МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ
Харківський національний медичний університет

ENGLISH READING COMPREHENSION PRACTICE

For second-year Master students in specialty "Technologies of medical diagnosis"

ЗАВДАННЯ ДЛЯ ДОМАШНЬОГО ЧИТАННЯ АНГЛІЙСЬКОЮ МОВОЮ

Для магістрів другого курсу спеціальності "Технології медичної діагностики"

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PREFACE

A modern physician who wants to be aware of the most up-to-date findings in his professional field should be able to read an incredible amount of special literature published in English. Skills in reading in a foreign language are important for professional development. Large number of information sources requires the ability to search the necessary information (reading for specific information) and understand the basic information of the text (exploratory reading).

The objective of this textbook is to develop reading comprehension skills in second-year Master students in specialty "Technologies of medical diagnosis".

The textbook consists of twelve units. Each of them includes scientific or popular science text and reading comprehension exercises to develop the skills of exploratory reading, reading for specific information and its processing. The texts cover a wide variety of topics concerning processes occurring in the human body, laboratory techniques, clinical laboratory studies, laboratory diagnosis and interpretation of tests. The texts for reading were selected from the authentic reference literature and somewhat reduced, taking into account the requirements for foreign language teaching strategies. The language level of this textbook corresponds to work leading to Level B1+.

It is recommended for independent work for second year students in specialty "Technologies of medical diagnosis". The textbook can also be used for classes with post-graduate students and those who want to improve their English reading skills.

Unit 1

Read the text

EMERGENCY FIRST AID PRIORITIES

The first priority is to assess a person's airway, breathing, and circulation (the ABCs). The airway (A), which is the passage through which air travels to the lungs, can become blocked (for example, by choking on a piece of food). Many disorders and injuries can make breathing (B) difficult. Circulation (C) of blood, which depends on a pumping and beating heart muscle, can stop during cardiac arrest, in which case cardiopulmonary resuscitation (CPR) is necessary.

If many people are injured, the most seriously injured person should be treated first. Determining who is in most urgent need of treatment may be difficult, because someone screaming in pain may be less seriously injured than someone who cannot breathe or who is in a coma and, therefore, is quiet. Assessment should take less than 1 minute per injured person. In each case, the rescuer should consider whether the situation is life threatening, urgent but not life threatening, or not urgent. Difficulty breathing and massive bleeding are life threatening, but a broken hand or foot can almost always wait for treatment, no matter how painful. When there are many people with serious injuries and resources are limited, rescuers may need to provide treatment only to those people who rescuers believe have a chance of surviving.

When injured people are unable to convey medical information because they are confused or unconscious, the information should be obtained in other ways. A description of how a person became injured and other information from bystanders, family members, or rescuers can be essential to the person's treatment. After these steps have been taken, reassurance and simple measures, such as supplying a blanket and keeping the person calm and warm, can provide comfort.

Serious diseases, such as human immunodeficiency virus (HIV) infection and hepatitis B and C, can be transmitted through blood. Rescuers should avoid contact with blood from wounds, especially the blood of strangers whose medical history is unknown. Latex or nitrile examination gloves afford the best protection. If contaminated with blood, the hands should be washed with soap and water or a mild solution of bleach as soon as possible. If neither is readily available, an alcohol-based hand sanitizer can be used.

(From THE MERCK MANUAL)

1. *Say in one word*:
   – The fluid consisting of plasma, blood cells, and platelets that is circulated by the heart through the vascular system, carrying oxygen and nutrients to and waste materials away from all body tissues
   – The act or process of respiration
   – Movement in a circle or circuit, especially the movement of blood through bodily vessels as a result of the heart's pumping action

– The chambered muscular organ that pumps blood from veins into arteries, maintaining the flow of blood through the circulatory system
– The tubes through which the air passes to and from the alveoli

2. *Find the meaning of the following abbreviations in the text:*
ABC, CPR, HIV

3. *Arrange the first aid procedures in the correct order:*
To determine who is in most urgent need of treatment,
To assess a person's airway, breathing, and circulation,
To reassure and provide comfort,
To consider whether the situation is life threatening, urgent, or not urgent,
To obtain information on a person's condition

4. *Match the words:*

Medical	gloves
Family	threatening
Life	information
Examination	members
Hand	sanitizer

5. *Find information in text to answer the questions:*
   1. What is the main priority of rendering the first aid?
   2. How should the ABC be assessed?
   3. Which factors should be considered when assessing the injured person's condition?
   4. What are the ways of obtaining medical information if the injured person is unconscious?
   5. How should rescuers prevent transmission of infections?

Unit 2

Read the text

THE PRIMARY CARE PRACTITIONER

Typically, the entry point into the health care system is a primary care practitioner, usually a doctor but sometimes a nurse practitioner or physician's assistant. The primary care practitioner provides general medical care and is responsible for overall care, including the coordination of medical specialists and supportive care. Having a primary care doctor has many advantages that can lead to better care. People who have a primary care doctor are less likely to go to an emergency department unnecessarily and less likely to be seen by a doctor they do not know. When people see a doctor they do not know, the doctor may not have all the background information necessary to diagnose and treat the problem. Consequently, the doctor may repeat tests or do unnecessary tests.

Communication is often better and medical decisions are more easily made when people have an established relationship with a primary care doctor. People are more likely to trust a doctor they know and to experience less anxiety when a medical problem develops. Primary care doctors often have long-standing relationships with their patients. They are familiar with what their patients want and value, how they best receive information, how they cope with adversity, whether they are able to purchase prescribed drugs, and which family members they rely on. There are now opportunities to contact one's primary care doctor digitally, which can further enhance communication. Technology is also available to communicate information such as blood sugar and blood pressure values to the primary care doctor.

Primary care doctors explain what type of care is needed, why it is needed, and how often visits should be scheduled. They can refer people to specialists when needed and coordinate care with other health care practitioners. Some health care plans require people to see their primary care doctor to get a referral before they see a specialist. Although this practice may be seen as an obstacle to specialty care, it can be helpful. For example, having to make a referral ensures the primary care doctor is informed about all of a person's health care needs. It also ensures that people see the proper specialist.

