3) **benign**: a benign disease, a benign tumor was revealed in the lungs, benign impairment of the kidney.

3.1. Read and translate Text A. 2. Describe the clinical picture of tuberculosis.

PULMONARY TUBERCULOSIS – CLINICAL PICTURE

Pulmonary tuberculosis is caused by mycobacterium tuberculosis, which produces characteristic tuberculous changes in the lung. This disease may also affect other organs: bones, joints, lymphatic glands, kidneys. The causative agent of tuberculosis was discovered by Koch in 1882.

In the early stage of tuberculosis the patient usually complains of a general malaise, fatigue, loss of appetite and weight. Cough may be dry or productive, with sputum discharge. Coughing becomes worse at night and in the morning. In patients with cavities in the lungs coughing is accompanied by a considerable discharge of sputum.

Sputum is mucopurulent. Its microscopic examination reveals a large number of pus corpuscles, erythrocytes, and tuberculous organisms. Blood in the sputum is sometimes the first sign of tuberculosis. If large blood vessels are involved the discharge of blood may become profuse.

Fever is one of the permanent symptoms of pulmonary tuberculosis. In benign processes the body temperature is often subfebrile. In active forms it may range from 38°C to 39°C. A considerable elevation of temperature is observed in pneumonic forms, when fever persists at a level of 38°C and higher for several months.

Cold profuse perspiration at night is sometimes evidence of a severe form of tuberculosis. Loss of body weight is one of the typical signs of pulmonary tuberculosis. It is caused by tuberculous intoxication, a sharp increase in the metabolic rate and loss of appetite. Loss of body weight is particularly marked in progressive forms of the disease.

4. Translate the words and word-combinations in brackets.

1. It is sometimes difficult to make a correct diagnosis (на ранніх стадіях) of some diseases. 2. (Втрата апетиту) it is a very important symptom, which a physician must always pay particular attention to. 3. (Підвищення температури) has been persisting for several months since it was a pneumonic form of tuberculosis. 4. Dullness in the lungs, accelerated respiration, dry or moist rales and crepitation may be (доказ) of lobular pneumonia. 5. (Різне збільшення) of the number of leucocytes is often the evidence of a certain inflammatory process in the human body.

5. Read the passages, translate them and answer the questions.

1. The patient had a dry cough. In a day or two the cough became productive. After the attacks of cough the patient felt pain in the substernal area and in the throat. His

temperature was not very high. He followed home treatment and was administered aspirin and codein. He was recommended to have warm milk with soda several times a day. *Яке захворювання мав цей пацієнт - трахеїт чи бронхіт?*

2. The patient's temperature had been changing but persisting for two weeks. His breathing was rapid and he complained of breathlessness. There was cyanosis of the face. The chest pain was particularly sharp on deep breathing in. He had cough with purulent sputum. His erythrocyte sedimentation rate was accelerated. Dry rales were heard all over the right lung. *Який діагноз ви поставите цьому хворому- бронхіт чи пневмонія?*

6. Choose the correct variant using the text.

1. What forms of tuberculosis are accompanied by subfebrile temperature?
a) Benign forms of tuberculosis are; b) Pneumonic forms of tuberculosis are.
2. What kind of sputum has the patient with tuberculosis? a) It is purulent;
b) It is mucopurulent.
3. The evidence of what form of tuberculosis may cold profuse perspiration at night be? a) It may be the evidence of a benign form of tuberculosis; b) It may be the evidence of a severe form of tuberculosis.
4. What erythrocyte sedimentation rate has the patient with lobular pneumonia?
a) It is slow; b) It is accelerated.
5. What does the X-ray examination reveal in case of lobular pneumonia? a) It reveals a marked shadowing in the lungs; b) It reveals a cavity in the lungs.

7. Replace the words in bold type with similar ones.

1. Fever is one of the permanent symptoms of pulmonary tuberculosis. (changeable, constant).
2. In the presence of inflammation the discharge from the wound is usually purulent. (clear, contains pus).
3. Permanent fever is often accompanied by loss of appetite and fatigue. (temperature, malaise).
4. Within the thoracic cavity the pressure is lower than the atmospheric one. (higher, less).

8. Read the passages. Say what respiratory tract disease is described in each of them:

1. The girl developed a permanent loss of appetite and she had not been increasing in weight for several months. Her growth was slow. She often had short periods of fever. On physical examination the physician revealed a small number of dry and fine moist rales. The percussion sound was considerably reduced.
2. The patient complained of a general malaise, fatigue and cold profuse perspiration at night. His temperature had been persisting at a level of 38°C for about a month. He had mucopurulent sputum sometimes containing blood. When the doctor was examining him the patient stated that he had lost much weight.
3. When the patient was admitted to the hospital his breathing was rapid and there was a marked cyanosis of the face. He complained of chest pain on deep breathing in. The physician determined that his arterial pressure was reduced, his pulse rate was accelerated and there was dullness in the lungs. There were numerous foci of inflammation in the lungs revealed by the X-ray examination.

4. The longest word in the English language is pneumonoultranucrosopicsilicovolcanoconiosis - a lung disease caused by inhaling volcanic ash.

10. Read some additional information about pulmonary tuberculosis. Try to understand the meaning of the words in bold type from the context. Ask each other questions on the texts. Summarize all the texts.

a) In patients who recover from tuberculosis **the focus of disease** is surrounded by connective tissue and **the actual lesion** itself may turn into **a chalky nodule**. In persons with **more extensive involvement** but with a high degree of resistance, **fibroid induration** of a whole lobe or lung may occur. This may limit the spread of the disease, but does not produce complete recovery. In these cases chronic bronchitis persists for 10-20 years or longer. A large part of the lobe or lung may be involved in **the tuberculous process** and many of the bronchial tubes may be dilated as a result of the chronic cough. The chest is often deformed **by the partial collapse** of the affected portions of the lung. The patients lose weight constantly and **may die, either of the progress of the disease itself, or, more commonly, of some complicating or associated condition.**

b) **Primary tuberculosis** usually begins in childhood and affects the lungs and **bronchial lymphatic glands of the lung roots**. Primary tuberculosis may not give any **clinical manifestations** and is revealed only by **a positive Pirquet's and Mantoux's tests** and X-ray examination. Loss of appetite, short periods of fever, slow growth, loss of weight may be some of the symptoms characteristic of primary tuberculosis. Physical examination sometimes reveals **consolidation** of the pulmonary tissue. **A shorter percussion sound** and a small number of dry and moist rales are heard in the involved lung. **A favourable course** of primary tuberculosis leads to the formation of **a Ghon's focus**. In unfavourable cases primary tuberculosis may lead to an extensive inflammation.

Notes

1. Pirquet's test – шкірна туберкулінова проба Пірке
2. Mantoux's test – внутрішньошкірна туберкулінова проба Манту
3. Ghon's focus – фокус Гона (кальцинований осередок, який свідчить про перенесений туберкульоз)

11. Read Text B. What is the main idea of the second paragraph?

LUNG ABSCESS

Lung abscess may develop of various factors, e.g. as a complication of pneumonia. The patient's general condition gradually becomes worse. The clinical manifestations of a chill, pain in the affected side, fever elevating to 39-40°C are

present. There is a profuse perspiration at night, dry cough, a considerable increase of the white blood cell count and accelerated ESR. Both fever and the increase in the number of leucocytes depend on the presence of pus in the cavity. When pus is evacuated from the thoracic cavity the temperature decreases and the white blood cell count returns to normal. The repeated increase of white blood cells may be observed when pus is again accumulated in the cavity.

The course of the lung abscess may be divided into two periods: that before and after the rupture of the abscess into a bronchus. The length of the first period varies in different cases. The second period begins from the moment of the abscess rupture into a bronchus usually with 0,5 liter or more of sputum discharge. After the rupture of sputum into a bronchus, the body temperature returns to normal, and the patient's general condition becomes better. The sputum discharge gradually reduces in its amount. The appetite increases, the white blood cell count and ESR return to normal. Within 4-5 weeks of effective treatment complete recovery is usually observed in most cases of lung abscess.

UNIT 8. THE DISEASES OF THE CARDIOVASCULAR SYSTEM

LESSON 18.

Граматика: Складений додаток.

Тексти: Text A. Rheumatic Endocarditis.

Text B. What is Cardiovascular Disease?

Text C. Hypertension.

Text D. Does Aspirin Protect From Cardiovascular Disease?

STEP 1. GRAMMAR

1. Згадайте правила утворення і вживання складеного додатка.

СКЛАДЕНИЙ ДОДАТОК З ІНФІНІТИВОМ COMPLEX OBJECT	
Називна частина Іменник в загальному відмінку або особовий займенник в об'єктному відмінку	Дієслівна частина Інфінітив дієслова з/без частки "to"
<p>NB! Звичайно складений додаток перекладається підрядним з'ясувальним реченням: <i>I know him to be a good doctor. Мені відомо, що він гарний лікар.</i></p>	
<p>Складений додаток використовується після певних дієслів:</p> <ul style="list-style-type: none"> які виражають фізичне сприймання: TO SEE, TO HEAR, TO WATCH, TO NOTICE, TO OBSERVE, TO FEEL, А ТАКОЖ TO MAKE (ПРИМУШУВАТИ, СПОНУКАТИ), TO LET (ДОЗВОЛЯТИ) <p>NB! Інфінітив використовується без частки "to"!</p>	

The students observed on the screen the precise area of heart muscle lack a normal blood supply.

• які виражають розумову діяльність: TO KNOW, TO THINK, TO EXPECT, TO CONSIDER, TO BELIEVE, TO UNDERSTAND, TO SUPPOSE:

The doctor knows her to suffer from a heart failure.

They considered us to have completed our investigation.

• які виражають бажання, намір, почуття, емоції: TO WISH, TO DESIRE, TO WANT, TO LIKE, TO LOVE, TO MEAN, TO PREFER, SHOULD LIKE, WOULD LIKE, TO DISLIKE, TO HATE, CANNOT BEAR:

They want this patient to be examined by the professor.

• які виражають дозвіл, прохання, пораду, наказ: TO ADVISE, TO ALLOW, TO ASK, TO ORDER, TO PERMIT, TO PROMISE, TO WARN, TO SUFFER (ДОЗВОЛИТИ):

The doctors warn anxiety, insomnia and angina to occur when the heart is agitated.

• які виражають оголошення, об'яву: TO PRONOUNCE, TO DECLARE, TO REPORT

The doctor pronounced the wound to be a slight one.

2. Знайдіть складений додаток в наступних реченнях.

1. The doctors expected my sister to be operated on as soon as her temperature returned to normal. 2. The physician wanted my mother to be following a bed regimen for several days. 3. The cardiologist considered the electrocardiogram waves to have changed after the heart attack. 4. The physician supposed the intensity of the shadow in the lung to decrease after the treatment. 5. The patient saw the doctor enter the ward. 6. The students watched the nurse give an injection. 7. The patient felt the pain increase. 8. The investigator observed the primary manifestations of the disease be associated with the reduction of the number of erythrocytes. 9. The surgeon noticed the amount of pus in the mucopurulent discharge from the wound have been decreasing. 10. The examiner saw the marked shadowing in the lung have areas of various intensity.

3. Порівняйте наступні речення і зверніть увагу на дісприкметники.

A) We saw him recover gradually.	Ми бачили, як він поступово одужує.
Б) We saw him recovering gradually.	
A) I watched the doctor examine the patient.	Я спостерігав, як лікар оглядав пацієнта.
Б) I watched the doctor examining the patient.	

☺ Із яких елементів складається складний додаток (Б) речень?

STEP 2. VOCABULARY. TEXTS

1. Make groups of words according to the parts of speech. Pay attention to their suffixes.

Various, severity, hospitalize, constantly, doubtful, radiation, favourable, sensitive, incidence, measure, disturbance, frequently, duration, failure, consistently, acceleration, slightly, improvement, gradually, eliminate, abnormally, agreeable, precise, waxy, insufficiency, mucopurulent, shadow, evacuate, rupture.

2. Make groups of words with the same root.

Dilate, disturb, eliminate, unit, different, dilated, union, eliminated, differ, recurrence, dilatation, disturbance, elimination, unite, recur, difference, undilated, unity, disturbing.

3. Do you know that:

1. while hypertension is an elevated blood pressure, hypotonia is an abnormally decreased muscle tone or strength. 2. it was not until the late 1970s that the prevailing medical opinion was to ignore elevated blood pressure in the elderly. 3. in most elderly patients, a diuretic is the preferred initial therapy for hypertension. 4. cholesterol is a soft, waxy fat in the bloodstream and in all body cells. 5. atherosclerosis is a hardening or build up of cholesterol plaque and other fatty deposits in the arteries. 6. aneurism is a permanent abnormal balloon-like bulging of an artery's wall?

4. YOU CAN'T DO WITHOUT THIS VOCABULARY.

Palpitation – пальпітація, неправильне серцебиття	Undergo – зазнавати, переносити
Onset - початок	Recurrence – рецидив, повернення
Precede - передувати	Elevation – підняття, підвищення
Confirm - підтверджувати	Elevated - підвищений
Murmur - шум	Acceleration - прискорення
Malaise - нездужання	Accelerated - прискорений
Fatigue - втома	Enlarged - збільшений
Moderate – помірний, середній	Shortened - скорочений
Readings - показники	Overlap – перекривати
Slight – незначний, легкий	stroke - інсульт
Duration - тривалість	aneurism –аневризма, випинання стінки аорти
Insufficiency - недостатність	life expectioncy – ймовірна тривалість життя
Eliminate – усувати, знищувати	essential hypertension – есенціальна гіпертензія
Nourish – живити, плекати (надію)	minor pain – несильний біль
Follow-up- 1) подальші результати; подальше обстеження, нагляд; хворий, який наглядається подалі;	consistently - послідовно
2) простежити подальші результати; наглядатися з приводу віддалених результатів;	risk factor – фактор ризику
3) подальший	salt intake – споживання солі
	sedentary lifestyle - малорухливий спосіб життя

5. Read and translate the following words and word-combinations.

1. **onset**: onset of wind, a sudden onset, at the first onset, the onset of the disease;
2. **confirm**: to confirm a diagnosis, the diagnosis has now been confirmed, please confirm your decision, to confirm somebody in his decision;
3. **malaise**: a general malaise, to complain of a general malaise, accompanying malaise;
4. **fatigue**: to drop with fatigue, a constant fatigue, to complain of fatigue;
5. **insufficiency**: an insufficiency of data, insufficiency of health, cardiac insufficiency, a sense of one's own insufficiency;
6. **pain**: to be in pain, to feel pain, to complain of pain, bad pain, severe pain, severe pain, minor pain;
7. **eliminate**: to eliminate errors, to eliminate a possibility, to eliminate all unnecessary drugs, to eliminate wars;
8. **aneurism**: cardiac aneurism, false aneurism, medical aneurism, surgical aneurism.
9. **expectancy**: expect, I expected you yesterday, to be expecting, his recovery is expectable, life expectancy.

6. 1. Read Text A. 2. Find the sentences containing Complex Object. 3. Translate the text.

RHEUMATIC ENDOCARDITIS

The patient complained of a general malaise, early fatigue on exertion, cardiac discomfort and palpitation.

The physician found him to have been having an increase of body temperature to a subfebrile level for a prolonged period of time. The patient stated that the onset of the disease had been preceded by tonsillitis. The patient's pulse rate had become irregular and accelerated on physical exertion.

The blood analysis revealed moderate leukocytosis and an elevated ESR (Erythrocyte Sedimentation Rate). The ECG (electrocardiogram) showed the changes in the most important readings. On percussion the doctor determined the heart to be slightly enlarged. These findings of the physical examination were confirmed by the X-ray examination.

While listening to the patient's heart the doctor found a soft systolic murmur to be heard at the heart apex. These symptoms were accompanied by diastole murmur heard at the apex and base of the heart. The doctor estimated the murmurs to be varying in their intensity and duration. It was evidence of an inflammatory process in the valves. The doctor determined the organic changes in the mitral, aortic and tricuspid valves to be clearly marked.

The physician considered the patient to be ill with rheumatic endocarditis and insisted on his following a strict bed regimen at the in-patient department.

7. Find in Text A: 1) sentences describing the state of the patient; 2) sentences describing the complaints of the patient; 3) sentences to prove the findings of his examination; 4) the diagnosis of the patient.

8. Read Text B. Using words and word-combinations in bold, make up a plan of the text. Translate the text.

WHAT IS CARDIOVASCULAR DISEASE?

Cardiovascular diseases involve the blood vessels, the heart, or both. There are several types of cardiovascular disease, but treatment, symptoms, and prevention often overlap. **Fast facts of cardiovascular disease:**

- High blood pressure is a significant risk factor.
- Major cardiovascular disease related life-threatening events include heart attack, stroke, and aneurysm.
- One of the most common symptoms of cardiovascular disease is chest pain, which may indicate angina.

There are many different types of cardiovascular disease. **Symptoms** will vary, depending on the specific type of disease a patient has. However, typical symptoms of an underlying cardiovascular issue include: pains or pressure in the chest, which may indicate angina; pain or discomfort in the arms, the left shoulder, elbows, jaw, or back, shortness of breath, also known as dyspnea, nausea and fatigue, light-headed or faint, cold sweat. Overall, symptoms vary and are specific to the condition and the individual, but these are most common.