(From THE MERCK MANUAL)

1. *Are these statements true or false?*
    1. Primary care practitioner provides specialized medical care
    2. In some cases patients need a referral before they see a specialist
    3. A referral guarantees that the patient sees the proper specialist
    4. Scheduling visits is one of the primary care doctor's responsibilities
    5. Primary health care practitioner is always a nurse

2. *Which of the following are the advantages of having a primary care doctor?*
    – patients are more likely to trust a doctor they know
    – medical decisions are more easily made
    – high stress level
    – continuity of care and long-standing relationships with patients
    – poor management of chronic diseases
    – primary care doctor is informed about all of a person's health care needs
    – patients experience less anxiety when a medical problem develops

3. *Name the responsibilities of a primary care doctor.*

4. *Continue the sentences:*
    1. The primary care practitioner provides…
    2. People who have a primary care doctor are less likely to go to…
    3. Technology is also available to…
    4. Some health care plans require people to…
    5. Referral also ensures that people…

5. *Fill in the gaps in the summary of the text:*

The entry point into the health care system is a _____, usually a doctor but sometimes a nurse practitioner or physician's assistant. The primary care practitioner provides general _____ and is responsible for overall care, including the coordination of medical specialists and supportive care. Primary care doctors often have long-standing _____ with their patients. Primary care doctors can refer people to _____ when needed and coordinate care with other health care practitioners. Some health care plans require people to see their primary care doctor to get a _____ before they see a specialist.

Unit 3

Read the text

OVERVIEW OF AGING

Aging is a gradual, continuous process of natural change that begins in early adulthood. During early middle age, many bodily functions begin to gradually decline.

People do not become old or elderly at any specific age. Traditionally, age 65 has been designated as the beginning of old age. But the reason was based in history, not biology. Many years ago, age 65 was chosen as the age for retirement in Germany, the first nation to establish a retirement program, and it continues to be the retirement age for most people in developed societies, although this tradition is changing.

When a person becomes old can be answered in different ways:

Chronologic age: Chronologic age is based solely on the passage of time. It is a person's age in years. Chronologic age has limited significance in terms of health. Nonetheless, the likelihood of developing a health problem increases as people age, and it is health problems, rather than normal aging, that are the primary cause of functional loss during old age. Because chronologic age helps predict many health problems, it has some legal and financial uses.

Biologic age: Biologic age refers to changes in the body that commonly occur as people age. Because these changes affect some people sooner than others, some people are biologically old at 40, and others at later ages. However, most noticeable differences in apparent age among people of similar chronologic age are caused by lifestyle, habit, and subtle effects of disease rather than by differences in actual aging.

Psychologic age: Psychologic age is based on how people act and feel. For example, an 80-year-old who works, plans, looks forward to future events, and participates in many activities is considered psychologically young.

Most people do not need the expertise of a geriatrician (a doctor who specializes in the care of the elderly) until they are 70 to 75 years old.

(From THE MERCK MANUAL)

1. *Match the synonyms:*

Aging	Reduce
Retirement	Old
Adulthood	Influence
Affect	Maturity
Elderly	Stopping work
Decline	Growing old

2. *Which of the following was NOT mentioned in the text?*
   1. Diseases associated with aging
   2. Age of retirement in the world
   3. Characteristics of chronologic age
   4. Changes in the body related to biologic age
   5. Description of psychologic age
   6. The work of a geriatrician
   7. Bodily functions
   8. Examination of the elderly
   9. Retirement program for disabled
   10. Retirement benefits

3. *What do the numbers appearing in the text refer to?*
   65, 40, 80, 70, 75

4. *Find the explanation for the following in the text:*
   – Aging
   – Chronologic age
   – Biologic age
   – Psychologic age
   – Geriatrician

5. *Is the following true or false? Correct the false statements*
   1. Chronologic age helps predict many health problems
   2. A geriatrician is a doctor who specializes in the care of the children
   3. Differences in age among people are caused by lifestyle, habit, and effects of disease
   4. The probability of developing a health problem reduces with age
   5. Psychologic age is associated with how a person thinks and feels

Unit 4

Read the text

ORGAN SYSTEMS WORKING TOGETHER

Organ systems often work together to do complicated tasks. For example, after a large meal is eaten, several organ systems work together to help the digestive system obtain more blood to perform its functions. The digestive system enlists the aid of the cardiovascular system and the nervous system.

Blood vessels of the digestive system widen to transport more blood. Nerve impulses are sent to the brain, notifying it of the increased digestive activity. The digestive system even directly stimulates the heart through nerve impulses and chemicals released into the bloodstream. The heart responds by pumping more blood. The brain responds by perceiving less hunger, more fullness, and less interest in physical activity, which preserves more blood to be used by the digestive system instead of by skeletal muscles.

Communication between organs and organ systems is vital. Communication allows the body to adjust the function of each organ according to the needs of the whole body. In the example above, the heart needs to know when the digestive organs need more blood so that it can pump more. When the heart knows that the body is resting, it can pump less. The kidneys must know when the body has too much fluid, so that they can produce more urine, and when the body is dehydrated, so that they can conserve water.

Homeostasis is the term used to describe how the body maintains its normal composition and functions. Because organ systems communicate with each other, the body is able to maintain stable amounts of internal fluids and substances. Also, the organs neither underwork nor overwork, and each organ facilitates the functions of every other organ.

Communications to maintain homeostasis occur by means of the autonomic nervous system and the endocrine system. Special chemicals called transmitters carry out the communications.

One of the best known transmitters is the hormone epinephrine (adrenaline). When a person is suddenly stressed or frightened, the brain instantly sends a message to the adrenal glands, which quickly release epinephrine. Within moments, this chemical has the entire body on alert, a response sometimes called the fight-or-flight response. The heart beats more rapidly and powerfully, the eyes dilate to allow more light in, breathing quickens, and the activity of the digestive system decreases to allow more blood to go to the muscles. The effect is rapid and intense.

(From THE MERCK MANUAL)

1. *Supply the words to the definitions:*
   – primary center for the regulation and control of bodily activities
   – a state of equilibrium in an organism or cell, maintained by self-regulating processes
   – either of two organs which filter waste products from the blood excreted as urine
   – a body system responsible for the ingestion, digestion, and absorption of food
   – the anatomical system consisting of the heart and blood vessels

2. *Continue the sentences:*
    1. Communication allows the body to …
    2. Epinephrine is …
    3. Fight-or-flight response is…
    4. Communications to maintain homeostasis occurs by means of…
    5. Homeostasis is …

3. *Find in the text information to answer the questions:*
    1. Why is communication between organs and systems so important?
    2. What systems are responsible for maintaining homeostasis?
    3. What is a transmitter?
    4. Which organ secretes epinephrine?
    5. How does the body respond to stress?

4. *Fill in the gaps in the summary on communication of organs:*
    Several organ systems work together to help the d_____ s_____ obtain more b_____ to perform its functions. The digestive system enlists the aid of the c_____ s_____ and the n_____ s_____. B_____ v_____ of the digestive system widen to transport more b_____. N_____ impulses are sent to the b_____, notifying it of the increased digestive activity. The digestive system even directly stimulates the h_____ through nerve impulses and chemicals released into the b_____. The heart responds by pumping more blood. The b_____ responds by perceiving less hunger, more fullness, and less interest in physical activity, which preserves more blood to be used by the digestive system instead of by skeletal m_____.

Unit 5

Read the text

OVERVIEW OF DRUGS

A drug is defined as any substance intended for use in the diagnosis, cure, relief, treatment, or prevention of disease or intended to affect the structure or function of the body. (Oral contraceptives are an example of drugs that affect the function of the body rather than a disease.) A simpler definition of a drug is any chemical or biologic substance that affects the body and its processes.

By law, drugs are divided into two categories: prescription drugs and nonprescription drugs.

Prescription drugs—those considered safe for use only under medical supervision—may be dispensed only with a prescription from a licensed professional with governmental privileges to prescribe (for example, a doctor, dentist, podiatrist, nurse practitioner, physician's assistant, or veterinarian).

Nonprescription drugs—those considered safe for use without medical supervision (such as aspirin)—are sold over the counter.

Dietary supplements (for example, medicinal herbs and nutraceuticals) are products intended to supplement the diet. These products may contain vitamins, amino acids, minerals, and herbs or other plant-derived material (botanicals). Because dietary supplements are not classified as drugs, they do not require approval before marketing and do not have to meet the same standards as drugs for safety and efficacy. Although these products are not classified as drugs, they can act in the same way as a drug does in the body and may cause health problems if not used correctly or if taken in large amounts.

Some knowledge of drug names can help in understanding drug product labels. Every drug has at least three names—a chemical name, a generic (nonproprietary or official) name, and a brand (proprietary or trademark) name

The chemical name describes the atomic or molecular structure of the drug. So an official body assigns a generic name to a drug. The generic names for drugs of a particular type (class) usually have the same ending.

The brand name is chosen by the pharmaceutical company that manufactures or distributes the drug.

(From THE MERCK MANUAL)

1. *Which of the following was NOT mentioned in the text?*
    1. Categories of drugs
    2. The difference between prescription and nonprescription drugs
    3. Molecular structure of drugs
    4. Types of dietary supplements
    5. Manufacturing of drugs
    6. The work of pharmaceutical companies
    7. Drug names
    8. Routes of drugs administration
    9. Standards of drugs safety
    10. Allergies to drugs
2. *Continue the statements:*
    1. A drug is….
    2. Two categories of drugs include…
    3. Prescription drugs are…
    4. Nonprescription drugs are sold…
    5. Dietary supplements may contain…
    6. Dietary supplements do not require approval because….
    7. Every drug has at least three names, such as….
    8. Generic names are assigned by…
    9. Chemical names are related to…
    10. Brand names are…

3. *Match the definitions with the terms:*
   1. Diagnosis, 2. Cure, 3. Relief, 4. Treatment, 5. Prevention
   a) the easing of pain, distress, or anxiety
   b) the use of a procedure, or regimen, such as a drug or surgery, to cure or mitigate a disease, condition or injury
   c) restoration of health
   d) to stop something happening
   e) the act or process of identifying or determining the nature and cause of a disease by evaluation of patient history, examination, and review of laboratory data

4. *Match the specialists with their responsibilities:*
   1. Dentist, 2. Podiatrist, 3. Doctor, 4. Physician's assistant, 5. Veterinarian
   a) to diagnose, treat and prevent diseases of the human foot
   b) to provide medical and surgical treatment of animals
   c) to care of the teeth and gums, treat oral diseases
   d) to provide patient services under a supervision of a physician
   e) to practice medicine being awarded an academic degree

5. *Write a brief summary of the text*

Unit 6

Read the text

COMPLETE BLOOD COUNT

The blood test most commonly done is the complete blood count (CBC). The CBC is an evaluation of all the cellular components (red blood cells, white blood cells, and platelets) in the blood.

Red blood cell parameters evaluated by CBC include

- Number of red blood cells (red blood cell count, RBCs)
- Proportion of blood made up of red blood cells (hematocrit, Hct)
- Amount of hemoglobin (the oxygen-carrying protein in red blood cells) in the blood (hemoglobin, Hb)
- Average size of red blood cells (mean cellular volume, MCV)
- Variability of size of red blood cells (red cell distribution width, RDW)
- Amount of hemoglobin in an individual red blood cell (mean cellular hemoglobin, MCH)
- Concentration of hemoglobin in an individual red blood cell (mean cellular hemoglobin concentration, MCHC)

Abnormalities in these parameters can alert laboratory workers to the presence of abnormalities in the red blood cells (which may then be further evaluated by examination under a microscope).

Abnormal red blood cells may be fragmented or shaped like teardrops, crescents (sickle-shaped), or a variety of other forms. Knowing the specific shape and size of red blood cells can help a doctor diagnose a particular cause of anemia.

White blood cell parameters evaluated by the CBC include the

- Total number of white blood cells
- Percentages and numbers of the different types of white blood cells

The white blood cells are the major component of the body's immune system. There are normally five types of white blood cells (neutrophils, lymphocytes, monocytes, eosinophils, and basophils), and different types are recruited into service when the immune system responds to different stresses or disorders. Counting the number of white blood cells of each type (differential white blood cell count) can suggest to a doctor possible causes of a change in the total white blood cell count. To provide more information about the white blood cells, the doctor can examine these cells under a microscope. The microscopic examination can identify features of the cells that are characteristic of certain diseases. For example, large numbers of white blood cells that have a very immature appearance (blasts) may indicate leukemia (cancer of the white blood cells).

Platelets are also counted as part of a CBC. The number of platelets is an important measure of the blood's ability to form blood clots (forming blood clots is the body's protective mechanism for stopping bleeding). Too few platelets may impair blood clotting. A high number of platelets (thrombocytosis) can lead to excessive blood clotting in small blood vessels, especially those in the heart or brain.