Researchers from the Northwestern University Feinberg School of Medicine reported in JAMA that the lifetime risk for cardiovascular disease is more than 50 percent for both men and women. They added that even among those with few or no cardiovascular risk factors, the risk is still more than 30 percent. **Risk factors** associated with cardiovascular disease include high blood pressure (hypertension), radiation therapy, smoking, lack of sleep, high blood cholesterol (hyperlipidemia), diabetes, diets that are high in fat combined with carbohydrates; physical inactivity, drinking too much alcohol, stress, air pollution, chronic obstructive pulmonary disorder (COPD) and reduced lung function.

People with one cardiovascular risk factor often have one or two others, too. For example, people with obesity often have high blood pressure, high blood cholesterol, and diabetes type 2.

The most common risk factors for cardiovascular disease appear to be **atherosclerosis and hypertension.**

Damage to the circulatory system can also result from diabetes and as the result of other health conditions, such as a virus, an infection, or a structural problem that the person was born with.

It often involves high blood pressure, but this can be both a cause and a result of cardiovascular disease.

The majority of cardiovascular diseases are preventable. It is important to address risk factors by consuming less alcohol and tobacco, eating fresh fruit and vegetables, reducing salt intake, avoiding sedentary lifestyles, particularly among children. Bad habits during childhood will not lead to cardiovascular disease while the individual is still young; but they can lead to the accumulation of problems that continue into adulthood, resulting in a greater probability of having a cardiovascular disease later in life.

9. Put the paragraphs of Text C in the correct order. Read and translate the text.

HYPERTENSION

A. High blood pressure is a common condition in which the long-term force of the blood against your artery walls is high enough that it may eventually cause health problems, such as heart disease.

Blood pressure is determined both by the amount of blood your heart pumps and the amount of resistance to blood flow in your arteries. The more blood your heart pumps and the narrower your arteries, the higher your blood pressure.

You can have high blood pressure (hypertension) for years without any symptoms. Even without symptoms, damage to blood vessels and your heart continues and can be detected. Uncontrolled high blood pressure increases your risk of serious health problems, including heart attack and stroke.

High blood pressure generally develops over many years, and it affects nearly everyone eventually. Fortunately, high blood pressure can be easily detected. And once you know you have high blood pressure, you can work with your doctor to control it.

A few people with high blood pressure may have headaches, shortness of breath or nosebleeds, but these signs and symptoms aren't specific and usually don't occur until high blood pressure has reached a severe or life-threatening stage.

B. Hypertension is considered to be present when a person's systolic blood pressure is consistently 140 mm Hg or greater, and/or their diastolic blood pressure is consistently 90 mm Hg or greater.

C. When to see a doctor You'll likely have your blood pressure taken as part of a routine doctor's appointment.

Ask your doctor for a blood pressure reading at least every two years starting at age 18. If you're age 40 or older, or you're age 18-39 with a high risk of high blood pressure, ask your doctor for a blood pressure reading every year. Blood pressure generally should be checked in both arms to determine if there is a difference.

D. Hypertension, most commonly referred to as “high blood pressure”, is a medical condition in which the blood pressure is chronically elevated. Hypertension can be classified as either essential (primary) or secondary. Essential hypertension indicates that no specific medical cause can be found to explain a patient’s condition. Secondary hypertension indicated that the high blood pressure is a result of (i.e. secondary to) another condition, such as kidney disease or tumours. Persistent hypertension is one of the risk factors for strokes, heart attacks, heart failure and arterial aneurism, and is a leading cause of chronic renal failure. Even moderate elevation of arterial blood pressure leads to shortened life expectancy.

10. Read and translate the following text. The endings of three sentences have been removed from the text. Complete the sentences with the proper ending.

DOES ASPIRIN PROTECT FROM CARDIOVASCULAR DISEASE?

Aspirin, also known as acetylsalicylic acid (ASA), is a medication that is generally used to treat minor pains; (1) _____ Aspirin has become popular as an antiplatelet drug - to prevent blood clots from forming. High-risk patients take it in low doses to prevent strokes and heart attacks. Aspirin is also given to patients (2) _____ A major problem posed by aspirin therapy for patients at risk of heart attack, stroke, and other cardiovascular events is major bleeding. A considerable proportion of patients with diabetes have a high rate of major bleeding, (3) _____ .

A	regardless of their therapeutic aspirin status.
B	it is also used as an antipyretic (to reduce fever) and as an anti-inflammatory.
C	after a heart attack to prevent cardiac tissue death or heart attack recurrence.

KEYS to exercise 9: 1 D, 2 B, 3 A, 4 C.
KEYS to exercise 10: 1 B, 2 C, 3 A.

☺ Abbreviations as part of the language

Some abbreviations (from Latin) are used as part of the language.		
Abbreviation	Meaning	Latin
etC.	and so on	et cetera
e.g.	for example	exempli gratia
i.e.	that's to say, in other words	id est

LESSON 19.

Граматика: Складений додаток.

Тексти: Text A. What Is Angina and How Do We Deal With It?

Text B. Angina Pectoris.

Text C. A History About Angina Pectoris.

STEP 1. GRAMMAR

1.А.Порівняйте наступні два речення і дайте відповіді на запитання.

A) I know that he studies at the Medical University.

B) I know him to study at the Medical University.

☺ 1. Яким підрядним реченням є «that he studies at the medical University»; 2. Чи є сполучник «that» в реченні (б); 3. В якому відмінку стоїть займенник «he» в реченні (б); 4. Яку форму прийняло дієслово «studies» в реченні (б); 5. Чому відповідає «that he studies» в реченні (б); 6. Якщо «him to study» відповідає «that he studies», то як потрібно перекласти фразу в реченні (б); 7. На яке питання відповідає «that he studies»; 8. Отже, на яке питання відповідає «him to study»; 9. Який член речення відповідає на питання що? (кого?) 10. Отже, яким членом речення є сполучення слів «him to study»? Вивчіть дієслова, з якими вживається складений додаток.

Б. В наступних реченнях зверніть увагу на переклад різних форм інфінітива, які входять до складу складеного додатка.

A) I know this surgeon (him) to operate on successfully.

I know this surgeon (him) to have operated on successfully.

B) I know this patient (him) to be operated on at our clinic.

I know this patient (him) to have been operated on at our clinic.

А) Я знаю, що цей хірург (він) оперує успішно.

Я знаю, що цей хірург (він) оперував успішно.

Б) Я знаю, що цього хворого (він) прооперовано в нашій клініці.

Я знаю, що цього хворого (він) було прооперовано в нашій клініці.

☺ 11. Чи відрізняється переклад простого інфінітива від перфектного інфінітива і інфінітива в пасивному стані?

2. Використайте складний додаток (Complex Object) замість підрядного речення.

1. At the Institute of Cardiology the researchers have found that mental overstrain is the factor causing the infarction in 35% of patients. 2. They have observed that the direct association between infarctions and the nerves occurs only in the age-group of patients over 40. 3. At the Institute of Experimental Medicine the scientists have found that cholesterol is produced in the body itself in the amounts sufficient to cause atherosclerosis. 4. Cardiologists have observed that children with congenital heart defects have no clinical manifestations of the disease until years after birth, when it may be too late to operate on.

3. Визначте функцію слова “that” і його значення.

1. The doctor expected **that** the disturbances in blood circulation would be eliminated by the administration of atropine. 2. The patient **that** is undergoing the course of treatment for rheumatic endocarditis will be followed up for several months. 3. **That** the inflammatory process would involve new areas in the lungs was clear at the onset of lobular pneumonia. 4. **That** child's life was saved after cardiological operation eliminating the congenital heart defect. 5. Subfebrile temperature accompanied by cold perspiration may be the clinical manifestation of tuberculosis and **that** of chronic rheumatic endocarditis.

4. Виберіть час і стан для дієслова-присудка.

1. In angina pectoris, the pain (to start) in the chest and behind the breastbone, then it radiates to the left shoulder and down the arm. 2. Patients with angina pectoris who (to have) no prior history of cardiac disease usually have a normal X-ray chest film. 3. Inflammation (to play) a pivotal role in the pathogenesis of coronary atherosclerosis and acute coronary events. 4. Ischemic heart disease usually (result in) a localized defect in systolic contraction. 5. Cardiac studies (include) non-invasive tests and echocardiography with Doppler analysis. 6. Angiography (to be) a method of visualizing blood vessels after introducing a radiographic solution. 7. We found that about 75% of patients (to experience) at least one episode of palpitations before the onset of the first symptomatic and persistent episode of atrial fibrillation. 8. The cardiac insufficiency designates a disease in which the heart muscle (to weaken) to such an extent that it is no longer capable of pumping the blood sufficiently through the blood vessels. 9. Early symptoms of cardiac insufficiency (to be) reduced physical fitness, shortness of breath during hard physical activity when climbing stairs or exercising, water retention in ankles. 10. A palpitation describes the sensation that occurs when a patient (to feel) an abnormality in the normal beat of the heart. 11. Angina pectoris typically (to trigger) by physical activity. 12. Attacks may (to increase) in frequency to a fatal outcome or may gradually decrease or disappear.

STEP 2. VOCABULARY. TEXTS

1. Make groups of words according to the parts of speech. Pay attention to their prefixes.

Undoutful, unknown, unanswerable, unbend, unapproachable, unaltered, unbind, unfavourable, unimpaired, unpreserved, untreated, unbroken, uncork.

2. Make groups of words with the same root.

Sufficient, norm, inflame, close, relieve, elevate, develop, insufficient, insufficiency, developed, inflammation, closure, tense, tension, relief, elevation, development, tensioned, normal, closed, developmental, deviate, elevated, deviation, deviated, normalize, inflammatory, closet.

3. Do you know that:

1. palpitations are sensations by a person that they are having hard, rapid, or irregular heartbeats or a combination of these sensations; 2. whether persistent or permanent, atrial fibrillation is a chronic disorder; 3. in patients with atrial fibrillation, the first aim is to stop an attack, and the second is to prevent recurrences; 4. atrial fibrillation is generally treatable with medication?

4. Choose the proper answer.

1. Medical technology leads to a) expansion of health insurance; b) globalization of medical knowledge; c) greater access to medical care; d) increased costs of delivering medical care; e) deterioration of medical care. 2. Quality of life is assessed in terms of a) the patient's overall satisfaction with life; b) a person's ability to overcome a chronic condition; c) improved access to medical care; d) accurate diagnosis and treatment; e) the increase of health care expenditure. 3. The physician's role is to a) direct patients to the clinic; b) diagnose abnormalities; c) only prescribe medications to patients; d) evaluate a patient's health condition; e) sympathize with the patients. 4. The World Health's Organization's definition of health is a) state of physical and mental well-being that facilitates the achievement of individual goals; b) absence of illness or disease; c) state of optimum capacity of an individual to perform his or her expected social roles; d) the well-being of the whole person; e) high standard of medical care. 5. Morbidity is defined as a) activities of daily living; b) prodromal state; c) disease or disability; d) recovery period; e) death rates. 6. Unless you're a closet Einstein, you're not going to sail through your exams with zero anxiety, so a) study, study and study; b) don't have a sleep at night before your examination; c) have a nervous breakdown; d) tell everybody you have passed the examination successfully; e) relax – it's natural to feel stressed.

5. YOU CAN'T DO WITHOUT THIS VOCABULARY.

Angina pectoris - стенокардія Ischemia - ішемія Squeeze – стискувати, давити Exposure – виставляння, викриття; експозиція Morbidity - хворобливість Load – вантаж, тягар; навантаження; to trigger - пустити в хід, запустити refer – відсилати, посилатися, стосуватися Strangle – душити vanish – зникати, пропадати	Seize – хапати, захоплювати cease – зупинити, припинити instant – мить, момент; негайний instantaneous – миттєвий, моментальний instantaneously – відразу, негайно acknowledge – визнати, підтверджувати ultimately – зрештою, кінець кінцем perish - гинути, померати; губити intimation – натяк; вказівка stable angina – стабільна стенокардія
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6. Read and translate the following words and word-combinations.

1. **pectus**: pectoral, pectoral muscles, angina pectoris, anginal pain;
2. **narrow**: a narrow circle of friends, , narrow choice, narrow majority , to have a narrow escape, to narrow one's lids, narrowing;
3. **squeeze**: to give somebody's hand a squeeze, we all got in but it was a tight squeeze, to squeeze a finger, to squeeze a sponge, a squeezing pain;
4. **severe**: to say something in a severe voice, a severe father, severe discipline, severe pain, the severity of condition, severely narrowed arteries;
5. **exertion**: exertion of memory, it was so hot that it seemed too much exertion even to breathe, pain on exertion.
6. **exposure**: expose, to expose to risk, to be exposed to rain, exposed to radioactive radiation, exposure of the body to sunlight is recommended by doctors, exposure test.

7. Read and translate Text A. Put questions to the text to make up a plan of it.

WHAT IS ANGINA AND HOW DO WE DEAL WITH IT?

Angina pectoris is the medical term for chest pain or discomfort due to coronary heart disease. It occurs when the heart muscle doesn't get as much blood as it needs. This usually happens because one or more of the heart's arteries is narrowed or blocked, also called ischemia. Angina usually causes uncomfortable pressure, fullness, squeezing or pain in the center of the chest. You may also feel the discomfort in your neck, jaw, shoulder, back or arm. Many types of chest discomfort — like heartburn, lung infection or inflammation — aren't related to angina. Angina in women can be different than in men.

When does angina pectoris occur? Angina often occurs when the heart muscle itself needs more blood than it is getting, for example, during times of physical activity or strong emotions. Severely narrowed arteries may allow enough blood to reach the heart when the demand for oxygen is low, such as when you're sitting. But, with physical exertion—like walking up a hill or climbing stairs—the heart works harder and needs more oxygen.

The pain or discomfort occurs when the heart must work harder, usually during physical exertion. It doesn't come as a surprise, and episodes of pain tend to be alike. The pain usually lasts a short time (5 minutes or less) and is relieved by rest or medicine.

Possible triggers of stable angina include emotional stress, exposure to very hot or cold temperatures, heavy meals and smoking.

People with angina pectoris or sometimes referred to as stable angina have episodes of chest pain. The discomfort is usually predictable and manageable.

Normally this type of chest discomfort is relieved with rest, nitroglycerin or both. Nitroglycerin relaxes the coronary arteries and other blood vessels, reducing the amount of blood that returns to the heart and easing the heart's workload. By relaxing the coronary arteries, it increases the heart's blood supply.

8. Read and translate Text B. Give examples of using Complex Object.

ANGINA PECTORIS

On being admitted to the in-patient department the patient complained of pain in the chest.

He had been suffering from pain of various intensity in the chest and behind the breastbone for several weeks. The patient noted the pain to radiate to the left shoulder and down the arm. The patient also observed the pain have been growing worse on moving and on physical exertion. He stated that it frequently began suddenly at night during sleep.

During the attacks of pain he was covered with cold perspiration and his face was pale. The incidence of attacks was frequently associated with physical and mental overstrain.

On physical examination the doctor revealed areas of very sensitive skin from the 7th cervical vertebra to the 5th upper thoracic one. On percussion, palpation and auscultation of the heart so significant abnormality was revealed.

The electrocardiogram taken during the attack showed a disturbance in the blood flow. The most important readings of the electrocardiogram were either diminished or deviated. By having repeated the electrocardiogram after the end of the attack the cardiologist found the adequate readings of the electrocardiogram to return to normal ones.

During the attacks of moderate pain no changes in the peripheral blood or elevation of body temperature were noted. However the temperature rose insignificantly and there was an accompanying slight leukocytosis when the attacks of pain were particularly severe.

The doctor made the diagnosis of angina pectoris with a severe course. Its main cause was atherosclerosis of the coronary arteries.

9. Answer the following questions.

1. What did the patient complain on?
2. Did the patient describe the localization of the pain?
3. What was the character of pain?
4. Did the pain radiate to the jaw?
5. When did the pain become worse?
6. Did the pain begin at daytime or at night?
7. What were the sensations of the patient during the attacks of pain?
8. What did the doctor reveal on physical examination?
9. Are percussion, palpation and auscultation used on physical examination in cardiological patients?
10. Is electrocardiogram taken during the attack?
11. Do the doctors repeat the electrocardiogram?
12. What was the main cause of angina pectoris in the patient?

10. Put the paragraphs of Text C in the correct order. Read and translate the text.

SOME HISTORY ABOUT ANGINA PECTORIS

A. It was Heberden's friend, Edward Jenner (1749–1823) who first suggested in 1786, after observing an autopsy of a patient who had suffered from angina, that the disorder might have something to do with a disease of the coronary arteries.

B. "The termination of the angina pectoris is remarkable. For if no accident interferes, but the disease goes on to its height, the patients all suddenly fall down, and perish almost immediately. Of which indeed their frequent faintness and sensations as if all the powers of life were failing, afford no obscure intimation."

C. Interestingly, Heberden never implied that angina pectoris reflected an underlying disease of the heart or the arteries. Because pulse was usually normal during an attack, he discounted the possibility that angina was caused by some cardiac condition. However, Heberden was well aware of the risks associated with the disorder. He clearly understood that angina was associated with increased risk of sudden death. He wrote:

D. Clearly, Heberden was well aware of the squeezing sensation in the chest as well as the sense of unease or anxiety that is felt by so many patients with angina pectoris. The association with physical effort is also very clear and so is the fact that many patients experience angina after consuming a heavy meal. Heberden also acknowledged the progressive nature of the disorder and that ultimately many patients may experience angina even while resting.