(From THE MERCK MANUAL)

1. *Find the meaning of the following abbreviations in the text:*
   CBC, MCHC, RBC, Hct, Hb, MCV, RDW, MCH

2. *Answer the questions:*
   1. What are the red blood cell parameters?
   2. What do white blood cell parameters include?
   3. What are the five types of white blood cells?
   4. What is the differential white blood cells count?
   5. What is the function of platelets?
   6. What is thrombocytosis?
   7. What is leukemia?
   8. In which cases is it necessary to examine blood cells under the microscope?
   9. Why is it important to know the shape and size of blood cells?
   10. What is a blast?

3. *Is the following true or false? Correct the false statements.*
    1. Cellular components of the blood include red blood cells, white blood cells and platelets
    2. The white blood cells play are responsible for blood clotting
    3. There are five types of platelets
    4. Large numbers of immature white blood cells can indicate cancer of the white blood cells
    5. Formation of blood clots is important to stop bleeding

4. *Match the words with the definitions:*
    1. Microscope, 2. Hemoglobin, 3. Anemia, 4. Protein, 5. Hematocrit
        a) the volume, after centrifugation, occupied by cellular elements of blood, in relation to total volume
        b) an optical instrument that uses a lens or a combination of lenses to produce magnified images of small objects
        c) a pathological deficiency in the oxygen-carrying component of the blood
        d) the protein in the red blood cells that carries oxygen from the lungs to tissues
        e) a group of complex organic macromolecules containing carbon, hydrogen, oxygen, nitrogen, composed of one or more chains of amino acids

5. *Write a brief summary of the text*

Unit 7

Read the text

TESTS FOR MUSCULOSKELETAL DISORDERS

A doctor can often diagnose a musculoskeletal disorder based on the history and the results of a physical examination. Laboratory tests, imaging tests, or other diagnostic procedures are sometimes necessary to help the doctor make or confirm a diagnosis.

Laboratory tests are often helpful in making the diagnosis of a musculoskeletal disorder. For example, the erythrocyte sedimentation rate (ESR) is a test that measures the rate at which red blood cells settle to the bottom of a test tube containing blood. The ESR is usually increased when inflammation is present. However, because inflammation occurs in so many conditions, the ESR alone does not establish a diagnosis.

The level of creatine kinase (a normal muscle enzyme that leaks out and is released into the bloodstream when muscle is damaged) may also be tested. Levels of creatine kinase are increased when there is widespread ongoing destruction of muscle.

In rheumatoid arthritis, a blood test to identify rheumatoid factor or anti-cyclic citrullinated peptide (anti-CCP) antibody is helpful in making the diagnosis.

In systemic lupus erythematosus (lupus), blood tests to identify autoimmune antibodies (autoantibodies), such as antinuclear antibodies and antibodies to double-stranded deoxyribonucleic acid (DNA), help in making the diagnosis.

A blood test can be done to identify people who have a certain gene (*HLA-B27*). People who have this gene are at increased risk of developing spondyloarthritis, a group of disorders that can cause inflammation of the back and other joints as well as other symptoms, such as eye pain and redness and rashes.

Some laboratory tests are also often useful to help monitor the progress of treatment. For example, the ESR can be particularly useful in helping to monitor the progress of treatment in rheumatoid arthritis or polymyalgia rheumatica. A decrease in the ESR suggests that treatment is working to reduce inflammation.

(From THE MERCK MANUAL)

1. *Find the meaning of the following abbreviations in the text:*
   ESR, CCP, DNA

2. *Match the test with the condition it can diagnose:*

Creatine kinase	spondyloarthritis
Genetic test	destruction of muscle
Lupus	rheumatoid arthritis
Rheumatoid factor	autoimmune antibodies
ESR test	inflammation

3. *Which of the following was NOT mentioned in the text:*
   1. Prevention of musculoskeletal disorders
   2. Types of tests to diagnose musculoskeletal diseases
   3. Musculoskeletal diseases in elderly
   4. Tests used to monitor the progress of treatment
   5. Treatment of musculoskeletal diseases

4. *Find the terms for the following definitions in the text:*
   1. A localized protective reaction of tissue to irritation, injury, or infection, characterized by pain, redness, swelling, and sometimes loss of function
   2. A procedure, usually conducted in a laboratory, that is intended to detect, identify, or quantify one or more significant substances, evaluate organ functions, or establish the nature of a condition or disease
   3. Any of numerous compounds that are produced by living organisms and function as biochemical catalysts
   4. A hereditary unit consisting of a sequence of DNA that occupies a specific location on achromosome
   5. Any of various proteins produced in the blood in response to the presence of an antigen

5. *Fill in the gaps in the summary of the text*

Musculoskeletal disorders can be diagnosed basing on the history and the results of a physical e_____. Laboratory tests, imaging tests, or other diagnostic procedures are used to make or confirm a d_____. Laboratory t_____ are often helpful in making the diagnosis of a musculoskeletal disorder. Some laboratory tests are also often useful to help monitor the progress of t_____.

Unit 8

Read the text

TESTS FOR BRAIN, SPINAL CORD AND NERVE DISEASES

Occasionally, doctors cannot determine the cause of the nerve damage or muscle weakness based on results of blood tests, imaging tests, or nerve conduction studies. In such cases, doctors typically refer the person to a specialist, who may remove a small sample of muscle tissue and sometimes a nerve to examine under a microscope (biopsy). The sample is removed from an area of the body where symptoms occur. The sample is stained to help doctors identify the pattern of muscle or nerve damage and to determine whether white blood cells (which indicate inflammation) are present.

For a spinal tap (lumbar puncture), a sample of cerebrospinal fluid is withdrawn with a needle and sent to a laboratory for examination.

The cerebrospinal fluid is checked for evidence of infections, tumors, and bleeding in the brain and spinal cord. These disorders may change the content and appearance of the cerebrospinal fluid, which normally contains few red and white blood cells and is clear and colorless. For example, the following findings suggest certain disorders:

- An increase in the number of white blood cells in the cerebrospinal fluid suggests an infection or inflammation of the brain and spinal cord.
- Cloudy fluid suggests meningitis (infection and inflammation of the tissues covering the brain and spinal cord) or sometimes encephalitis (infection and inflammation of the brain).
- High protein levels in the fluid may result from any injury of the brain, the spinal cord, or a spinal nerve root (the part of a spinal nerve next to the spinal cord).
- Abnormal antibodies in the fluid suggest multiple sclerosis or an infection.
- Low sugar (glucose) levels suggest meningitis or cancer.
- Blood in the fluid may indicate a brain hemorrhage.
- An increase in the fluid's pressure can result from many disorders, including brain tumors and meningitis.