E. "There is a disorder of the breast, marked with strong and peculiar symptoms, considerable for the kind of danger belonging to it, and not extremely rare, of which I do not recollect any mention among medical authors. The seat of it, and sense of strangling and anxiety with which it is attended, may make it not improperly be called angina pectoris. Those who are afflicted with it are seized, while they are walking, and more particularly when they walk soon after eating, with a painful and most disagreeable sensation in the breast, which seems as if it would take their life away, if it were to increase or to continue: the moment they stand still, all this uneasiness vanishes. In all other respects the patients are at the beginning of this disorder perfectly well, and in particular have no shortness of breath, from which it is totally different. After it has continued some months, it will not cease instantaneously by standing still; and it will come on, not only when the persons are walking, but when they are lying down and oblige them to rise up out of their beds every night for many months together."

F. Willam Heberden (1710-1801) was a highly regarded physician who practiced in London in the 18th century after having been a fellow of St. John's College in Cambridge for a some years. He presented his remarkably explicit and almost lyrical description of angina pectoris at the Royal College of Physicians in London in 1768.

Keys to exercise 10: 1 F, 2 E, 3 D, 4 C, 5 B, 6 A.

LESSON 20.

Грамматика: Revision.

Тексти: Text A. Atherosclerosis and its Treatment.

Text B. What Is a Heart Attack?

Text C. The Benefits of Giving Up Smoking.

STEP 1. GRAMMAR

1. Дайте відповіді на питання:

1. Назвіть формулу групи часів Perfect Continuous. 2. Як перекладаються часи групи Perfect Continuous? 3. Із яких частин складається складений додаток? 4. На якому місці в реченні стоїть складений додаток? 5. Як перекладається складений додаток рідною мовою?

2. Знайдіть в реченнях присудки, визначте час і напишіть формули, за якими часи утворені. Перекладіть речення.

1. The life of the girl was saved thanks to a successful operation for a congenital heart defect. 2. Many other mechanisms affecting vascular tone are involved in the maintenance of a normal blood pressure. 3. On his first admission to the hospital the patient complained of palpitation and discomfort in the chest. 4. The patient had had numerous foci of inflammation in the left lung before he underwent the antibiotic treatment. 5. The girl has had heart murmurs since the age of seven and no therapeutic measures were effective in their elimination. 6. On palpation the physician determined that the liver was considerably enlarged. 7. The angiotension-converting enzyme inhibitors have become the first-line therapy in treating hypertensive patients. 8. While diagnosing the condition is important, it is unfortunately also difficult; clinical and laboratory signs and symptoms are generally unhelpful.

3. Виберіть правильний варіант для закінчення речення.

1. The doctor wanted ... (a) the heart failure to develop frequently; (b) the patient to be followed-up at the out-patient department. 2. The nurse made ... (a) the patients take bromide to control his sleeplessness; (b) the heart be excluded from

the blood circulation. 3. The surgeon ordered ... (a) the patient's wound to be bandaged immediately; (b) the intensity of the inflammatory process to be reducing gradually.

4. Розподіліть наступні слова по графам.

Іменники	Прикметники	Дієслова	Прислівники
Rupture, dangerous, incision, fibrillation, congenital, recurrence, eliminate, strictly, bandage, failure, extensive, frequently, evidence, sensitive, radiate, disturbance, damage, accelerate, feverish, deviate, insufficiency, slightly, duration, hypertensive, attack, detect, enclose, case, occur, associate, pain-free, sometimes.			

5. Перекладіть речення з складним додатком.

1. The physician considered the incidence of heart attacks to be associated with the nervous overstrain. 2. The doctor wants me to have undergone the course of treatment by the end of the year. 3. We noticed the most characteristic symptoms of rheumatic endocarditis have been eliminated since the administration of those preparations.

STEP 2. VOCABULARY. TEXTS

1. YOU CAN'T DO WITHOUT THIS VOCABULARY.

Atherosclerosis - атеросклероз	Myocardial infarction – інфаркт міокарду
Narrowing - звуження	Cardiac ischemia – серцева ішемія
Atherosclerotic plaque – атеросклеротична бляшка	Silent ischemia – безболісна ішемія
to clog - забити	To be halved- стать вдвічі менше
blood clot – згусток крові	Tar - смола
stroke - інсульт	Varnish - лак
streak - смуга	Drag - затяжка

2. Read and translate Text A. What is a clinical picture of atherosclerosis? What do the cardiologists mean speaking about lifestyle changes of the patients with atherosclerosis?

ATHEROSCLEROSIS AND ITS TREATMENT

Atherosclerosis is the narrowing of arteries due to plaque build up on the artery walls.

Arteries carry blood from the heart to the rest of the body. They are lined with a thin layer of cells that keeps them smooth and allows blood to flow easily. This is called the endothelium.

Atherosclerosis starts when the endothelium becomes damaged, allowing the harmful type of cholesterol to build up in the artery wall.

The body sends a type of white blood cell to clean up this cholesterol, but, sometimes, the cells get stuck at the affected site.

Over time, plaque can build up, made of cholesterol, macrophages, calcium, and other substances from the blood.

Sometimes, the plaque grows to a certain size and stops growing, causing the individual no problems. However, sometimes, the plaque clogs up the artery, disrupting the flow of blood around the body. This makes blood clots more likely, which can result in life-threatening conditions.

In some cases, the plaque eventually breaks open. If this happens, platelets gather in the affected area and can stick together, forming blood clots. This can block the artery, leading to life-threatening complications, such as stroke and heart attack.

The condition can affect the entire artery tree, but mainly affects the larger, high-pressure arteries.

The first signs of atherosclerosis can begin to develop during adolescence, with streaks of white blood cells appearing on the artery wall. Most often, there are no symptoms until a plaque ruptures, or the blood flow is very restricted. This typically takes many years to occur. The symptoms depend on which arteries are affected.

We know that carotid arteries provide blood to the brain, and a limited blood supply can result in a stroke. A person may experience a range of symptoms as a result of atherosclerosis in this area, including weakness, difficulty breathing, headache, facial numbness, paralysis.

Chest pain can be a symptom of atherosclerosis affecting the coronary arteries.

Coronary arteries provide blood to the heart. When the blood supply to the heart is limited, it can cause angina and heart attack. Symptoms include vomiting, extreme anxiety, chest pain, coughing, feeling faint.

Renal arteries supply blood to the kidneys. If the blood supply becomes limited, there is a serious risk of developing chronic kidney disease. The person with renal artery blockage may experience loss of appetite, swelling of the hands and feet, difficulty concentrating.

Treatment options include lifestyle changes, various medications, and surgical interventions.

Prevention and treatment of atherosclerosis consist mainly of a certain regimen for the patient, which he must strictly follow. The patient must get up, eat, work, and go to bed at exactly the same time every day.

Sound sleep is very important since it enables the nerve cells to rest. The patients with the signs of atherosclerosis must sleep not less than 7-8 hours and walk before going to bed. Mental and physical overstrain must be excluded.

The incidence of atherosclerosis is high in professional groups with insufficient physical activities. So physical exercises must be part of the prescribed regimen for such persons.

Smoking affects unfavourably the walls of the blood vessels and can result in their spasm, that is why patients suffering from atherosclerosis must not smoke.

The diet of such patients must contain sufficient amounts of proteins, but fats and carbohydrates must be taken in very limited doses.

Vitamins are widely used in the treatment of atherosclerosis because some of them improve the metabolic processes and others dilate the vessels, particularly the peripheral ones.

Treating atherosclerosis is important for preventing complications.

3. Say whether the following statements are true or false.

1. Atherosclerosis is a condition in which an artery wall thickens as a result of the accumulation of fatty materials such as cholesterol. 2. Atherosclerosis doesn't start when the endothelium becomes damaged. 3. The condition doesn't affect the entire artery tree. 4. The first signs of atherosclerosis can begin to develop during adolescence. 5. The symptoms don't depend on which arteries are affected. 6. Atherosclerosis is caused by the formation of multiple plaques within the arteries. 7. The patients with the signs of atherosclerosis must sleep not less than 9-10 hours. 8. Smoking affects favourably the walls of the blood vessels. 9. Patients suffering from atherosclerosis must smoke. 10. Though symptoms are rarely exhibited in children, early screening of children for cardiovascular diseases could be beneficial to both the child and his relatives.

4. Read and translate Text B. Divide the text into logical parts and find the topical sentences of each part.

WHAT IS A HEART ATTACK?

The heart requires its own constant supply of oxygen and nutrients, like any muscle in the body. The heart has three coronary arteries, two of them large, branching arteries that deliver oxygenated blood to the heart muscle. If one of these arteries or branches becomes blocked suddenly, a portion of the heart is starved of oxygen, a condition called "cardiac ischemia."

If cardiac ischemia lasts too long, the starved heart tissue dies. This is a heart attack, otherwise known as a myocardial infarction -- literally, "death of heart muscle."

Most heart attacks occur during several hours -- so never wait to seek help if you think a heart attack is beginning. In some cases there are no symptoms at all, but most heart attacks produce some chest pain.

Other signs of a heart attack include shortness of breath, dizziness, faintness, or nausea. The pain of a severe heart attack has been likened to a giant fist enclosing and squeezing the heart. If the attack is mild, it may be mistaken for heartburn. The pain may be constant or intermittent. Also, women are less likely to experience the classic symptoms of chest pain; rather, they may feel a sense of fullness in their chest or pain in their arm, neck, back or jaw.

Many heart attack victims are warned of trouble by episodes of angina, which is chest pain that, like a heart attack, is provoked by ischemia. The difference is

mainly one of degree. With angina, blood flow is restored, pain recedes within minutes, and the heart is not permanently damaged. With a heart attack, blood flow is critically reduced or fully blocked, pain lasts longer, and heart muscle dies without prompt treatment.

About 25% of all heart attacks occur without any previous warning signs. They are sometimes associated with a phenomenon known as "silent ischemia" -- sporadic interruptions of blood flow to the heart that, for unknown reasons, are pain-free, although they may damage the heart tissue. The condition can be detected by ECG (electrocardiogram) testing. People with diabetes often have silent ischemia.

5. How would you use the following phrases when discussing Text B? Make up sentences based on the text.

Like any muscle in the body; two of them large, branching arteries that deliver oxygenated blood to the heart muscle; a condition called "cardiac ischemia; the starved heart tissue dies; known as a myocardial infarction; never wait to seek help; most heart attacks produce some chest pain; the pain of a severe heart attack has been likened to; it may be mistaken for heartburn; women are less likely to experience the classic symptoms of chest pain; with angina; with a heart attack; a phenomenon known as "silent ischemia".

6. Read the following information and answer the questions supplying your explanation.

1. This condition occurs when coronary arteries which supply the heart muscle with blood become narrowed and cannot carry sufficient blood to meet increased demands during exertion or excitement. An attack forces the casualty to rest, the pain should ease soon afterwards. Про який стан іде мова?

2. It is commonly caused by a sudden obstruction of the blood supply to part of the heart muscle – for example, because of a clot in a coronary artery. The main risk is that the heart will stop beating. Що може бути причиною зупинки серця?

3. The heart is an amazing organ. It beats in a steady, even rhythm, about 60 to 100 times each minute. That's about 100,000 times each day. Sometimes, your heart gets out of rhythm. An irregular or abnormal heartbeat is called an arrhythmia. An arrhythmia can produce an uneven heartbeat, or a very slow or very fast beat. Як лікарі називають цю групу порушень діяльності серця?

4. It is an irregular and often rapid heart rate that can increase your risk of stroke, heart failure and other heart-related complications. During it, the heart's two upper chambers (the atria) beat chaotically and irregularly — out of coordination with the two lower chambers (the ventricles) of the heart. It's symptoms often include heart palpitations, shortness of breath and weakness. Назвіть одну із самих поширених аритмій серця.

7. Read and translate Text C. Discuss the text in your group.

THE BENEFITS OF GIVING UP SMOKING

The health benefits begin almost as soon as you quit. After ...

- **20 minutes** Blood pressure and pulse return to normal.
- **8 hours** Nicotine and carbon monoxide levels in the blood are halved, oxygen levels in the blood return to normal.
- **24 hours** Carbon monoxide is eliminated from the body and the lungs start to clear out the build up of tar.
- **48 hours** There is no nicotine left in the body. Taste and smell are greatly improved.
- **72 hours** Breathing becomes easier, bronchial tubes begin to relax, energy levels increase.
- **12 weeks** Circulation improves, making walking and running a lot easier.
- **9 months** Coughs, wheezing and breathing problems improve as the lungs have room for up to 10 per cent more oxygen.
- **1 year** Risk of heart attack is halved.
- **10 years** Risk of lung cancer is halved.
- **15 years** Risk of heart attack is at the same level as non-smokers.

The risk of developing lung cancer, other cancers, heart attack, stroke and chronic lung disease is reduced – the sooner you stop smoking, the sooner your risk starts going down.

Stopping smoking at any age increases your life expectancy, provided that you stop before the onset of serious disease. Even if you have developed a disease, you can benefit from stopping as your body will be under less strain.

A smoker who has suffered from a heart attack can halve the risk of a second heart attack by stopping smoking.

Ten years after quitting smoking an ex-smoker's risk of lung cancer is reduced by 30 to 50 per cent compared with that of a continuing smoker.

Smokers who stop before the age of 35 have a life expectancy not significantly different from that of a non-smoker.

But it's never too late. Smokers who give up smoking between 65 and 74 years of age have a better life expectancy beyond 75 than those who continue to smoke.

Financial benefits

Stopping smoking isn't just about losing something – it's about gaining a lot!

A packet of 20 cigarettes costs around £6.00 at the moment, so quitting will give a 20-a-day smoker an extra £42.00 a week.

The benefits of stopping smoking soon start adding up ...

- One week £42.00 – a cheap flight abroad.
- Three months £546.00 – two weeks in the sun or a new computer.
- One-year £2184.00 – a second-hand car or the start or a deposit for a house.

Other benefits

Better looking skin, eyes and hair

Within days of stopping smoking your hair won't smell, your eyes will be less red and sore and your skin will be looking brighter as your circulation improves.

Look younger for longer

Quitting smoking can help you avoid premature ageing.

Improved fitness

Your energy levels will soon soar when you quit smoking, making it easier to run for the bus or play sports with your friends.

A better sense of smell and taste

Rediscover the taste of your favourite foods as your taste buds kick in.

Whiter teeth

No matter how often you visit a dentist, you'll find it impossible to maintain white teeth if you smoke.

More time

It takes about ten minutes to smoke a cigarette, so a ten-a-day smoker can save nearly two hours a day when they quit. Over the course of a year, you can claim back a month of lost time!

What is in cigarette?

You've heard of nicotine but, when it comes to health, that's the least of your worries. Each cigarette contains around 4,000 chemicals, many of which are known to be toxic.

Here are a few of the nasties you'll be inhaling in every drag:

- Acetone – widely used as a solvent, for example in nail polish remover.
- Ammonia – found in cleaning fluids.
- Arsenic – a deadly poison, used in insecticides.
- Benzene – used as a solvent in fuel and chemical production.
- Cadmium – a highly poisonous metal used in batteries.
- Carbon monoxide (CO) – an odourless, tasteless and poisonous gas; makes breathing more difficult as it combines with the blood that carries oxygen around the body. Up to 15 per cent of a smoker's blood may be carrying CO instead of oxygen, making the heart work harder, and potentially leading to coronary heart disease and circulation problems.
- Cyanide – a deadly poison.
- Formaldehyde – used to preserve dead bodies.
- Shellac – becomes a wood varnish when mixed with a form of alcohol.
- Tar – a mixture of chemicals (including formaldehyde, arsenic and cyanide). About 70 per cent of the tar is left in smoker's lungs, causing a range of serious lung condition.

8. Make a list of words and phrases used in Text C for describing the benefits of quitting smoking.

9. Say whether the following statements are true or false.

1. You've heard of nicotine but, when it comes to health, that's the least of your worries. 2. It's too late to give up smoking when you are eighteen. 3. A smoker who has suffered from a heart attack can double the risk of a second heart attack by stopping smoking. 4. Stopping smoking is just about losing something important. 5. About 70 per cent of the tar is left in smoker's lungs, causing a range of serious lung condition. 6. It takes about two minutes to smoke a cigarette. 7. Each cigarette contains around 4,000 chemicals, many of which are not toxic. 8. Up to 15 per cent of a smoker's blood may be carrying CO instead of oxygen, making the heart work harder, and potentially leading to coronary heart disease and circulation problems.

Keys to exercise 6: 1) angina pectoris; 2) heart attack; 3) arrhythmia; 4) fibrillation.

LESSON 21.

Граматика: Revision.

Тексти: Text A. Cardiosurgery. Methods Used in Cardiosurgery.

Text B. History of Cardiosurgery.

Text C. Methods Used In Cardiosurgery.

STEP 1. GRAMMAR

1. Виберіть форму дієприкметника.

1. The vessels (*carried/carrying*) blood to and from the tissues of the body compose the general system. 2. The blood vessels (*located/locating*) on the anterior surface of the arm were dilated. 3. The muscular structure of the heart consists of fibrous bands (*divided/dividing*) into two groups. 4. The vessels (*carried/carrying*) blood to the heart are called veins. 5. The heart is an inner hollow muscular organ (*included/including*) in the pericardium. 6. There are four valves (*located/locating*) at the entrance and exit of each ventricle. 7. The valves of the heart make the noises (*known/knowing*) as heart sounds. 8. The portal system is formed by the veins (*passed/passing*) to the liver. 9. Arteries are muscular blood vessels (*composed/composing*) of three coats. 10. The valve (*located/locating*) at the point of origin of the aorta in the left ventricle is called aortic valve.