Doctors do not do a spinal tap when the pressure within the skull is increased, for example, when there is a mass (such as a tumor or abscess) in the brain. In such cases, a spinal tap may suddenly reduce pressure below the brain. The medical history and neurologic examination help doctors determine whether herniation is a risk.

(From THE MERCK MANUAL)

1. *Arrange the headings in the order they were mentioned in the text:*
   1. Contraindications to a spinal tap
   2. Indications to biopsy
   3. Spinal tap procedure
   4. Cerebrospinal fluid content
   5. Findings suggesting certain disorders

2. *Find in the text information to explain the following terms:*
   1. Spinal tap
   2. Biopsy
   3. Meningitis
   4. Encephalitis
   5. Spinal nerve root

3. *Match the findings with the disorders*

1. Increase in the number of white blood cells in the cerebrospinal fluid	a) multiple sclerosis or an infection
2. An increase in the fluid's pressure	b) injury of the brain or spinal cord
3. Blood in the fluid	c) meningitis or encephalitis
4. Cloudy fluid	d) brain tumors and meningitis
5. Low sugar (glucose) levels	e) infection or inflammation of the brain and spinal cord
6. Abnormal antibodies in the fluid	f) brain hemorrhage
7. High protein levels in the fluid	g) meningitis or cancer

4. *Continue the sentences:*
   1. Indications to biopsy include…
   2. The sample of tissue for biopsy is usually taken from an area…
   3. In a spinal tap cerebrospinal fluid is checked for…
   4. Normally cerebrospinal fluid contains…
   5. Contraindications to a spinal tap are…

5. *Write a brief summary of the text*

Unit 9

Read the text

LIVER FUNCTION TEST

The term liver function tests is somewhat misleading because most such tests detect inflammation of or damage to the liver, not the liver's metabolic or bile-secreting functions. Such inflammation or damage can be present before the liver's actual functioning is affected. Liver function tests are blood tests that represent a noninvasive way to screen for the presence of liver disease (for example, hepatitis in donated blood) and to measure the severity and progress of liver disease and its response to treatment.

Laboratory tests are generally effective for the following:

- Detecting liver inflammation, damage, or dysfunction
- Assessing the severity of liver injury
- Monitoring the course of liver diseases and a person's response to treatment
- Refining the diagnosis

Liver function tests are done on blood samples and measure the levels of enzymes and other substances produced by the liver. These substances include

- Alanine transaminase (ALT)
- Albumin
- Alkaline phosphatase
- Alpha-fetoprotein
- Aspartate transaminase (AST)
- Bilirubin
- Gamma-glutamyl transpeptidase
- Lactate dehydrogenase
- 5'-Nucleotidase

Levels of some of these substances measure how well the liver performs its normal functions of making proteins and secreting bile. Levels of other substances detect the presence and degree of liver inflammation. However, sometimes values can be much higher than normal, usually because a person has another disorder.

One test of liver function is the prothrombin time (PT), which is used to calculate the international normalized ratio (INR). Both the PT and the INR are measures of the time needed for blood to clot (the liver synthesizes some proteins necessary for blood clotting, called blood clotting factors). An abnormal PT or INR result can indicate an acute liver disorder. In chronic liver disorders, an increasing PT or INR typically indicates progression to liver failure.

(From THE MERCK MANUAL)

1. *Find in the text the meaning of the following abbreviations:*
   ALT, AST, PT, INR

2. *Match the terms and definitions:*
   1. Prothrombin time,
   2. International normalized ratio,
   3. Liver function test,
   4. Alanine transaminase,
   5. Aspartate transaminase

   a) a standardized measure of the clotting ability of blood based on the ratio of an individual's prothrombin time to the normal mean prothrombin time
   b) a test belonging to a group of blood tests that assess the clotting ability of blood; this test is also known as PT test

c) one of several tests used to evaluate various functions of the liver, including metabolism, filtration, and excretion
d) an enzyme that catalyzes the reversible transfer of an amino group from alanine to α-ketoglutarate to form pyruvate and glutamate. Normally present in many tissues and body fluids, especially in the liver, it isreleased into the serum as a result of tissue injury an enzyme that catalyzes the reversible transfer of an amino group from aspartate to α-ketoglutarate to form glutamate and oxaloacetate, requiring the coenzyme pyridoxal phosphate; it is normally present in serum and in various body tissues, especially in the heart and liver. It is released into the serum as the result of tissue injury, especially injury to the heart or liver

3. *Answer the questions:*
1. Is liver function test a noninvasive procedure?
2. Which substances do liver function tests measure?
3. What do the levels of these substances show?
4. What is a blood clotting factor?
5. What can abnormal PT or INR result indicate?

4. *Find all the information on PT test mentioned in the text.*

5. *Read the abstract and fill in the gaps:*

Liver function tests detect i_____ of or damage to the l_____. Liver function tests are b_____ tests that represent a noninvasive way to screen for the presence of liver disease and to measure the severity and progress of liver disease and its response to t_____.

L_____tests generally detect the following: liver inflammation, damage, or dysfunction; the severity of liver injury; the course of liver diseases and a person's response to treatment.

Liver function tests are done on blood s_____ and measure the levels of e_____ and other substances produced by the liver.

Levels of some of these substances measure how well the liver performs its normal functions of making p_____ and secreting b_____. Levels of other substances detect the presence and degree of liver inflammation.

Unit 10

Read the text

DIAGNOSIS OF INFECTIOUS DISEASES

Infectious diseases are caused by microorganisms, such as bacteria, viruses, fungi, and parasites

Doctors suspect an infection based on the person's symptoms, physical examination results, and risk factors. First, doctors confirm that the person has an infection rather than another type of illness. For example, a person with a cough and difficulty breathing may have pneumonia (a lung infection).

However, the person may have asthma or heart failure. In such a person, a chest x-ray can help doctors distinguish pneumonia from the other possible disorders.

Once doctors confirm that the person has an infection, they usually need to know which specific microorganism is causing the infection. Many different microorganisms can cause a given infection. For example, pneumonia can be caused by viruses, bacteria, or, rarely, fungi. The treatment is different for each microorganism.

Many different types of laboratory tests can identify microorganisms. Laboratory tests use a sample of blood, urine, sputum, or other fluid or tissue from the body. This sample may be:

- Stained and examined under a microscope
- Cultured (placed in conditions that encourage the growth of microorganisms)
- Tested for antibodies, produced by the person's immune system in response to the microorganism
- Tested for a microorganism's antigens (molecules from the microorganism that can trigger an immune response in the body)
- Tested for genetic material (such as DNA or RNA) from the microorganism

No single test can identify every microorganism, and tests that work well for one microorganism often do not work well for another. Doctors must choose the test based on which microorganisms they think are most likely to cause a disorder.

Some samples sent for testing, such as sputum, stool, and swabs from the nose or throat, normally contain many types of bacteria that do not cause disease. Doctors distinguish between these bacteria and those that could cause the person's illness. Other samples come from areas that normally do not contain any microorganisms (that are sterile), such as urine, blood, or cerebrospinal fluid (the fluid that surrounds the brain and spinal cord). Finding any bacteria in such samples is abnormal.

When a microorganism is identified, doctors can then do tests to determine which drugs are most effective against it (susceptibility tests), and effective treatment can be started sooner.

(From THE MERCK MANUAL)

1. *Match the terms with corresponding definitions:*

1. Microorganisms,
2. Bacteria,
3. Viruses,
4. Fungi,
5. Parasites

a) an organism that lives and feeds on or in an organism of a different species and causes harm to its host
b) any organism, such as bacterium, virus or protozoon, of microscopic size

c) any of various prokaryotic microorganisms of the domain Bacteria that may be free-living, saprophytic, commensal, or pathogenic and that vary widely in morphology, oxygen tolerance, nutritional and temperature requirements
d) any of various submicroscopic agents that infect living organisms, often causing disease, and that consist of a single or double strand of RNA or DNA surrounded by a protein coat.
e) any of numerous spore-producing eukaryotic organisms of the kingdom Fungi, which lack chlorophyll and vascular tissue and range in form from a single cell to a mass of branched filamentous hyphae that often produce specialized fruiting bodies. The kingdom includes the yeasts, mushrooms, and molds

2. *Find explanation for the following terms in the text:*
1. Pneumonia
2. Cultured microorganisms
3. Antigens
4. Cerebrospinal fluid
5. Susceptibility tests

3. *Which of the following was NOT discussed in the text:*
1. Types of microorganisms
2. Types of laboratory tests which can identify infections
3. Treatment of infectious diseases
4. Types of samples for laboratory tests
5. Infectious diseases in children
6. Ways to choose treatment after laboratory testing
7. The difference between different types of microscopes
8. Laboratory equipment

4. *Continue the statements:*
1. Infectious diseases are caused by…
2. Doctors suspect an infection based on…
3. Laboratory tests use a sample of…
4. Doctors must choose the test based on…
5. When a microorganism is identified, doctors…

5. *Write a short summary of the text*

Unit 11

Read the text

CULTURING MICROORGANISMS IN THE LABORATORY

In 1878 Robert Koch discovered how to grow bacteria in a Petri dish (named after his assistant Julius Petri). He was able to discover which bacteria caused certain diseases, including TB and cholera. Scientists still grow microorganisms in the lab so that they can be investigated.

Usually, a sample contains too few microorganisms to see using a microscope or to be identified using other tests. Thus, doctors usually try to

grow (culture) the microorganism in a laboratory until there are enough to identify. A sample is taken from an area of the person's body likely to contain the microorganism. Samples may include:

- Blood
- Sputum
- Urine
- Stool
- Tissue
- Cerebrospinal fluid
- Mucus from the nose, throat, or genital area

The action of antibiotics and disinfectants can be investigated using cultures of microorganisms (populations of microorganisms that have been grown for a purpose). It is important that the cultures are uncontaminated by other microorganisms, so sterile conditions are needed:

- the Petri dishes, nutrient agar jelly and other culture media must be sterilized
- the inoculating loops used to transfer microorganisms must be sterilized (usually by passing the metal loop through a Bunsen burner flame)
- the lid of the Petri dish is sealed with sticky tape to stop microorganisms from the air getting in and contaminating the culture.

Bacteria grow and reproduce more quickly when they are warm than when they are cold. It would be dangerous to incubate (keep and grow) cultures at temperatures close to body temperature (37 °C) because doing so might allow the growth of pathogens harmful to health. So the maximum temperature used in school and college labs is 25 °C. However, higher temperatures can be used industrially, and these produce faster growth.

Many microorganisms, such as the bacteria that cause urinary tract infections or strep throat, can easily be grown in a culture. Some bacteria, such as the bacteria that cause syphilis, cannot be cultured at all. Other bacteria, such as those that cause tuberculosis, can be cultured but take weeks to grow. Some viruses can be cultured, but many cannot.

(From THE MERCK MANUAL)

1. *Find the answers to the questions:*
   1. What is Robert Koch famous for?
   2. Where are samples taken from?
   3. How can the action of antibiotics and disinfectants be investigated?
   4. Why are sterile conditions necessary?
   5. Which temperature is preferable for culturing microorganisms?
   6. Can all microorganisms be cultured?

2. *Which of the following was NOT mentioned in the text?*
   1. History of culturing microorganisms
   2. Types of samples

3. Temperature necessary for culturing microorganisms
4. Drugs for tuberculosis
5. Treatment of urinary tract infections

3. *In the text, which words correspond to the following definitions?*
   1. a shallow circular dish with a loose-fitting cover, used to culture bacteria or other microorganisms
   2. a substance, such as penicillin, produced by or derived from certain microorganisms, including fungi and bacteria, that can destroy or inhibit growth of other microorganisms, especially bacteria
   3. free from live bacteria or other microorganisms
   4. the growing of microorganisms, tissue cells, or other living matter in a specially prepared nutrient medium
   5. matter coughed up and usually ejected from the mouth from the respiratory tract

4. *Find in the text information on methods of sterilization*

5. *Fill in the gaps in the summary of the text:*

   In 1878 R_____ K_____ discovered how to grow bacteria in a Petri dish. He was able to discover which b_____ caused certain diseases. Scientists still grow m_____ in the lab so that they can be investigated.

   Doctors usually c_____ the microorganism in a l_____ until there are enough to identify. A sample is taken from an area of the person's body likely to contain the microorganism. Samples may include: b_____, s_____, u_____, s_____, t_____, c_____f_____, m_____.

   B_____ grow and reproduce more quickly when they are warm than when they are cold. It would be dangerous to i_____cultures at temperatures close to body temperature because doing so might allow the growth of pathogens harmful to health.