2. Виберіть правильний час і стан для дієслів в дужках.

1. At the entrance and exit of the ventricles you can (to see) four valves.
2. There (to be) the period of rest between the heart beats. 3. Arteries are muscular blood vessels that (to carry) blood away from the heart. 4. An arteriole is a small artery that (to extend) and (to lead) to capillaries. 5. Capillaries (to be) the smallest of the body's vessels. 6. The "capillary bed" (to be) the network of capillaries present throughout the body. 7. The artery walls are thick so that when

blood (to enter) under pressure, the walls expand. 8. Capillaries (to be) very prevalent in the body – their total surface area (to be) about 6,300 square meters. 9. The aorta (to go) to the border of the fourth lumbar vertebra and here it (to finish) dividing into the left and right iliac arteries. 10. The heart (to beat) roughly 100,000 times per day, sending blood on its journey around the body.

3. Виберіть правильний варіант відповіді.

1. The World Health Organization ... that health is “a state of complete physical, mental and social well-being, not merely the absence of disease or infirmity”.
a) had claimed b) is claiming c) claimed d) claims e) will claim
2. Disease is an abnormal condition of a part, organ, or system of an organism resulting from various causes, such as infection, inflammation, environmental factors, or genetic defect, and ... by an identifiable group of signs, symptoms, or both.
a) characterize b) is characterizing c) characterized d) has characterized e) characterizing
3. Arrhythmia is ... irregular or unpredictable ... heart beat.
a) an ... - b) an ... the c) the ... the d) the ... a e) the ... -
4. ... the risk of cardiovascular disease depend on blood pressure and coexistent risk factors?
a) has b) do c) does d) had e) is
5. There is ... continuous, strong, and graded relation between ... blood pressure and cardiovascular disease.
a) a ... a b) a ... the c) the ... a d) a ... - e) the ... the
6. Numerous factors definitely ... cardiovascular risk, including age, family history, raised cholesterol, smoking, diabetes, obesity, and sedentary lifestyle.
a) have increased b) increasing c) are increasing d) increased e) increase
7. The cardiac insufficiency designates a disease in which the heart muscle ... to such an extent that it is no longer capable of pumping the blood sufficiently through the blood vessels
a) weakened b) weakens c) is weakened d) weakening e) is weakening
8. The weak heart muscle ... the patients to feel symptoms that result from the fact that the heart is no longer capable of providing a sufficient blood supply for the body.
a) will cause b) to cause c) causes d) is caused e) had caused
9. Early symptoms of cardiac insufficiency are reduced physical fitness, shortness of breath during hard physical activity ... climbing stairs or exercising, water retention in ankles.
a) why b) when c) what d) where e) which
10. A palpitation describes the sensation that occurs when a patient ... an abnormality in the normal beat of the heart.
a) feels b) felt c) feeling d) is felt e) will be felt
11. Angina pectoris ... typically ... by physical activity.

a) had ... triggered	b) is ... triggering	c) has ... triggered	d) is ... triggered	e) will ... be triggered
12. Attacks ... in frequency to a fatal outcome or may gradually decrease or disappear.				
a) may increase	b) must increase	c) are to increase	d) were allowed to increase	e) should increase
13. Patients should be advised to seek an urgent medical help if their symptoms occur at rest or on minimal exertion and if they persist for more than 10 minutes after sublingual nitrate ... , as these may herald the onset of an acute coronary syndrome.				
a) to take	b) takes	c) has been taken	d) took	e) will be taken

STEP 2. VOCABULARY. TEXTS

1. Group words by parts of speech and underline their suffixes.

Various, biological, actually, equipped, bloodstream, undergo, severity, vulnerable, hospitalize, admittedly, total, message, radiation, favourable, sensitive, imbalance, incidence, once or twice, extremely, measure, disturbance, frequently, duration, characterize, improvement, ineffective, occasionally.

2. Group words with the same root.

Dilate, urgent, disturb, genetic, eliminate, unit, different, persist, union, eliminated, differ, recurrence, dilatation, disturbance, minimal, elimination, unite, difference, undilated, unity, irregular, unpredictable, gradually, fatal, disturbing.

3. Read and translate the following information.

Do you know that

1. At rest blood makes a complete circle in our body within 20-25 seconds? 2. Within 70 years of life the human heart contracts about 2.5 milliard times and pumps 145 million litres of blood? 3. At rest the human heart pumps 4 litres of blood per minute but on great physical exertion 40 litres? 4. The man can live without water for 10 days and without food for more than a month?

4. Remember the following words. Find their translation below.

Academician, biochemical, coronary, defect, manipulation, hypothalamus

Гіпоталамус, біохімічний, коронарний, маніпуляція, академік, дефект.

5. YOU CAN'T DO WITHOUT THIS VOCABULARY

Congenital - природжений	arrest – затримка; затримувати;
Failure – невдача; відсутність, брак (чого); порок, вада, дефект	зупиняти
heart failure – порок серця; зупинка	partial - частковий
	Damage – шкода, пошкодження;

серця; серцева недостатність fibrillation – фібриляція – стан, коли окремі групи м'язових волокон серця скорочуються розрізнено і нескоординовано defibrillation – дефібриляція – процес, зворотний фібриляції	пошкоджувати Result - результат Result in - закінчуватися (чим) Result from бути результатом (чогось) Incision - надріз Hypothermia - гіпотермія Occlusion - оклюзія, закупорка
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6. Read and translate the following words and word combinations.

1. **congenital:** congenital disease; congenital heart defect; to suffer from a congenital heart defect;
2. **failure:** heart failure, cardiac failure, circulatory failure, to reveal heart failure, to prevent the development of heart failure;
3. **fibrillation:** atrial fibrillation, ventricular fibrillation, defibrillation, defibrillator; fibrillation is the rapid, irregular, and unsynchronized contraction of muscle fibers;
4. **arrest:** arrest to the room, arrest of haemorrhage, partial arrest of blood circulation; to arrest growth;
5. **intricate:** an intricate problem, an intricate system, intricacy, the intricacy of form.

7. Read and translate Text A. Write a short summary of the text.

CARDIOSURGERY

Cardiac surgery, or cardiovascular surgery, is surgery on the heart or great vessels performed by cardiac surgeons. The operations on the heart are performed to eliminate the existing heart defects, congenital or developed, and to restore the normal function of the heart.

The operation on the heart is preceded by various examinations which enable the surgeon to make a correct diagnosis. The most important ones are listening to the heart, its X-ray examination, electrocardiograms, Ultra-sound examination of the heart, the revealing of heart murmurs, clinical and biochemical blood analyses. Only having made an exact diagnosis and having come to the conclusion that the therapeutic measures have been ineffective, the surgeon can perform the operation on the heart.

The operations on the heart are very difficult to perform because of the intricate anatomical structure of the heart and because the heart constantly contracts.

Some operations are performed on the contracting heart, but such operations give the surgeon only a very short period of time for his surgical manipulations. Besides in such cases there is always the danger of the impairment of cardiac functions such as heart failure, fibrillation and others. In the presence of these impairments complete or partial arrest of blood circulation develops.

Such intervals of blood circulation result in the damage to some organs, for example, the brain can live without blood supply only four-five minutes; if the interval is longer the brain cells die.

8. Put the paragraphs of Text B in the correct order. Read and translate the information about the history of cardiosurgery. What operations initiated this field of medicine? Were the first operations successful?

HISTORY OF CARDIOSURGERY

A. The first successful intracardiac correction of a congenital heart defect using hypothermia was performed by Drs. C. Walton Lillehei and F. John Lewis at the University of Minnesota on 2 September 1952. In 1953, Alexander Alexandrovich Vishnevsky conducted the first cardiac surgery under local anesthesia. In 1956, Dr. John Carter Callaghan performed the first documented open heart surgery in Canada.

B. 19th century

The earliest operations on the pericardium took place in the 19th century and were performed by Francisco Romero (1801), Dominique Jean Larrey (1810), Henry Dalton (1891), and Daniel Hale Williams (1893). The first surgery on the heart itself was performed by Axel Cappelen on 4 September 1895 at Rikshospitalet in Kristiania, now Oslo. Cappelen ligated a bleeding coronary artery in a 24-year-old man who had been stabbed in the left axilla and was in deep shock upon arrival. Access was through a left thoracotomy. The patient awoke and seemed fine for 24 hours, but became ill with a fever and died three days after the surgery from mediastinitis.

The first successful surgery on the heart, without any complications, was performed by Dr. Ludwig Rehn of Frankfurt, Germany, who repaired a stab wound to the right ventricle on 7 September 1896.

C. Also in 1948, four surgeons carried out successful operations for mitral valve stenosis resulting from rheumatic fever. Horace Smithy (1914–1948) of Charlotte used a valvulotome to remove a portion of a patient's mitral valve, while three other doctors—Charles Bailey (1910–1993) of Hahnemann University Hospital in Philadelphia; Dwight Harken in Boston; and Russell Brock of Guy's Hospital in London—adopted Souttar's method. All four men began their work independently of one another within a period of a few months. This time, Souttar's technique was widely adopted, with some modifications.

D. 20th century

Surgery on the great vessels became common after the turn of the century.

However, operations on the heart valves were unknown until, in 1925, Henry Souttar operated successfully on a young woman with mitral valve stenosis. He made an opening in the appendage of the left atrium and inserted a finger in order to palpate and explore the damaged mitral valve. The patient survived for several years, but Souttar's colleagues considered the procedure unjustified, and he could not continue.

E. Cardiac surgery changed significantly after World War II. In 1947, Thomas Holmes Sellors (1902–1987) of Middlesex Hospital in London operated on a Tetralogy of Fallot patient with pulmonary stenosis and successfully divided the stenosed pulmonary valve. In 1948, Russell Brock, probably unaware of Sellors's work, used a specially designed dilator in three cases of pulmonary stenosis. Later that year, he designed a punch to resect a stenosed infundibulum, which is often associated with Tetralogy of Fallot. Many thousands of these "blind" operations were performed until the introduction of cardiopulmonary bypass made direct surgery on valves possible.

9. Read Text C. Which of the described methods have you got interested in?

METHODS USED IN CARDIOSURGERY

In performing the operations on the contracting heart there is danger of the impairment of cardiac function and partial arrest of blood circulation, resulting in the damage to some organs, brain cells in particular.

Such danger is eliminated when artificial blood circulation apparatus called heart-lungs is used during the operation. By using the artificial blood circulation apparatus the heart is excluded from the blood circulation and the surgeon is able to work on the "dry" heart for a longer period of time achieving better results.

Hypothermia is another method used in heart operations. When the patient is under hypothermia, the surgeon can eliminate congenital or developed heart defects without the loss of the patient's blood during the operation.

The method of occlusion consists of bandaging all the vessels carrying blood to and from the heart just before making an incision on the cardiac wall. When the method of occlusion is applied the surgeon evacuates that amount of blood from the heart which is inside its cavities (in the adult it is about 100-150 ml) and performs the necessary operation.

Keys to exercise 8: 1 B, 2 D, 3 E, 4 C, 5 A.

UNIT 9. THE DISEASES OF THE ALIMENTARY TRACT

LESSON 22.

Граматика: Складений підмет
Тексти: Text A. Peptic Ulcers

STEP 1. GRAMMAR

1. А. Згадайте правила утворення і вживання складеного підмета.

COMPLEX SUBJECT СКЛАДЕНИЙ ПІДМЕТ		
Іменна частина Іменник в загальному відмінку або особистий займенник в називному відмінку	is said is known seems is sure likely	Дієслівна частина Інфінітив дієслова
Many scientists	are known	to study the problem.
A total of 120 type 2 diabetic patients	is reported	to participate in the study.
The patient	is likely	to recover soon.
The experiment	proved	to be a failure.

NB! Характерною рисою складеного підмета є те, що конструкція завжди розірвана. Українською мовою конструкція перекладається складнопідрядним реченням, в якому головне речення є неозначено-особовом, а підмет і присудок англійського речення стають підметом і присудком українського підрядного речення.

Many scientists are known to study the problem. - Відомо, що багато вчених вивчають цю проблему.

Змістове дієслово в конструкції може бути висловлено дієсловами в пасивному стані:

- що висловлюють міркування і сприймання: **to think, to believe, to know, to expect, to consider, to suppose, to hear, to see;**
- що висловлюють повідомлення: **to say, to report, to describe;**
- Дієсловами, що висловлюють наказ, прохання, пораду, дозвіл: **to advise, to allow, to ask, to order, to permit, to make (змушувати), to tell (веліти);**
- Дієсловами в дійсному стані: **to seem, to appear, to happen, to prove, to turn out;**
- Словосполученнями: **to be likely (ймовірно), to be sure (безумовно), to be certain (напевно).**

2. Прочитайте і перекладіть наступні речення зі складеним підметом.

1. On physical examination the liver was considered to be enlarged. 2. The damage to the blood supply was supposed to have been present before the operation. 3. Both mental and physical overstrain have been estimated to affect the normal function of the heart in the most unfavorable way. 4. ACE (Angiotensin-converting enzyme) inhibitors are known to reduce symptoms and improve prognosis. 5. They are said to do research in this field. 6. The patient was asked to come at 8 o'clock. 7. The professor is sure to come soon. 8. The derivatives of this substance are widely distributed in Nature and are reported to have a wide range of biological activities such as anticoagulants, anti-fungal, insecticidal, and hypnotic activities.

STEP 2. VOCABULARY. TEXTS

1. Read and memorize the following words. Find their translation below.

Ulcer, neurogenous, spastic, trophic, erosion, remission, pathogenesis.

спастичний, судомний; трофічний, живильний; патогенез (механізм і розвиток хворобливого процесу в організмі); невrogenний, нервового походження; ремісія, ослаблення хвороби, ерозія, роз'їдання; виразка; затихання хвороби, затихання хворобливих явищ.

2. YOU CAN'T DO WITHOUT THIS VOCABULARY.

Peptic ulcer - виразкова хвороба	perforate [/pɜːrfəreɪt] v пробивати, проникати (intro, through)
Gastric ulcer – виразка шлунку	perforated (perforating) ulcer - проривна виразка
Duodenal ulcer – виразка дванадцятипалої кишки	intermittent [ɪntər'mɪtənt] a - той, що перемежовується; переривчастий
To feel sick - відчувати біль	Exacerbation – загострення
sore in the lining – виразка в вистиланні шлунку	proton pump inhibitors – інгібітори протонової помпи
nausea and vomiting - нудота і блювання	

3.1. Read Text A. 2. Translate the following word-combinations: a sore in the lining; perforating ulcer; a chronic, cyclic course, with remissions; followed by erosion; intermittent in occurrence; haemorrhage resulting from sclerotic changes in the stomach. 3. Find the sentences containing Complex Subject, read and translate them. 4. Write a short summary of the text.

PEPTIC ULCERS

A peptic ulcer is a sore in the lining of the stomach or duodenum. If peptic ulcers are found in the stomach, they are called gastric ulcers. If they are found in the duodenum, they are called duodenal ulcers. Local trophic disturbances are followed by erosion of the affected area by the gastric juice. Many people have peptic ulcers. The most common symptom of peptic ulcers is known to be a

burning pain in the gut. The pain is felt like a dull ache, it comes and goes for a few days or weeks, starts usually two to three hours after a meal, may come in the middle of the night when the stomach is empty. The pain usually goes away after you eat. Pain due to ulcer is well known to occur periodically and be intermittent in occurrence. Other symptoms are losing weight, having pain while eating, feeling sick to your stomach, nausea and vomiting.

Ulcers are known to have a chronic, cyclic course, with remissions from 6 to 12 months. The course of ulcer has proved to vary with age and sex, location of ulcers, etc. At a young age its course has no characteristic clinical manifestations. In old persons the incidence of ulcers is known to be rare. But they are often complicated by considerable haemorrhage resulting from sclerotic changes in the stomach. Exacerbation of ulcers, particularly that of duodenal ulcers, has been found to occur in spring and autumn.

Peptic ulcers are considered to be caused by bacteria called *Helicobacter pylori*, or *H.pylori* for short. Non-steroidal anti-inflammatory drugs such as aspirin and ibuprofen are considered to cause peptic ulcers, too. Other diseases may also be a risk factor for occurring peptic ulcers.

Our body makes strong acids that digest food. A lining protects the inside of the stomach and duodenum from these acids. If the lining breaks down, the acids can damage the walls. Both *H.pylori* and non-steroidal anti-inflammatory drugs weaken the lining so acid can reach the stomach or duodenal wall.

Helicobacter pylori is supposed to cause two-thirds of all ulcers. Many people have *H.pylori* infections. But not everyone who has an infection will develop a peptic ulcer. Neither stress nor spicy food cause ulcers. But they can make ulcers worse. Drinking alcohol or smoking can make ulcers worse, too.

Peptic ulcers can be cured. Medicines for peptic ulcers are proton pump inhibitors or histamine receptor blockers to stop the stomach from making acids and antibiotics to kill the bacteria. Ulcers are known to take time to heal. The patients should take medicines even if the pain goes away. The patients may need surgery if their ulcers don't heal, keep coming back, or perforate, bleed, and obstruct the stomach or duodenum. Surgery can remove the ulcers and reduce the amount of acid the stomach makes.

1. According to the Text A, complete the following sentences.

1. Patients with perforated ulcers are known to complain of ... a) an acute pain in the stomach; б) a sharp pain in the substernal area radiating to the shoulder). 2. In old persons ulcers are complicated by haemorrhage which is due to... a) sclerotic changes in the stomach; б) an irregular diet in combination with a nervous overstrain) . 3. Peptic ulcers are caused by ... a) bacteria called *Helicobacter pylori*; б) bacteria called *Streptococci*. 4. The patients may need surgery ... a) if the patient don't stop smoking and drinking alcohol; б) if their ulcers don't heal, keep coming back, or perforate, bleed, and obstruct the stomach or duodenum.

LESSON 23.

Граматика: Складений підмет
Тексти: Text A. Chronic Gastritis

STEP 1. GRAMMAR

1.А.Прочитайте наступні речення, порівняйте їх з перекладом на українську мову і виконайте завдання:

He is said to live here. The patient is thought to suffer from pneumonia. Leucocytosis is known to develop in inflammation.	Кажуть, що він живе тут. Думають, що хворий страждає на пневмонію. Відомо, що лейкоцитоз розвивається при запаленні.
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☺ Дайте відповіді на питання і виконайте завдання: 1) Як переводяться речення зі складеним підметом?

Б. У наступних реченнях зверніть увагу на стан присудка:

They seem to study Biochemistry. He appears to suffer from tuberculosis. The pain proved to be sharp on physical exertion.	Здається, вони вивчають біохімію. Здається, він страждає на туберкульоз. Виявилось, що біль був гострим при фізичній напрузі.
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☺ Дайте відповіді на питання і виконайте завдання: 1. Знайдіть складений підмет в англійських реченнях. 2. Чи впливає на переклад форма інфінітива? 3. Яким часом і станом перекладається кожен з них?

В. Прочитайте та перекладіть наступні речення:

He is supposed to discharge the patient from the hospital. He is supposed to have discharged the patient from the hospital. He is supposed to be discharged from the hospital. He is supposed to have been discharged from the hospital.

2. Знайдіть складений підмет і перекладіть наступні речення.

1. He was thought to be an honest and kind man. 2. The manuscript is believed to be written in the 15th century. 3. This fire was certain to produce a panic. 4. Dr Symon was considered by many to be a great researcher. 5. People take an oath, a pledge, when they are married, and this is supposed to hold them together. 6. At thirteen he began to read books that were said to be evil. 7. You are sure to be there tomorrow night, aren't you, Professor Engelfield? 8. Complications are reported to be severe and interfere with everyday life. 9. Professor Lee was expected to join the expedition in the North Africa, but he had fallen ill. 10. The number of insomniacs seems to be growing rapidly in urbanized societies. 11. The answer to this question proved to be uneasy. 12. The French are considered to be the best kissers in the world!

3. Використайте підрядне речення замість Complex Subject.

1. Exacerbation of duodenal ulcers is known to occur in spring and autumn. 2. Renal and splenic infarctions are likely to occur in endocarditis. 3. Brain cortex stimuli are considered to send impulses to the stomach and duodenum. 4. According to certain data, the use of too hot or too cold food, smoking and using alcohol are considered to be responsible for the development of stomach carcinoma.

4. Використайте Complex Subject замість підрядних речень.

1. It was reported that the patient had been suffering from the digestion disturbances for several years. 2. It seems that pathologic changes in the gastric mucous membrane due to chronic gastritis are responsible for the development of malignant tumours of the stomach. 3. It was stated that the patient had developed anaemia after profuse bleeding caused by perforating ulcer.

STEP 2. VOCABULARY. TEXTS

1. Define the part of the speech of the words in bold and translate them.

1. Numerous **branches** of small vessels **branch off** the coronary vessels. 2. Some students of our group have made a **marked** progress in English that is why their **marks** are much better now. 3. A **bandage** was put on the arm **to bandage** the damaged blood vessel. 4. At six **sharp** the patient felt a **sharp** pain in the heart area. 5. The treatment **resulted** in wonderfully good **results**.

2. Supply the words of the same root.

Extensive, exist, node, evidence, various, characterize, contribution, bleed, support, response, impulsive, ulcerous, associate. preventive.

3. Recall and supply the most characteristic words to be used with the following nouns as attributes:

Tumour, bleeding, node, vomiting, ulcer, manifestations, onset, fever, failure

4. 1. Read Text A. 2. Name the factors contributing to the development of gastritis. 3. Say about what symptoms of gastritis you have learned from the text.

CHRONIC GASTRITIS

The term chronic gastritis must be limited to those cases in which evidences of inflammation or catarrhal changes in the stomach are clear.

Chronic gastritis is known to occur as a separate or primary disease or it may be associated with other diseases, particularly chronic liver and kidney diseases. In these diseases chronic impairment of the mucous membrane of the stomach is an important factor in causing the catarrhal condition.

The most important causes of chronic gastritis proved to be alcohol, inadequate food and a bad diet regimen. The characteristic clinical manifestations of gastritis are an increased secretion of mucus and a diminished secretion of acid and pepsin. In severe forms of gastritis secretion is observed to be completely reduced and even absent due to the lesion of the mucous membrane.

The most frequent symptoms of chronic gastritis are loss of appetite, slight pain and general epigastric discomfort after meals. In severe cases nausea and vomiting of mucus, particularly in the morning, are often observed. Frequently the stomach becomes moderately enlarged.

The course of the disease is chronic and the symptoms are continuous. They may become worse from time to time if a sick person does not follow the diet regimen strictly.

LESSON 24.

<p>Граматика: Складений підмет Тексти: Text A. Cancer of the Stomach Text B. Intestinal Tumours</p>
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STEP 1. GRAMMAR

1. Прочитайте і перекладіть наступні речення, звертаючи увагу на переклад конструкції складеного додатка і складеного підмета.

1. Doctors warn heart attacks to tend to cluster in families. 2. During that period, 62 children were found to be infected. 3. I heard beta-blockers be the drugs of choice in the therapy for chronic stable angina. 4. Beta-blockers were found to be effective in increasing quality of life in case of heart failure as well as hypertension. 5. The prevalence of masked hypertension in the general population has been reported to be around 10 to 20 per cent. 6. The clinical presentation of the condition is reported to range from asymptomatic patients to major abdominal catastrophes due to complications. 7. Pseudocysts tend to be more common in chronic as compared to acute pancreatitis. 8. The condition is known to develop after emergency hospital admission for an episode of acute pancreatitis. 9. The pathogenesis of the disease seems to stem from inflammation or trauma. 10. Gastric and biliary obstruction, thrombosis of the splenic or portal vein are believed to be chronic complications.

2. Поставте запитання до виділених частин речень.

1. Pain **intermittent** in occurrence is known to be characteristic of gastric or duodenal ulcers. 2. In the majority of cases **acute pain in the abdominal cavity** may be a clinical manifestation of perforated ulcer. 3. The course of ulcer has proved to vary with **age and sex, location of ulcers, etc.** 4. **If the lining of the stomach breaks down**, the acids can damage the walls. 5. Stress and spicy food

don't cause ulcers but they can make ulcers worse. 6. Surgery can **remove the ulcers and reduce** the amount of acid the stomach makes.

STEP 2. VOCABULARY. TEXTS

1. Remember the following words. Find their translation below.

Carcinoma, aetiology, malignant, tumor, epigastrium, epigastric, anaemia, peritonitis, metastasis, barium, degeneration, polyp.

Карцинома; етіологія, причини виникнення хвороб; пухлина; злоякісний; барій; поліп, патологічне доброякісне утворення на слизовій оболонці; перитоніт, запалення очеревини; анемія, стан, який характеризується зменшенням змісту гемоглобіну й еритроцитів в одиниці об'єму крові; надчеревний; дегенерація, морфологічний регрес, опрощення; метастаз, відокремлене вторинне вогнище, викликане переміщенням кліток пухлини.

2. YOU CAN'T DO WITHOUT THIS VOCABULARY.

Aetiology – етіологія	Digestion – травлення, засвоєння їжі
Malignant – злоякісний	Retention - затримка
Benign - доброякісний	Stool - випорожнення, стул
Tumor – пухлина	Tenderness – хворобливість
Anaemia – анемія	Dramatic – в дуже високій ступені;
Hereditary – спадковий	вражаючий; ефективний; яскраво
Node – вузол, наріст, потовщення	виражений; різкий, рішучий, крутий,
Indigestion -розлад травлення	радикальний; істотний

3. Distribute the following words and word-combinations by graphs.

Disease	Pathologic symptom
<i>angina pectoris, perspiration, murmur, intermittent fever, benign and malignant tumours, occlusion, dullness, crepitation, fatigue, ulcer, haemorrhage, epigastric pain, carcinoma, loss of appetite and weight, pleurisy, anaemia, fibrillation, vomiting, nausea.</i>	

4. Remember the words that are close in meaning.

1. disturbance; 2. to radiate; 3. to result in; 4. a damage; 5. continuous; 6. influence; 7. fever; 8. constant; 9. mild; 10. acute; 11. internal; 12. adequate; 13. onset; 14. to diminish; 15. anche; 16. to rise; 17. to involve; 18. carcinoma; 19. to nourish; 20. state; 21. bleeding; 22. to extend.

5. Remember the words that are opposite in meaning.

Gradually, to increase, to diminish, mild, internal, to be due to, to follow, onset, base, to accomplish, to be admitted, adult, to decrease, to disappear, to divide, dry, exertion, to rise, to improve, physical, cold, benign, to leave, to doubt.

6. Перекладіть речення, звертаючи увагу на прикметник “dramatic”.

1. *Dramatic advances* in biology promise to turn the 21st century into a golden era for new drugs that can test a wide range of diseases, from heart failure, arthritis, or depression to cancer. 2. Basic researches into the secrets of the cancer cell will suggest new and more *dramatic compounds* to find better ways to treat oncology. 3. The key to man's survival on earth seems to be a white rat. Most experiments being conducted these days to see what *dramatic effect* our environment has on human beings are first conducted on white rats. Only after we know what happens to white rats we take any action to protect the human race.

7. 1. Read and translate Text A. 2. Render the main idea of paragraph six. 3. Formulate five questions to the text.

CANCER OF THE STOMACH

(1) Gastric carcinoma is a frequent form of cancer causing 35-40% of all deaths from malignant tumours.

(2) This disease is more common in men than in women. The highest incidence is noted at ages of 50 to 60. Gastric carcinoma is known to have a more malignant course in young people than in the elderly. The duration of gastric cancer from the appearance of its first manifestations to death is not longer than 1-2 years.

(3) The aetiology of cancer is unknown. But such pathologic conditions as benign tumours, ulcer of the stomach, gastric and stomach polyps have been determined to contribute considerably to its development.

(4) According to certain data the consumption of too cold or too hot food, smoking, and alcohol are considered to be responsible for the development of stomach carcinoma.

(5) Recently, a virus theory of cancer has gained popularity with researchers, yet it has not been proved. For a long time scientists have been discussing the importance of hereditary factors in the development of cancer. The hereditary theory has not been confirmed by now as well.

(6) The clinical manifestations of gastric carcinoma vary with the stage of its development, location and spread through the lymphatic nodes and other inner organs. The main symptom of gastric carcinoma are known to be disturbance in gastric digestion, epigastric pains, loss of weight, and sometimes vomiting of blood. A prolonged, usually external, profuse bleeding results in severe anaemia. The appetite is usually reduced.

8. Translate Text B. Pay attention to word-combinations in bold. Can you translate and explain them?

DIAGNOSING AND TREATMENT OF GASTRIC CARCINOMA

In gastric carcinoma pain is felt in the epigastrium and the patient often complains of the feeling of pressure in the stomach area. Pain may become severe when the tumour involves the pancreas, in peritonitis, and **metastases** into the bones.

The gastric juice is known to contain much mucus, leucocytes and tumour cells.

In the majority of cases gastric secretion proves to be considerably reduced.

The X-ray examination is particularly important for the diagnosis of gastric carcinoma. It reveals **the so-called filling defect, when some areas of the stomach remain empty after barium meal has been taken.**

Preventive measures are carried out extensively to reveal the early signs of gastric cancer as well as an adequate therapy of ulcers and chronic gastritis which may result in **malignant degeneration.**

9. Read and translate Text C.

INTESTINAL TUMOURS

Many forms of tumours are known to occur in the intestines, but we shall limit our attention to the commonest, which is cancer. It generally leads to chronic intestinal obstruction and its accompanying symptoms. In addition there are usual symptoms of cancerous invasion - loss of weight and strength, progressive anaemia and pain of varying degree depending on the part affected. Any portion of the intestines is likely to be affected by carcinoma, but the usual areas are the upper part of the colon, the sigmoid and the rectum. In the latter situation the obstruction may be felt on rectal examination. In cancer of the colon and sigmoid a tumour is usually well palpable, the esophagus above the tumour is often thickened and spastic and spastic and peristaltic waves may be seen passing in the direction of the obstruction.

10. Say whether the following statements are true or false.

1. Gastric carcinoma is more common in men than in women. 2. The aetiology of cancer is usually well-known. 3. The scientists doubt if the consumption of too cold or too hot food, smoking, and alcohol are considered to be responsible for the development of stomach carcinoma. 4. Few scientists have been discussing the importance of hereditary factors in the development of cancer. 5. Recently, a virus theory of cancer has gained popularity with researchers. 6. The gastric juice is known to contain much mucus, leucocytes and erythrocytes. 7. The X-ray examination is not important for the diagnosis of gastric carcinoma. 8. Any portion of the intestines is likely to be affected by carcinoma, but the usual areas are the lower part of the colon, the sigmoid and the rectum. 9. Preventive measures are carried out extensively to reveal the early signs of gastric cancer.

LESSON 25.

Grammar: Revision.

Texts: Text A. Acute Appendicitis.

Text B. Appendectomy.

STEP 1. GRAMMAR

1. Визначте функції інфінітиву. Перекладіть речення.

1. No doubt chronic gastritis is one of the diseases to be responsible for the development of gastric carcinoma. 2. To reveal the early symptoms of malignant tumours is one of the measures contributing to their effective treatment. 3. In the patients with ulcer pain is known to have cyclic character with periodic remissions. 4. The X-rays of the patient showed enlarged liver and spleen too; esophageal system, stomach and duodenum seemed to look normal.

2. Виберіть час і стан для дієслова- присудка в дужках.

1. The 47-year-old man became insensible as a result of drinking; according to his past history he (to treat) for hepatic failure in a small town hospital. 2. I just (to examine) your patient, a school teacher; she has been on the nervous side all her life and my diagnosis is the same as yours: spastic colon. 3. Your treatment is very effective and your vital signs (to improve) greatly of late, so follow the treatment you're placed on and you'll be much better soon. 4. My mother (to say) that it didn't do to go on drinking such a lot of medicine. 5. The patient (can eat) something wrong (disagreeable) and got a severe stomachache and diarrhea. 6. Medical experience knows the cases when people who were regarded clinically dead (to return) to life and are still alive. 7. Many schoolchildren and students are seriously dehydrated during the day, leading to tiredness, irritability, headaches and impaired concentration as well as increased risk of other ills. 8. No wonder, researchers have great hopes for green tea – it (to load) with powerful anticancer agents like polyphenols, which, in the lab at least, inhibit proliferation.

STEP 2. VOCABULARY. TEXTS

1. Supply the words with the same root.

Extensive, esixt, node, evidence, inflame, various, characterize, contribution, bleed, support, response, impulsive, ulcerous, associate, preventive, entensive.

2. Remember the words that are close in meaning.

To affect, to cause, to decrease, acute, slight, damage, to rise, to perforate, to spread, to enlarge, tired, risk, permanent, spastic, agent, alive, proliferation.

3. Remember the words that are opposite in meaning.

Onset, gradually, exertion, to precede, internal, malignant, moist, irritability, frequent, to improve, agreeable, strength, dehydrated, to result in, effective.

4. Say the following word-combinations in a word.

The decrease of the red blood cell count; a physician who treats the heart diseases; the causes that produce the development of a certain disease; the mechanism of the development of a disease; the inflammation of the internal serous coat of the abdominal cavity; artificial cooling of the body; the state of the organism when a person is neither well nor ill; an increase of the white blood cells; the procedure which involves drinking a contrast solution; a pathogenic agent's spread from the initial or primary site to a different or secondary site within the body.

5. Complete the sentences in Appendicitis Facts.

1... is a narrow tubular pouch attached to the intestines. 2. When the appendix is blocked, it becomes inflamed and results in 3. If the blockage continues, the inflamed tissue becomes infected with ... and begins to die from a lack of blood supply, which finally results in the rupture of the appendix (perforated or ruptured appendix). 4. An American Journal of Epidemiology study found that appendicitis was a ... condition affecting approximately 6.7% of females and 8.6% of males. 5. Individuals of any age may be affected, with the highest ... occurring in the teens and twenties; however, rare cases of neonatal and prenatal appendicitis have been reported. 6. Increased vigilance in recognizing and treating potential cases of appendicitis is critical in the very young and elderly, as this population has a higher rate of 7. Appendicitis is the most common condition requiring emergency abdominal

6. Read Text A. Put the paragraphs of the Text A in the correct order. Read and translate the information about the attack of acute appendicitis. Do you know how the operation for appendicitis is called?

ACUTE APPENDICITIS

A. The temperature is normal or subfebrile and there is moderate leukocytosis. The ESR is initially normal. With the development of the disease temperature elevation is observed and ESR becomes increased. The pulse is quick but it is found to be not more than 90-100 beats per minute. the tongue is coated and dry. The attack of acute appendicitis is known to last for 3-4 days. Then the temperature returns to normal, abdominal pains decrease and only a moderate tenderness is felt in the right lower part of the abdomen on palpation.