Unit 12

Read the text

SPUTUM TESTS FOR TUBECULOSIS

The sputum sample is examined under a microscope to look for tuberculosis bacteria and is used to grow the bacteria in a culture. Microscopic examination provides results much faster than a culture but is less accurate. It detects only about half the cases of tuberculosis identified by culture. However, traditional cultures do not provide results for many weeks because tuberculosis bacteria grow slowly. For this reason, treatment of people who may have tuberculosis is often begun while doctors wait for results of sputum examination and culture. A widely available culture test can routinely identify *Mycobacterium tuberculosis* growth within 21 days.

Tests that increase the amount of the bacteria's genetic material (called nucleic acid amplification tests) can confirm the presence of in 24 to 48 hours. A sample of sputum is often used, but samples of other tissues such as a lymph node can be used if needed.

Genetic tests can also rapidly identify bacteria that are resistant to some of the usual drugs used to treat tuberculosis and thus can help doctors choose effective treatment. These tests detect mutations in the bacteria's genes that enable them to resist treatment with certain drugs.

The interferon-gamma release assay (IGRA) is a blood test that can detect tuberculosis. For this test, a sample of blood is mixed with synthetic proteins similar to those produced by the tuberculosis bacteria. If people are infected with tuberculosis bacteria, their white blood cells produce certain substances (interferons) in response to the synthetic proteins. The blood is then checked for the presence of interferons to determine whether tuberculosis infection is present.

This test, unlike tuberculin skin testing, is not influenced by recent vaccination against the disease.

A sample of sputum is usually adequate, but occasionally a doctor needs to obtain a sample of lung fluid or tissue to make the diagnosis. An instrument called a bronchoscope is inserted through the mouth or nostril and into the airways. It is used to inspect the bronchial tubes and to obtain a sample of lung fluid or tissue. This procedure is most often done when other disorders, such as lung cancer, are suspected.

(From THE MERCK MANUAL)

1. *Find in the text information on the purpose of the following tests, procedures and tools:*
   1. Nucleic acid amplification test
   2. Genetic test
   3. Interferon-gamma release assay
   4. Microscopic examination of sputum
   5. Bronchoscope
2. *Are the following statements true or false? Correct the false ones.*
   1. Microscopic examination provides results faster than a culture
   2. Genetic test can confirm the presence of TB infection in 24 to 48 hours
   3. Tuberculosis bacteria grow slowly
   4. The interferon-gamma release assay is a sputum test that can detect tuberculosis
   5. A doctor always needs to obtain a sample of lung fluid to confirm tuberculosis
3. *Find in the text the terms corresponding to the following definitions:*
   1. malignant tumor of the lungs
   2. an infectious disease caused by the tubercle bacillus and characterized by the coughing up of mucus and sputum, fever, weight loss, and chest pain

3. inoculation with a vaccine in order to protect against a particular disease
4. any of a group of glycoproteins that are produced by different cell types in response to various stimuli, such as exposure to a virus, bacterium, parasite, or other antigen
5. rod-shaped bacteria causing tuberculosis

4. *Find in the text information on the relationship between diagnostic tests and treatment*

5. *Write a brief summary of the text*

Keys

Unit 1

Task 1.

– blood; – breathing; – circulation; – heart; – airways

Task 2.

Airway, breathing, and circulation; cardiopulmonary resuscitation; human immunodeficiency virus

Task 3.

To assess a person's airway, breathing, and circulation,
To determine who is in most urgent need of treatment,
To consider whether the situation is life threatening, urgent, or not urgent,
To obtain information on a person's condition
To reassure and provide comfort

Task 4.

Medical information; family members; life threatening; hand sanitizer; examination gloves

Task 5.

1. The first priority is to assess a person's airway, breathing, and circulation (the ABCs)
2. Check airways for the presence of obstructions, breathing for difficulty and circulation for cardiac arrest
3. The rescuer should consider whether the situation is life threatening, urgent but not life threatening, or not urgent
4. Information should be obtained from bystanders, family members, or rescuers
5. Rescuers should avoid contact with blood from wounds, use latex or nitrile examination gloves, wash hands with soap and water or a mild solution of bleach or use alcohol-based hand sanitizer.

Unit 2

Task 1.

1. False, 2. True, 3. True, 4. True, 5. False

Task 2.

– patients are more likely to trust a doctor they know

– medical decisions are more easily made
– continuity of care and long-standing relationships with patients
– primary care doctor is informed about all of a person's health care needs
– patients experience less anxiety when a medical problem develops

Task 3.

To provide general medical care and be responsible for overall care, including the coordination of medical specialists and supportive care, to explain what type of care is needed, why it is needed, and how often visits should be scheduled, to refer people to specialists when needed and coordinate care with other health care practitioners.

Task 4.

1. The primary care practitioner provides general medical care
2. People who have a primary care doctor are less likely to go to an emergency department unnecessarily
3. Technology is also available to available to communicate information
4. Some health care plans require people to see their primary care doctor to get a referral before they see a specialist
5. Referral also ensures that people see the proper specialist

Task 5.

Primary care practitioner; medical care; relationships; referral

Unit 3

Task 1.

1. Diseases associated with aging
2. The work of a geriatrician
3. Bodily functions
4. Examination of the elderly
5. Retirement program for disabled
6. Retirement benefits

Task 2.

– Age 65 has been designated as the beginning of old age
– Some people are biologically old at 40
– An 80-year-old who works, plans, looks forward to future events, and participates in many activities is considered psychologically young
– Most people do not need the expertise of a geriatrician (a doctor who specializes in the care of the elderly) until they are 70 to 75 years old

Task 3.

– Aging is a gradual, continuous process of natural change that begins in early adulthood
– Chronologic age is based solely on the passage of time
– Biologic age refers to changes in the body that commonly occur as people age
– Psychologic age is based on how people act and feel
– A geriatrician is a doctor who specializes in the care of the elderly

Task 4.

1. True, 2. False, 3. True, 4. False, 5. True

Task 5.

Aging – Growing old; Retirement – Stopping work; Adulthood – Maturity; Affect – Influence; Elderly – Old; Decline - Reduce

Unit 4

Task 1.

Brain; homeostasis; kidney; digestive system; cardiovascular system

Task 2.