B. Acute appendicitis is treated surgically. The operation is performed not under general but under local anaesthesia.

The appendix is removed immediately to prevent its rupture which may result in peritonitis. Such forms of appendicitis as gangrenous and perforating are particularly dangerous to life. But sometimes even a mild form of appendicitis is likely to have a severe course and to result in perforation.

C. Acute appendicitis is known to occur in all age groups. Its incidence varies in different sex groups; it is more frequent in women from 20 to 40 years of age. Cases of appendicitis have been noted to occur even in infants and in very old age. Acute appendicitis is known to begin suddenly with sharp pain which is at first felt in epigastrium but then becomes generalized in the abdomen. The pain becomes worse on deep breathing in and coughing, it does not radiate and is accompanied by nausea, retention of stools and gases.

7. Read and translate Text B. Five sentences have been removed from the text. Choose from the sentences A-E the one which fits each gap (1-5).

APPENDECTOMY

Appendectomy is the surgical removal of the appendix. (1) An infected appendix, called appendicitis, can burst and release bacteria and stool into the abdomen.

Appendicitis Pain

Pain can be different for each person because the appendix can touch different organs. (2) Most often pain starts around the navel and moves to the right lower abdomen. The pain is often worse with walking or talking. In the elderly, symptoms are often not as noticeable because there is less swelling.

The Appendix

The appendix is a small pouch that hangs from the large intestine where the small and large intestine join. If the appendix becomes blocked and swollen, bacteria can grow in the pouch. (3)

Appendicitis

Appendicitis is an infection of the appendix. (4) This leads to tissue death, and the appendix can rupture or burst causing bacteria and stool to release into the abdomen. A ruptured appendix can lead to peritonitis, which is an infection of the entire abdomen. Appendicitis affects 1 in 1,000 people, most often between the ages of 10 and 30 years old.

Syptoms

- Stomach pain that usually starts around the navel and then often moves to the lower right side of the abdomen.
- Loss of appetite.
- Low fever.
- Nausea and sometimes vomiting.
- Diarrhea or constipation.

Treatment Options

Surgery

Laparoscopic appendectomy. The appendix is removed with instruments placed into small abdominal incisions.

Open appendectomy. The appendix is removed through an incision in the lower right abdomen.

Nonsurgical

Surgery is the only option for an acute (sudden) infection of the appendix.

Benefits and Risks

An appendectomy will remove the infected organ and relieve pain. Once the appendix is removed, appendicitis will not happen again. The risk of not having surgery is the appendix can burst resulting in an abdominal infection called peritonitis. (5)

Expectations

If the patient has no complications he usually can go home in 1 or 2 days after a laparoscopic or open procedure.

A	The infection and swelling can decrease the blood supply to the wall of the appendix.
B	Possible complications include abscess, infection of the wound or abdomen, intestinal blockage, hernia at the incision, pneumonia, risk of premature delivery in pregnant, and death.
C	The cause of infection can be from an illness, thick mucus or hard stool trapped in the opening of the appendix, or parasites.
D	This can be confusing and make it difficult to diagnose appendicitis.
E	The operation is done to remove an infected appendix.

Keys to exercise 7: 1 E, 2 D, 3 C, 4 A, 5 B.

LESSON 26.

Grammar: Revision.

Texts: Text A. Peritonitis.

Text B. Scalpel, Suture, iPod

STEP 1. GRAMMAR

1. Перекладіть наступні речення і визначте в них: 1) підрядні речення; 2) дієприкметниковий зворот; 3) складений підмет.

1. Scientists said the odd glass of wine was good for you protecting against myriad illnesses including heart attacks and strokes. But now an international team of “scientific killjoys” has thrown cold water on this theory. According to the study of

4,500 volunteers, it's the way wine lovers live, rather than the alcohol they drink, that is responsible for the reported health benefits.

2. New research shows that we are taking longer and longer to reach maturity; less than a third of 30-year-olds can now be classified as adults, based on the criteria of having completed their schooling, left home and become financially independent.

3. Britain's couch-potato children are living such unhealthy lives that they could start predeceasing their parents. In Britain, one in ten at primary school is now obese, and this figure is reported to rise to 15 per cent among school leavers.

2. Виберіть артикль.

Word vegetarian was coined in about 1840 to mean (*a/-*) people who lived without killing for food, either for moral or health reasons, or both. But (*a/the*) practice is much elder than that. Many Eastern religions have always recognized (*a/the*) great importance of all life and the need to live without causing suffering. Greek philosophers recommended (*a/-*) vegetarianism and famous people who have practised it include Leonardo da Vinci, Voltaire, Sir Isaac Newton, Bernard Show. Surely this proves that mental activity does not depend on flesh-foos. What then are the argument that might stop us eating (*the/-*) meat?

3. Виберіть сполучник *what, which, where, when, if, why*.

For millions of years Man must have lived on fruits, nuts, grains and leaves and so developed that kind of digestive system ... we have now. Perhaps, the more we get away from this diet towards meat-eating, the less likely we are to be healthy. Cancer, tuberculosis and heartd diseases are certainly more common in meat-eating communities. But ... it is so unnatural for Man to have an omnivorous diet, ... do we eat (and enjoy!) meat at all? One theory is that Man may have started eating the flesh of animals during the Ice Ages ... most of the vegetation was destroyed.

4. Виберіть час і стан дієслова-присудка в наступних реченнях.

Vegetarians claim that the basic food elements which we need to grow and be healthy (to come) from the earth, air and water through vegetation. Therefore they (to argue) that by eating meat we are getting these foods second-hand after they (to digest) by the animal. Meat generally (to think) to be a "first-class" protein, but in fact it (to contain) more water than protein, and is a very poor source of all the other food elements – minerals, vitamins and carbohydrates. According to soya-lovers, it has more of all the essential amino-acids, and (to be) cheaper.

STEP 2. VOCABULARY. TEXTS

1. Supply one of known to you words of the same root. Make up sentences to illustrate the using of these words.

Appear, tender, danger, cheap, occur, digest, love, philosophy, essence, importance, manifest, natural, bleed, practice, certain, vegetation, health.

2. Explain the following terms.

Hypothermia, leukocytosis, a causative agent, anaemia, malaise, pathogenesis, aetiology, appendectomy, metastasis.

3. Read and translate Text A.

PERITONITIS

Peritonitis is known to be general or localized, acute or chronic, primary or secondary.

Acute general purulent peritonitis is believed to be due to perforation of one of the hollow abdominal organs. The most frequent cause are perforating appendicitis, inflammatory conditions of the female sex organs and perforating gastric or duodenal ulcers.

The main symptoms of this condition are vomiting, pain and tenderness in the abdomen, it being considerably enlarged due to the presence of fluid there. The temperature is known to be moderately elevated, the pulse rate being considerably changed. The blood analysis usually reveals leukocytosis.

This condition is extremely dangerous to the patient's life, an emergency surgery being performed to relieve it. During the operation the primary focus of peritonitis is to be removed, the danger for the patient being eliminated.

Emergency operative treatment is known to be followed by a course of antibiotic treatment, which greatly contributes to the recovery.

4. Which words go together in the text?

Organ, peritonitis, cause, symptom, condition, focus, appendicitis, treatment
<i>general, main, frequent, abdominal, perforating, localized, hollow, inflammatory, acute, purulent, dangerous primary, operative</i>

5. Read and translate Text B.

SCALPEL, SUTURE, IPOD

Like most of modern life, surgery has acquired a soundtrack. Surgeons say music relaxes them and focuses their attention, and recent research shows that there are also mild benefits for the patient.

Some doctors choose loud rock'n'roll for routine operations and Mozart for trickier ones; others prefer jazz, reggae, or opera. There is even a category known as "closing music" – raucous sounds to suture by.

Many operating rooms come equipped with a sound system, and surgeons often plug their iPods into speakers. Patients may be given headphones.

Brian Jacob, a surgeon at Mount Sinai Hospital in New York, says music helps everyone in the operating room. “You’re basically sending a message to the people around you that it’s a cool place to be,” he says. “I found I get a lot done when I have U2 in the background.” Jacob sometimes asks patients for requests, but they usually say that whatever is on is fine: “They want me happy.”

6. Answer the questions on the text.

1. What do surgeons say about operating on to music?
2. Does music influence both the surgeon and the patient? In a what way?
3. Do surgeons choose some special music for every kind and stage of operation?
4. Do patients want to listen to the music like surgeons?
5. Could an operating room become a cool place to be if some music is heard?
6. If you were a surgeon, what music would you like to have as a soundtrack?
7. If you were a patient, what music would you ask to listen to?
8. If you were on the operation table, would you like your surgeon to be happy?

UNIT 10. THE DISEASES OF THE LIVER AND BILE DUCTS

LESSON 27.

Граматика: Незалежний дієприкметниковий зворот.

Тексти: Text A. Botkin’s Disease.

Text B. Hepatitis.

Text C. Symptoms of Diseases of the Liver and Bile Ducts

STEP 1. GRAMMAR

1. Прочитайте речення, дайте відповіді на запитання і виконайте завдання.

a) **Suffering from a severe pain**

I called in a doctor.

b) **My friend suffering from a severe**

pain, I called in a doctor.

☺ 1. Знайдіть підмет, загальний для обох речень. 2. Знайдіть в реченнях присудок. 3. Якою не особовою формою дієслова є слово «suffering» у реченнях? 4. Яку синтаксичну функцію виконує слово “suffering” у реченнях? 5. Перекладіть речення (а) і скажіть, хто страждав від сильного болю і хто викликав лікаря. 6. Хто страждав від сильного болю і викликав лікаря в реченні (b)? 7. Отже, чим може служити підмет “my friend” у відношенні до дієприкметника “suffering”, і як краще перекласти дієприкметник?

2. Знайдіть незалежний дієприкметниковий зворот.

1. There being profuse external haemorrhage, the patient was immediately taken to the hospital. 2. The ambulance having brought the patient to the reception ward, the nurse on duty recorded the patients’s initial data. 3. The digestion being

considerably impaired, the patient constantly complained of epigastric pains. 4. The perforated ulcer of the stomach being suggested, the X-ray examination of the stomach was made immediately. 5. The abdomen protective muscular tension having been clearly observed, the presence of acute peritonitis was confirmed. 6. The premedication having been over, the anaesthetist began giving intratracheal anesthesia. 7. The abdominal incision having been made and the stomach opened, the ulcer was found to involve the posterior wall of the stomach. 8. The stomach being lifted up, the perforated ulcer 0.5 cm in diameter was found on the posterior side in the lower portion of the stomach.

3. В речення з незалежним дієприкметниковим зворотом не вистачає деяких компонентів. Доповніть речення і перекладіть.

1. The patient's condition ... better, he was allowed to sit up.
2. The procedure ... over, the nurse left the ward.
3. The surgeon ... out, I could not talk to him.
4. The retention of stool ... noted, the patient was administered a light diet.

4. Наведіть приклади вживання дієприкметників в наступному тексті.

Beethoven's medical secrets could be revealed many years after his death. Two Americans – scientist Dr Alfredo Guevara and retired property agent Ira Brilliant – paid £5,000 for a lock of the composer's hair planning to subject it to the latest scientific tests. Historical records suggest Beethoven continued composing despite suffering from a variety of ailments including cirrhosis of the liver, kidney stones, venereal disease and deafness. Until now nothing has been certain, however, because his doctors burned his medical records after he died in 1827 at the age of 56.

STEP 2. VOCABULARY. TEXTS

1. Read and memorize the following words. Find their translation below.

Liver, hepatitis, hepatic, virus, viral, infection, infectious, infective, hypochondrium, sclera, umbilical.

вірус, печінка; інфекція; заразний; печінковий; заразний, інфекційний; вірусний; гепатит; пупковий; склера, білкова оболонка ока; підребер'я.

2. YOU CAN'T DO WITHOUT THIS VOCABULARY

bile duct – жовчний проток jaundice – жовтуха; жовтяничність catarrh – катар, запалення слизової оболонки elderly – похилого віку survive – вижити, пережити	subsequent - наступний simultaneous - одночасний incubation - інкубація prodromal period – продромальний період Virus A hepatitis - гепатит вірусу А
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entire - цілий, суцільний; повний, цілковитий	critical - критичний, вирішальний, небезпечний
blood transfusion – переливання крові	to enter the body -надходити в організм
nodular – вузликотий	parenterally - парентерально
inadequately - недостатньо	

2. Read and translate the following words and word combinations.

1. **jaundice:** severe jaundice, to suffer from severe jaundice, jaundice was clearly marked;
2. **survive:** to survive an injury, the patient survived the operation well, some viruses survive at a high temperature, the last survivor;
3. **critical:** critical moment, the critical stage of the disease; critical condition
4. **inadequately:** inadequate, the patient was given an inadequate dose of medicine; inadequately treated;
5. **subsequently:** subsequent, subsequent examination, to invade other organs subsequently;
6. **simultaneously:** simultaneous, simultaneous impairment, to be impaired simultaneously.

4. Translate the words with the same root.

Obstruction, obstruct, obstructive; survive, survivor; suggest, suggestive, suggestion; contribute, contribution, contributor.

5. Give the words of the close meaning.

To put forward, origin, whole, at the same time, to stay alive, in a wrong way, some time later, rather old, quite easily.

6. Read Text A. Find and translate the sentences containing: a) The Absolute Participle Construction; b) participle construction; c) Complex Subject; d) construction “it is ... that” . Translate the text.

BOTKIN'S DISEASE

Botkin's disease, or so called epidemic or infectious hepatitis is an acute viral disease affecting hepatic cells and bile ducts.

The prominent German scientist Virchow believing it to be due to obstruction of the common bile duct with mucus during inflammatory processes in the duodenum, the disease was called catarrhal jaundice.

But in 1880 the prominent Russian scientist Sergey Botkin advanced the idea of an infectious origin of this disease. He proved his suggestions by such facts as the involvement in the pathological process not only of the liver but also of the nervous system, the kidneys, the spleen, etc. But it was not before 1940 that the term “Botkin's disease” was introduced into medicine.

Botkin's disease occurs in epidemic form. This disease more commonly affects children, adults as well as elderly persons suffering from it frequently too.

Botkin's disease is known to be due to a filterable virus present in the blood, liver and found in stool and urine. The virus is infective only for man. As this virus can not be seen under a usual microscope, it is revealed only by an electronic one. Being highly infective, the virus survives in water, food, and on hands for days and weeks.

7. Find the equivalents of the following words and word-combinations in the text.

Закупорка загального жовчного протока; гостра вірусна хвороба; процеси запалення в дванадцятипалій кишці; катаральна жовтуха; залучення в патологічний процес; інфекційне походження хвороби; в епідемічній формі; хвороба уражає дітей; запальні зміни; дегенерація печінкових клітин; вірус присутній в крові.

8. Read Text B. Say how infection spreads in this disease. Put 10 questions to cover the text.

HEPATITIS

Hepatitis refers to an inflammatory condition of the liver. Your liver is located in the right upper area of your abdomen. It performs many critical functions that affect metabolism throughout your body. Hepatitis is commonly caused by a viral infection, but there are other possible causes of hepatitis. These include autoimmune hepatitis and hepatitis that occurs as a secondary result of medications, drugs, toxins, and alcohol.

The source of virus is a sick person who may spread the infection by personal contact from the last days of the incubation period during the entire course of the disease. But the infection is particularly virulent in the prodromal period and in the first week of the disease. The patient's blood being highly infective, even a small dose of 0.1 ml may be dangerous for a person.

In case of Virus A hepatitis infection enters the body through the mouth when eating infected food or drinking water. In case of Virus B hepatitis infection enters parenterally during transfusions of blood, plasma or serum, prophylactic vaccinations or is due to inadequately sterilized instruments.

Epidemic (Virus A) hepatitis most commonly occurs late in autumn, early in winter, or in spring. The incubation period lasts from 14 to 28 days, but in Virus B hepatitis it is from 2 to 6-8 months. Symptoms of hepatitis A range from mild to severe, and can include fever, malaise, loss of appetite, diarrhea, nausea, abdominal discomfort, dark-coloured urine and jaundice. Not everyone who is infected will have all of the symptoms. Adults have signs and symptoms of illness more often than children, and the severity of disease and mortality increases in older age groups.

Who is at risk? Anyone who has not been vaccinated or previously infected can contract hepatitis A. Risk factors include poor sanitation, lack of safe water, injecting drugs, living in a household with an infected person, being a sexual partner of someone with acute hepatitis A infection and travelling to areas of high endemicity without being immunized.

Botkin's disease causes inflammatory changes and degeneration of hepatic cells and damage to the bile ducts due to which bile enters the lymph flow and subsequently the blood. The tissues of the spleen, gallbladder and the nervous and endocrine systems become involved simultaneously with the liver.

9. Answer the following questions.

1. What do pathogenic microorganisms do in the human body during the period of incubation? 2. When is the infection particularly virulent? 3. Is the patient's blood dangerous for other people? 4. In what way does the Virus A hepatitis enter the human body? 5. In what way does the Virus B hepatitis enter the human body? 6. What seasons are common for epidemic hepatitis? 7. Can you describe the course of Botkin's disease?

10. Read Text C. Say what the doctor must pay particular attention to while examining a patient whose condition is suggestive of liver or bile duct disease.

SYMPTOMS OF DISEASES OF THE LIVER AND BILE DUCTS

Physician is taking the patient's medical history, he must pay attention to the patient's working and living conditions, the diet which the patient follows, the history of past diseases, particularly of those of the alimentary tract, and the condition of the nervous and endocrine systems, because a hepatic disease is often directly associated with these factors.

For example, overeating, particularly of fatty foods, alcoholism may sometimes suggest the diagnosis of the fatty degeneration of the liver. A persistent lesion of the liver may be observed after Botkin's disease and in chronic infections. Involvement of the liver and bile ducts is often found after gastrointestinal diseases, gastritis being one of them.

The patient's complaints of loss of weight, pain in the right hypochondrium and abdominal enlargement may contribute to the proper diagnosis of the diseases of the liver and bile ducts. Among the characteristic symptoms of a hepatic disease are a yellowish colour of the skin, sclerae and of the mucous membranes of the oral cavity, dilatation of the veins in the umbilical area, tenderness in the left and right hypochondrium.

Palpation and percussion of the liver and spleen may supply important evidence for a diagnosis. The size of the liver may be enlarged or contracted, it may be soft or firm, its surface may be nodular, the lower border may be sharp – all these findings enable the physician not to doubt an adequate diagnosis.

LESSON 28.

Граматика: Незалежний дієприкметниковий зворот.

Тексти: Text A. Acute Cholecystitis.

Text B. Jaundice.

STEP 1. GRAMMAR

1. Прочитайте речення, звертаючи увагу на незалежний дієприкметниковий зворот і його переклад.

1. The majority of the patients with hepatitis were between the ages of 41 and 55 years, the highest incidence of the disease being between 46 and 50 years. 2. Of the total number of the patients forty-eight have been relieved of digestive symptoms, four having died of other pathologic conditions. 3. Three patients have had symptoms of recurrence, one having died of a gastro-intestinal bleeding. 4. The amount of phosphorus being small in food, children may develop general health impairment. 5. The patient developed severe haemorrhage, it being cause by the perforating duodenal ulcer. 6. The patient having developed hepatitis, severe jaundice was clearly marked.

2. Перекладіть наступні речення. Назвіть речення з незалежним дієприкметниковим зворотом.

1. The patient was known to be have been operated on for gangrenous appendicitis a year before his admission to the hospital. 2. Gastric and duodenal ulcers having been proved to result from disturbances in the central nervous system, the corticovisceral theory of the pathogenesis of ulcer was developed. 3. The physician did not expect the tissues of the spleen and gallbladder to become involved simultaneously with the liver. 4. Being followed by erosion of the affected area of the stomach, spastic contractions of vessels result in trophic disturbances of this organ. 5. The patient having survived the operation well, the danger of peritonitis was eliminated. 6. The patient had to follow a strict diet to prevent the recurrence of the bile duct obstruction and jaundice.

3. Використайте дієслова в дужках в необхідній формі часів групи Indefinite. Перекладіть речення.

1. Products of protein, fat, and carbohydrate digestion (to be absorbed) from the gastrointestinal tract by the liver in which they (to undergo) further chemical processes. 2. The liver (to destroy) toxic substances which usually (to be formed) in the intestinal tract as well as some poisons which (to enter) the body. 3. Jaundice (to be known) to be the disease which (to be due to) the presence of a large amount of bilirubin in the blood and tissues.

4. Виберіть необхідну форму Infinitive. Перекладіть речення.

1. The patient was known ... stool retention accompanied by nausea a month before his present admission to the hospital. (to have/to have had/to be having). 2. Sensitivity to antibiotics was reported ... not only in this patient but in all the other members of the family. (to be present/ to have been present). 3. Prophylactic vaccination was found ... since no cases of hepatitis were diagnosed after its administration. (to be effective/ to have been effective). 4. Skin irritation was revealed ... after each parenteral administration of this preparation. (to occur/to have occurred/to be occurring).

STEP 2. VOCABULARY.

Read and translate the following words and sentences.

1. **Incubation:** Incubation period is the time during which pathogenic microorganisms grow in the body.
2. **Prodromal:** Prodromal period is the time when the characteristic symptoms of an infectious disease have not appeared yet, but the patient feels a general malaise.
3. **Parenterally:** All intramuscular and intravenous injections are given parenterally, i.e. directly into the organism (not orally).
4. **Serum:** Serum is the watery fluid which remains after blood has coagulated.
5. **Anaemia:** Anaemia means that you have fewer red blood cells than normal or you have less haemoglobin than normal in each red blood cell. In either case, a reduced amount of oxygen is carried around in the bloodstream. Common symptoms include tiredness, having little energy (lethargy), feeling faint and becoming easily breathless. Less common symptoms include headaches, a 'thumping heart' (palpitations), altered taste, and ringing in the ears (tinnitus). You may look pale.

2. Choose equivalents of the words in bold.

1. In this country prophylactic vaccination is carried out against a number of infectious diseases (preventive/supportive).
2. Before making a blood transfusion the blood group is to be determined (to be obtained/to be established).
3. Jaundice may result from the impairment of the common bile duct (to be due to/to result in).
4. The pain was stated to radiate to the left arm and shoulder (to spread to/to lead to).
5. The temperature was known to have risen suddenly at the onset of the attack (to have decreased/to have elevated).
6. The incidence of this disease varies in different age groups (changes/exchanges).

3. Read and memorize the following words. Find their translation below.

Cholecystitis, intrahepatic, extrahepatic, hypochondrium, umbilical, peritoneum, chemotherapy.

Хіміотерапія, підребер'я, холецистит, брюшина, запалення жовчного міхура, пупковий, позапечінковий, внутрішньопечінковий.

4. YOU CAN'T DO WITHOUT THIS VOCABULARY

catarrhal	cholecystitis	–	abnormality – ненормальність
катаральний	холецистит		constipation - запор
purulent	cholecystitis	- гнійний	clinical manifestation – клінічний прояв
холецистит			irritation – подразнення
gangrenous	cholecystitis	-	approximately - приблизно
гангренозний	холецистит		sclera - склера

5. Read and translate Text A. Say what diseases are accompanied with jaundice. Find the equivalents to the following words and word combinations:

приймати жовтуватий колір, сильний свербіж (сверблячка), в запущених випадках, звичайне ускладнення, схильність до кровотечі, носова кровотеча, симптом загальний для багатьох печінкових порушень і хвороб, забарвлений жовцю.

ACUTE CHOLECYSTITIS

Among inflammatory diseases of bile ducts the most frequent is cholecystitis or the inflammation of the gallbladder. Cholecystitis is known to occur rarely in isolated condition, inflammatory processes both in the intrahepatic and extrahepatic ducts, sometimes with the involvement of the liver being associated with it. The main forms of cholecystitis are the following: catarrhal, purulent and gangrenous.

The patient with cholecystitis is known to complain of intense pain, it being localized in the right hypochondrium and in the umbilical area. An attack of pain is usually preceded by physical and mental overstrain, sharp physical movements or abnormalities in diet, fatty food and alcohol being responsible for the onset of pain. But sometimes pain is observed to appear suddenly in quite healthy persons. Pain may radiate to the right shoulder, right arm, sternum, and lumbar area, its intensity depending on the form of cholecystitis and the patient's sensitivity. The pain grows much worse when the patient is lying on his right side.

Dryness in the mouth, vomiting, nausea, and constipation are the characteristic clinical manifestations of the disease.

During the attack of pain the face is moist with cold perspiration, the skin is pale, the tongue and lips are dry. Even a slight palpation reveals severe tenderness, it being due to irritation of the peritoneum. Approximately in 40-50% of cases there is slight jaundice of sclerae. The biochemical blood analysis is known to reveal some changes, they resulting from the effect of toxic substances in the liver.

Purulent form of cholecystitis is highly dangerous to life and requires an emergency operation. An even more severe course is observed in gangrenous cholecystitis. Recovery is achieved by surgical treatment, it being followed by prolonged antibiotic therapy and chemotherapy.

6. Read and translate Text B.

JAUNDICE

Jaundice is a symptom common to many disturbances and diseases of the liver, such as obstruction of the bile ducts, cancer, etc. In jaundice the skin and the sclerae take on a yellowish colour which may vary in its intensity. Even the serum of the blood is bile coloured. Jaundice is frequently accompanied by severe itching. The pulse is usually slow, and there is a tendency to haemorrhage. In advanced cases nervous symptoms may develop. Jaundice being caused by obstruction, the bile cannot pass to the intestines and the stools are of a white colour. The urine is deeply coloured. In toxic jaundice the stools may be of normal colour or deeply bile coloured.

Infectious jaundice in adults has been found to be due to a virus. It is characterized by fever, vomiting, jaundice and haemorrhage from the nose, intestines, etc. Jaundice is not an uncommon complication of pneumonia.

LESSON 29.

Граматика: Незалежний дієприкметниковий зворот.

Тексти: Text A. What Is Diabetes?

Text B. Hepatic Damage Due To Chemotherapy

STEP 1. GRAMMAR

1. Визначте, який сполучник відсутній. Перекладіть речення.

1. When the urinalysis was ready the physician received all the findings he had insisted on. 2. The surgeon considered the appendix had to be removed immediately because its rupture might cause peritonitis. 3. Almost everything the physician had determined by physical methods of examination was confirmed by laboratory findings. 4. In all the patients except the one the cardiologist has not yet examined the diagnosis of cardiac insufficiency was made. 4. I felt an unbearable pain in the lower part of the abdomen, it increasing on the slightest physical exertion. 5. My brother being operated on for appendicitis successfully, his post-operative course was uneventful.

2. Виберіть необхідну форму дієприкметника для незалежного дієприкметникового звороту. Перекладіть речення.

1. The abdominal pain ... by nausea and vomiting of 20 hours' duration, the patient was hospitalized for an emergency surgery. (*accompanied/being accompanied/ having accompanied*). 2. There ... permanent dryness in the mouth, nausea, and constipation, the diagnosis of acute cholecystitis may be suggested (*being/been/having been*). 3. The severity of jaundice ... , a considerably elevated amount of bilirubin was found in the blood on the following analysis. (*increasing/*

being increased/ having increased/ having been increased). 4. The postoperative course was smooth for a week, no recurrence of bleeding ... (*observed/being observed/havingobserved/having been observed*).

3. Перекладіть наступні речення з **Complex Subject**.

1. Jaundice is known to be present in the disease of liver as well as in the diseases of intrahepatic and extrahepatic ducts. 2. The characteristic clinical manifestations of gastric carcinoma are known to be epigastric pains, loss of weight, nausea and vomiting of blood. 3. Too hot food is supposed to contribute to the development of gastritis.

4. Виберіть час і стан для дієслова-присудка в наступних речення.

1. Diabetes mellitus (*to be*) one of the main threats to human health and is third on the list of killers after insults and cardiac diseases. 2. What perhaps people (*to know*) is that diabetes is to blame for $\frac{3}{4}$ of tumors, $\frac{1}{2}$ of all heart attacks and for five of every six leg amputation. 3. It's the body's resistance to insulin but not high levels of glucose that (*to cause*) diabetes. 4. Ulcers are known (*to have*) a chronic, cyclic course, with remission from 6 to 12 months. 5. Jaundice, also known as icterus, is a term using (*to describe*) a yellowish tinge to the skin and sclerae. 6. Jaundice most often (*to occur*) as a result of an underlying disorder. 7. Bilirubin is a waste product that (*to remain*) in the bloodstream after the iron is removed from the hemoglobin. 8. Downing a cup of coffee (*to increase*) bile flow, which in turn limit the development of stones in the gallbladder. 9. People who have gallstones but (*to have*) any symptoms may need no treatment. 10. The main treatment for acute cholecystitis (*to be*) the removal of the gallbladder with the operation called laparoscopic cholecystectomy.

STEP 2. VOCABULARY. TEXTS.

1. a) Supply words and word combinations having close meaning to the following.

preventive, to rise, about five months, to radiate to, to involve, acute, to result in, to determine, lesion, to limit, entire.

b) Supply words of opposite meaning to the following.

To elevate, to recover, to diminish, approximately, dry, empty, sharp, base, to doubt the diagnosis, diagnostic examination, the most common symptom.

2. Distribute the following words and word-combinations by graphs.

Disease	Pathologic Symptom	Medical procedures
<i>Gastric ulcer, serum transfusion, continuous haemorrhage, carcinoma, anaemia, intermittent fever, prophylactic vaccination, profuse external bleeding, chemotherapy, chronic gastritis, dryness in the mouth, acute cholecystitis, parenteral injections, severe nausea.</i>		

3. Choose symptoms which are the most common for the following diseases.

1. *In acute cholecystitis* the patient suffers from ... (atrial fibrillation/intense pains in the right hypochondrium and in the umbilical area/ slight pain and general epigastric discomfort).

2. *In attacks of acute appendicitis* the patient usually develops ... (profuse external bleeding/ vomiting of blood/sharp pains in the epigastrium which soon become generalized in the abdomen).

3. *Perforating ulcers* are characterized by ... (pain which is usually dull in character/acute pain in the stomach/ sharp pain in the substernal area radiating down the arm).

4. *The development of chronic gastritis* is characterized by the appearance of ... (the loss of appetite, pain and epigastric discomfort after meals/nausea, vomiting accompanied by haemorrhage/ cold perspiration at night and intermittent fever).

4. Say what diseases are spoken about in the following statements.

1. This disease is treated surgically. Most often pain starts around the navel and then moves to the right lower abdomen. The disease is caused by infection which leads to tissue death. The operation must be performed immediately to prevent the development of peritonitis.

2. When the physician examines the patient with this disease he reveals severe tenderness in the right upper part of the abdomen and in the umbilical area. The physician also notes slight jaundice of sclerae. The patient complains of dryness in the mouth, vomiting, nausea and constipation.

3. Many people have they. A burning pain in the gut is the most common symptom. The pain starts 2-3 hours after a meal, usually goes away after you eat. The disease is caused by bacteria called *Helicobacter pylori*.

5. Remember the following words. Find their translation below.

Diabetes mellitus, diabetic patients, biopsy, pigmentation, stasis, eruption, rash.
--

Висип, біопсія, стаз (застій), пігментація (забарвлювання), висипання, цукровий діабет, хворі на діабет.
--

6. Finish the following definitions and answer the questions.

1. The disease of the endocrine system caused by a large amount of sugar in the body is 2. The colouring of the skin caused by some disturbances in the body is 3. The diagnostic examination of the tissue taken from a living body is ...

4. An unusual eruption on the skin mostly caused by some infectious disease is ...

5. The disturbance of blood circulation that causes blood to stop at a certain portion of a vessel is

7. Read and translate Text A.

WHAT IS DIABETES?

Diabetes is a serious complex condition which can affect the entire body. Diabetes can have a significant impact on quality of life and can reduce life expectancy. While there is currently no cure for diabetes, you can live an enjoyable life by learning about the condition and effectively managing it.

How does diabetes affect the body?

When someone has diabetes, their body can't maintain healthy levels of glucose in the blood. Glucose is a form of sugar which is the main source of energy for our bodies. For our bodies to work properly we need to convert glucose (sugar) from food into energy. A hormone called insulin is essential for the conversion of glucose into energy. In people with diabetes, insulin is no longer produced or not produced in sufficient amounts by the body. When people with diabetes eat glucose, which is in foods such as breads, cereals, fruit and starchy vegetables, milk, yoghurt and sweets, it can't be converted into energy.

Instead of being turned into energy the glucose stays in the blood resulting in high blood glucose levels. After eating, the glucose is carried around your body in your blood. Your blood glucose level is called glycaemia.

Why is diabetes increasing?

All types of diabetes are increasing in prevalence: Type 1 diabetes accounts for 10% of all diabetes and is increasing. Type 2 diabetes accounts for 85% of all diabetes and is increasing. Type 2 diabetes is increasing at the fastest rate. There are large numbers of people with silent, undiagnosed type 2 diabetes which may be damaging their bodies. Type 2 diabetes is one of the major consequences of the obesity epidemic. The combination of massive changes to diet and the food supply, combined with massive changes to physical activity with more sedentary work and less activity, means most populations are seeing more type 2 diabetes.

Symptoms

In type 1 diabetes, symptoms are often sudden and can be life-threatening; therefore it is usually diagnosed quite quickly. In type 2 diabetes, many people have no symptoms at all, while other signs can go unnoticed being seen as part of 'getting older'. Therefore, by the time symptoms are noticed, complications of diabetes may already be present. Common symptoms include:

<ul style="list-style-type: none">• Being more thirsty than usual• Passing more urine• Feeling tired and lethargic• Always feeling hungry	<ul style="list-style-type: none">• Having cuts that heal slowly• Itching, skin infections• Blurred vision• Unexplained weight loss (type 1)• Gradually putting on weight (type 2)	<ul style="list-style-type: none">• Mood swings• Headaches• Feeling dizzy• Leg cramps
--	--	--

8. Say whether the following statements are true or false.

1. Diabetes can't have a significant impact on quality of life. 2. Diabetes is a serious complex condition which can reduce life expectancy. 3. The cause of diabetes is that human body can't maintain healthy levels of glucose in the blood. 4. In people with diabetes, insulin is no longer produced or not produced in sufficient amounts by the body. 5. When people with diabetes eat glucose, it can be converted into energy. 6. All types of diabetes are not increasing in prevalence in the world. 7. Common symptoms in diabetes don't include being more thirsty than usual. 8. Diabetic patients can live an enjoyable life by learning about the condition and effectively managing it.

9. Read Text B. Name the findings of the physical examination. State the abnormalities revealed by laboratory analyses. Summarize the essence of each paragraph in a sentence to make the plan of the case history.

HEPATIC DAMAGE DUE TO CHEMOTHERAPY

A 50-year-old woman had been known to have diabetes for 20 years. Her condition had been controlled by diet and administration of 100 units of insulin preparation daily. In an effort to improve the intensity of her control she had been given 1 gr of chlorpropamide additionally. About three weeks later she notes general malaise, weakness and loss of appetite, followed in a few days by the discovery of dark urine, light stools and rash on her trunk. With the passage of an additional week she noted jaundice. There was no pain, fever, nausea, or vomiting. Her past history did not reveal liver or bile duct diseases. She was hospitalized for further studies.

The findings of the physical examination showed the presence of jaundice and diffuse rash on the chest and abdomen. The liver was enlarged and there was tenderness on palpation. The blood analysis revealed serum bilirubin to be at the level of 8.9mg%, the hemoglobin level was 11.6 gr% and the white blood cell count was 7,600 per cubic millimetre. Platelets averaged to 490,000 per cubic millimetre. Urinalysis revealed the presence of bile. The biopsy of the liver showed normal liver structure. There was mild pigmentation of Kupffer cells and slight capillary bile stasis. Some inflammatory reaction in the portal tracts was noted, but no inflammatory or degenerative changes were observed in the hepatic cells. The patient was discontinued chemotherapy with chlorpropamide and her diabetes was controlled by a diet containing 150 gr of carbohydrates, 75 gr of proteins and 80 gr of fats and the administration of 80 units of insulin preparation daily. Her symptoms having been relieved after a month's treatment, the patient was discharged from the hospital. She complained of neither jaundice nor any other symptoms when she was seen for a follow-up examination three months later.

Notes

1. Chlorpropamide – препарат, який застосовується для посилення дії інсуліну.
2. Kupffer cells – купферівські клітини в печінці.

UNIT 5. INFECTIOUS DISEASES.

LESSON 30.

Граматика: Умовні речення.

Тексти: Text A. The Origin of Infections

Text B. Immunity

Text C. Ten Fascinating and Interesting Facts About the IS

Text D. Infectious disease

Text E. Diphtheria

STEP 1. GRAMMAR

1. Визначте роль слова if:

1. **If** there is common bile duct obstruction jaundice usually develops. 2 The surgeon wanted to know **if** all the surgical instruments necessary for the operation had already been adequately sterilized. 3. Persons who have been in contact with the sick may be infected with hepatitis **if** prophylactic vaccination against it is not carried out. 4. **If** I were ill I should like to be nursed by you.

2. Прочитайте речення і порівняйте їх з українським перекладом.

Зверніть увагу на виділені присудки. Дайте відповіді на запитання:

1. a) If he is at the Institute - tomorrow he will see my brother.	Якщо він буде в інституті завтра, він побачить мого брата.
2. б) If he were at the Institute tomorrow he would see my brother	Якби він був у інституті завтра, він побачив би мого брата.
в) If you took this drug now you would feel an immediate relief.	Якби ви прийняли ці ліки зараз, ви відчували б швидке полегшення.
3. г) If he had been at the Institute yesterday, he would have seen my brother.	Якби він був у інституті вчора, він побачив би мого брата.
д) If he had taken this drug yesterday he would have felt an immediate relief.	Якби він прийняв ці ліки вчора, він відчув би швидке полегшення.

☺1. Яку умову виражає речення I (а), і до якого часу належить дія у цьому реченні? 2. У якому часі стоять дієслова у I типі умовних речень? Як звучать українською ці речення? 3. Яку умову виражають речення II(б), (в), і до якого часу належить дія у цих реченнях? 4. У якому часі стоять дієслова у II типі умовних речень? Як вони звучать українською? 5. Яку умову виражають речення III (г), (д), і до якого часу належить дія у цих реченнях? 6. У якому часі стоять дієслова у III типі умовних речень? Як вони звучать українською мовою?

3. Зробіть переклад наступних речень. Визначте тип умовних речень:

1. If biopsy had revealed cancer cells in the lung, the patient would have been operated on. 2. If the temperature is extremely high viruses will not survive. 3. The

gastric juice would contain much mucus if the examined patient had carcinoma. 4. The patient would not have developed severe anaemia, if he had not suffered profuse external bleeding because of a bad injury.

4. Визначте частину мови і синтаксичну функцію виділених слів.

Malaria infects half a billion people each year, **killing** 3 million. Children **aged 1-4 are the most vulnerable** and the disease kills one child every 20 seconds. Malaria could threaten Britain as a result of **climate change**, according to a **Department of Health study** published recently. Alexander the Great **is thought by some to have died of malaria**. Other well-known victims include Oliver Cromwell, Dante Alighieri, the evolutionary biologist Prof William Hamilton, the **explorer** David Livingstone and the poet Lord Byron.

STEP 2. VOCABULARY. TEXTS

1. Read the following information paying attention to words of Latin origin. Translate this information.

An infectious disease is any disease caused by a pathogen (germ) such as a virus, bacteria, parasite, or fungus. There are some interesting facts about ID:

- A Zoonotic disease is an infectious disease that can be transmitted between animals to humans.
- Not all infections are considered diseases as some infections don't make a person sick.
- Not all viruses, bacteria, parasites, and fungi are bad for humans, but the ones that do cause disease are called pathogens.
- Over 160,000 people die each year in the United States from infectious diseases.
- A "contagious" disease is an infectious disease that is very easily transmitted.

2. 1. Read Text A. 2. Define the four groups of infectious diseases. 3. Give English equivalents to the following word combinations: особливий шлях проникнення, під час кашлю чи розмови, у вигляді крапель, різноманітні предмети.

THE ORIGIN OF INFECTIONS

The infectious diseases of man are usually divided into two large groups. Some diseases affect only men, others affect both man and animals, with man most frequently infected from animals.

Every infectious disease has not only characteristic clinical manifestations but also its own specific way of invasion into the human body.

Such a disease as dysentery ['disntri], which is one of the diseases of the intestinal infections, is spread through the intestines and stools.

The infections of the respiratory tract compose the second subgroup. During coughing or talking the pathogens are discharged from the infected organism with the mucus from the membranes of the respiratory tract into the air in the form of drops. The infection is spread when the air containing drops of mucus with the pathogens in it, is breathed in. The diseases of this subgroup are diphtheria, smallpox, etc.

The diseases of the third subgroup are spread through the skin and the mucosa in which the pathogens multiply. In some cases it is the skin, in others it is the mucous membrane of the eye. Direct contact and various things belonging to the sick may be responsible for spreading the infective agent.

The diseases of the fourth subgroup are spread by living insects. The pathogens causing these infections circulate in the blood or lymph and are not discharged from the organism. The insects become infected as they ingest (смокчуть) the blood of a diseased man. They become infectious for other people after the pathogens have multiplied in their organism. All these diseases, of which encephalitis is an example, are called blood infections.

3. 1. Read Text B. 2. Translate the sentences containing if. 3. Give English equivalents to the following word-combinations: прямой контакт, особлива властивість опору, при різних умовах, одуження настає, наявність будь-якої інфекції. 4. Write a summary of the text.

IMMUNITY

Infectious diseases are known to be caused by the invasion and growth of microorganisms in the human body. Infection may result from direct contact with patients or from indirect one.

But the human organism is known to have a specific capacity of resistance against infection, which is called immunity, it being natural and artificial. Under various conditions it may be entirely lacking, it may be relative, rarely it may be absolute. A previous attack of an infectious disease produces a more or less permanent protection against its subsequent infection.

In the course of their growth in the body many pathogenic microorganisms produce virulent poisons or toxins, they causing the characteristic symptoms of a particular disease. To meet the infection the cells of the body produce a chemical antidote which is specific for this particular infection and is known as an antitoxin. If the patient can produce a sufficient amount of this antidote to neutralize the toxins before the vital organs are injured recovery occurs. If the human body had not this capacity we should suffer from all infectious diseases. If the toxin can be isolated from bacterial cultures and injected into men an artificial immunity can be produced which results from the formation of antitoxin.

The cellular elements of the tissues also take an active part in the protection of the organism against the infection. The presence of any infection usually produces leucocytosis and bacteria in the tissues are surrounded by white cells or phagocytes which prevent the spread of bacteria destroying them.

If the reaction against invading bacteria is insufficient, vaccines may be injected subcutaneously to produce a more active resistance of the protective mechanisms of the body. Vaccines are employed not only to contribute to the treatment of a disease, but to establish an active artificial immunity.

4. Read Text C. Complete the text with the correct prepositions. Translate the text. Say what is the most interesting fact you have found out of the text.

TEN FASCINATING AND INTERESTING FACTS ABOUT THE IMMUNE SYSTEM

Your body is hard *(on/at)* work, day and night, protecting you against disease and infection. At the basic level, your skin and mucous membranes provide barriers to bacteria entering your system and, if they do get in, then you have white blood cells, or lymphocytes, which are able to identify harmful bacteria and call to arms your immune system to track and kill any germs. If we didn't have an immune system, then we simply couldn't survive, and here are some facts about the human immune system that you probably didn't know about:

1. Too little sleep will affect *(-/on)* your immune system

Not sleeping enough depresses the effectiveness of your immune system. So, if you've been burning the candle at both ends and not getting a good, solid night's sleep, you will be far more susceptible to contracting colds and other diseases.

2. Chicken soup really is good for you when you are sick

The chicken soup remedy for colds is not just an old wives' tale. A scientific study found that the combination of vegetables and chicken in soup can actually work with your immune system and help to reduce the inflammation that is caused *(by/in)* colds and other respiratory diseases.

3. Being too clean can hinder your immune system

Many of us are obsessed *(with/in)* cleanliness these days and we use antibacterial soaps, wipes and hand sanitizers far more often, than we should. Too much washing and cleansing can actually let bacteria in, because you break down the natural oils in your skin that act as a barrier against bacteria. Viruses also adapt, so if we all stay too clean, they will just become super viruses, so they will still find a way into your body!

4. Working out makes you more susceptible to infection

Germs can be spread easily *(in/by)* a gym, especially if people don't wipe down equipment after they've used it. But things are made worse, because when you work out, your body releases cortisol and adrenaline, which can temporarily reduce the effectiveness of your immune system.

5. Autoimmune disease affects more women, than it does men

Autoimmune diseases, such as rheumatoid arthritis, celiac disease and psoriasis, are those diseases where the immune system becomes hyperactive and can start attacking healthy the cells and tissue (*in/with*) your body. Around 5% of the population suffer from these diseases and of those, around 7% are women.

6. Some people are born with no immune system

The 1976 film, *The Boy in the Plastic Bubble*, starring John Travolta told the fictional story of a boy who suffered (*with/from*) a disease called severe combined immunodeficiency, or (SCID). Although the story is fictional, the disease is very real and about 1 in every 100,000 people born are born with severe impairments to their immune system.

7. How vaccinations were pioneered

Vaccinations work by giving you a very small infection of a disease, which triggers your body to produce anti-bodies (*by/to*) that particular disease. It was an English physician, Edward Jenner, who first pioneered vaccinations by inoculating an 8 year old boy with the pus from cowpox lesions on another patients' arms, which he discovered gave the young boy immunity to smallpox.

8. Happy and healthy relationship improves (*on/-*) your immune system

Healthy and happy relationship with your partner can give your immune system a boost, as all the happy moments that you live together increase the production of a endorphins, or happy hormones in your body, and this 'feel good' feeling is very beneficial for your health.

9. An allergy is the immune system getting things wrong

An allergy is caused when the body overreacts to an allergen that it really should ignore. The immune system goes into overdrive when exposed to allergens, such as pollen, nuts or animal fur and produces the side effects of watery eyes, headaches and swelling.

10. It's not the cold that gives you the symptoms, it's your immune system

When you catch a cold and you get a fever, the fever is a sign that your immune system is doing its job properly. A fever releases the bacteria fighting white blood cells in your body and increases your metabolism to give you the strength to fight off the infection.

Do you know some other interesting facts about the immune system?

Stay happy and healthy!

5. Read Text D. Four sentences have been removed from the text. Choose from the sentences (A-E) the one which fits each gap (1-4). There is one extra sentence which you don't need to use.

INFECTIOUS DISEASES

Any infectious disease is a process caused by a microorganism that impairs a person's health. An infection, by contrast, is the invasion of and replication in the body by any of various microbial agents—including bacteria, viruses, fungi,

protozoans, and worms—as well as the reaction of tissues to their presence or to the toxins that they produce. When health is not altered, the process is termed a subclinical infection. Thus, a person may be infected but not have an infectious disease. This principle is illustrated by the use of vaccines for the prevention of infectious diseases. (1) _____ . The immunization is designed to produce a measles infection in the recipient but generally causes no discernible alteration in the state of health. It produces immunity to measles without producing a clinical illness (an infectious disease).

(2) _____ . When these tissues have been broken or affected by earlier disease, invasion by microorganisms may occur. These microorganisms may produce a local infectious disease, such as boils, or may invade the bloodstream and be carried throughout the body, producing generalized bloodstream infection (septicemia) or localized infection at a distant site, such as meningitis (an infection of the coverings of the brain and spinal cord). (3) _____. The conjunctiva, which covers the front of the eye, may be penetrated by viruses that cause a local inflammation of the eye or that pass into the bloodstream and cause a severe general disease, such as smallpox. Microorganisms can enter the body through the genital tract, causing the acute inflammatory reaction of gonorrhea in the genital and pelvic organs or spreading out to attack almost any organ of the body with the more chronic and destructive lesions of syphilis. Even before birth, viruses and other infectious agents can pass through the placenta and attack developing cells, so that an infant may be diseased or deformed at birth.

From conception to death, humans are targets for attack by multitudes of other living organisms, all of them competing for a place in the common environment. The air people breathe, the soil they walk on, the waters and vegetation around them, the buildings they inhabit and work in, all can be populated with forms of life that are potentially dangerous. (4) _____. However, the human body is not without defenses against these threats, for it is equipped with a comprehensive immune system that reacts quickly and specifically against disease organisms when they attack. Survival throughout the ages has depended largely on these reactions, which today are supplemented and strengthened through the use of medical drugs.

A. The type of agent used depends on the organism that is causing the infection.

B. The most important barriers to invasion of the human host by microorganisms are the skin and mucous membranes (the tissues that line the nose, mouth, and upper respiratory tract).

C. For example, a virus such as that which causes measles may be weakened and used as an immunizing agent.

D. Domestic animals may harbour organisms that are a threat, and wildlife teems with agents of infection that can afflict humans with serious disease.

E. Infectious agents swallowed in food and drink can attack the wall of the intestinal tract and cause local or general disease.

6. Read and translate Text E.

DIPHTHERIA

The patient was a seven-year-old girl. Her fever was irregular and considerably elevated. The general symptoms, such as headache and backache were not severe, but her pulse was weak and irregular. The urinalysis revealed protein to be present in a slightly increased amount.

The patient's throat being examined, the physician noticed it be coated with a membrane. To make an adequate diagnosis the smear was taken for culture which revealed diphtheria bacilli. If diphtheria bacilli had not been revealed in the smear the doctor might have doubted the diagnosis.

The disease having progressed, prostration became marked. The membranes which had been seen at first on the tonsils were spreading to the pharynx and larynx.

The patient received an adequate treatment with diphtheria antitoxin which contributed to the clearing up of the throat. Had the antitoxin treatment not been employed so soon toxemia would have been intense and delirium and prostration extreme or heart failure, respiratory paralysis or bronco-pneumonia might have developed.

After four or five days the membrane which had been extending over the tonsils, pharynx and larynx began to loosen (розпушуватися) and disintegrate. In 10 days convalescence was noted to have advanced favourably and the danger of a fatal outcome was considered to have been completely eliminated.

Keys to exercise 5: 1 A, 2 B, 3 E, 4 D.



We have grown accustomed to the wonders of clean water, indoor plumbing, laser surgery, genetic engineering, artificial joints, replacement body parts, and the much longer lives that accompany them. Yet we should remember that the vast majority of humans ever born died before the age of 10 from an infectious disease.

- S. Jay Olshansky



I share Alfred Nobel's conviction that war is the greatest of all human disasters. Infectious disease runs a good second.

- Peter C. Doherty



By recognizing that infectious disease is not some faraway exotic issue but a global problem, and by sharing the responsibility for its prevention, diagnosis, and control, the whole world will be a lot safer.

- Seth Berkley

Рекомендована література

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9. Medical English: Case Reports. Gastrointestinal System : methodical handbook to the course "English for specific purposes (Medicine)"the 2nd year study, medical faculties / comp. O. V. Gordiyenko, O. L. Solyanenko. – Zaporizhzhia : ZSMU, 2016. - 93p.

Informational Resources

English On line Courses:

1. Free-English.Com. URL :<http://ww8.free-english.com/>
2. Free online English lessons & ESL / EFL resources. URL: <http://www.englishpage.com>
3. Bell English All rights reserved. URL :<https://www.bellenglish.com>

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ПРОФЕСІЙНА АНГЛІЙСЬКА ДЛЯ МЕДИКІВ

**ПРАКТИКУМ З ДИСЦИПЛІНИ «ІНОЗЕМНА МОВА ЗА ПРОФЕСІЙНИМ
СПРЯМУВАННЯМ» ДЛЯ СТУДЕНТІВ МЕДИЧНИХ ФАКУЛЬТЕТІВ
СПЕЦІАЛЬНОСТЕЙ «МЕДИЦИНА» І «ПЕДІАТРІЯ»**