1. Communication allows the body to adjust the function of each organ according to the needs of the whole body
2. Epinephrine (adrenaline) is a hormone, one of the best known transmitters.
3. Fight-or-flight response is when a person is suddenly stressed or frightened, the brain instantly sends a message to the adrenal glands, which quickly release epinephrine. Within moments, this chemical has the entire body on alert
4. Communications to maintain homeostasis occurs by means of the autonomic nervous system and the endocrine system
5. Homeostasis is the term used to describe how the body maintains its normal composition and functions

Task 3.

1. Communication allows the body to adjust the function of each organ according to the needs of the whole body. In the example above, the heart needs to know when the digestive organs need more blood so that it can pump more
2. The autonomic nervous system and the endocrine system
3. Special chemicals called transmitters carry out the communications
4. Adrenal glands release epinephrine

5 The heart beats more rapidly and powerfully, the eyes dilate to allow more light in, breathing quickens, and the activity of the digestive system decreases to allow more blood to go to the muscle

Task 4.

Digestive system; blood; cardiovascular system; nervous system; blood vessels; blood; nerve; brain; heart; bloodstream; brain; muscles

Unit 5

Task 1.

1. Molecular structure of drugs
2. Types of dietary supplements
3. Manufacturing of drugs
4. The work of pharmaceutical companies
5. Routes of drugs administration
6. Standards of drugs safety
7. Allergies to drugs

Task 2.

1. A drug is any substance intended for use in the diagnosis, cure, relief, treatment, or prevention of disease or intended to affect the structure or function of the body
2. Two categories of drugs include prescription drugs and nonprescription drugs
3. Prescription drugs are those dispensed only with a prescription from a licensed professional with governmental privileges to prescribe
4. Nonprescription drugs are sold over the counter
5. Dietary supplements may contain vitamins, amino acids, minerals, and herbs or other plant-derived material
6. Dietary supplements do not require approval because they are not classified as drugs
7. Every drug has at least three names, such as a chemical name, a generic (nonproprietary or official) name, and a brand (proprietary or trademark) name
8. Generic names are assigned by an official body
9. Chemical names are related to the atomic or molecular structure of the drug
10. Brand names are chosen by the pharmaceutical company that manufactures or distributes the drug

Task 3.

1 – e; 2 – c; 3 – a; 4 – b; 5 – d

Task 4.

1 – c; 2 – a; 3 – e; 4 – d; 5 – b

Unit 6

Task 1.

CBC – complete blood count, MCHC – mean cellular hemoglobin concentration, RBC – red blood cell count, Hct – hematocrit, Hb, MCV – mean cellular volume, RDW – red cell distribution width, MCH – mean cellular hemoglobin

Task 2.

1. Number of red blood cells, proportion of blood made up of red blood cells, amount of hemoglobin in the blood, average size of red blood cells, variability of size of red blood cells, amount of hemoglobin in an individual red blood cell, concentration of hemoglobin in an individual red blood cell
2. Total number of white blood cells, percentages and numbers of the different types of white blood cells
3. Neutrophils, lymphocytes, monocytes, eosinophils, and basophils
4. The number of white blood cells of each type
5. To form blood clots for stopping bleeding
6. A high number of platelets
7. Cancer of the white blood cells
8. The microscopic examination can identify features of the cells that are characteristic of certain diseases

9. Knowing the specific shape and size of red blood cells can help a doctor diagnose a particular cause of anemia.
10. Cells that have a very immature appearance

Task 3.

1. Cellular components of the blood include red blood cells, white blood cells and platelets
2. The white blood cells play are responsible for blood clotting
3. There are five types of platelets
4. Large numbers of immature white blood cells can indicate cancer of the white blood cells
5. Formation of blood clots is important to stop bleeding

Task 4.

1 – b; 2 – d; 3 – c; 4 – e; 5 – a

Unit 7

Task 1.

ESR – erythrocyte sedimentation rate, CCP – cyclic citrullinated peptide, DNA – deoxyribonucleic acid

Task 2.

ESR test – inflammation; Rheumatoid factor – rheumatoid arthritis; Lupus –- autoimmune antibodies; Genetic test – spondyloarthritis; Creatine kinase – destruction of muscle

Task 3.

1. Prevention of musculoskeletal disorders
2. Types of tests to diagnose musculoskeletal diseases
3. Musculoskeletal diseases in elderly
4. Treatment of musculoskeletal diseases

Task 4.

1. Inflammation
2. Test
3. Enzyme
4. Gene
5. Antibody

Task 5.

Examination; diagnosis; tests; treatment

Unit 8

Task 1.

1. Indications to biopsy
2. Spinal tap procedure
3. Cerebrospinal fluid content
4. Findings suggesting certain disorders
5. Contraindications to a spinal tap

Task 2.

1. Lumbar puncture
2. Removal of a small sample of muscle tissue to examine under a microscope
3. Infection and inflammation of the tissues covering the brain and spinal cord
4. Infection and inflammation of the brain
5. The part of a spinal nerve next to the spinal cord

Task 3.

1 – e; 2 – d; 3 – f; 4 – c; 5 – g; 6 – a; 7 – b

Task 4.

1. Indications to biopsy include cases when doctors cannot determine the cause of the nerve damage or muscle weakness based on results of blood tests, imaging tests, or nerve conduction studies
2. The sample of tissue for biopsy is usually taken from an area where symptoms occur
3. In a spinal tap cerebrospinal fluid is checked for evidence of infections, tumors, and bleeding in the brain and spinal cord
4. Normally cerebrospinal fluid contains few red and white blood cells and is clear and colorless
5. Contraindications to a spinal tap are when the pressure within the skull is increased, when there is a mass (such as a tumor or abscess) in the brain

Unit 9

Task 1.

ALT – Alanine transaminase, AST – Aspartate transaminase, PT – prothrombin time, INR – international normalized ratio

Task 2.

1 – b; 2 – a; 3 – c; 4 – d; 5 – e.

Task 3.

1. Liver function tests are blood tests that represent a noninvasive way to screen for the presence of liver disease
2. Alanine transaminase, albumin, alkaline phosphatase, alpha-fetoprotein, aspartate transaminase, bilirubin, gamma-glutamyl transpeptidase, etc.
3. Levels of some of these substances measure how well the liver performs its normal functions of making proteins and secreting bile.
4. The liver synthesizes some proteins necessary for blood clotting, called blood clotting factors
5. An abnormal PT or INR result can indicate an acute liver disorder.

Task 4.

PT is used to calculate the international normalized ratio. PT is a measure of the time needed for blood to clot. An abnormal PT result can indicate an acute liver disorder. In chronic liver disorders, an increasing PT typically indicates progression to liver failure.

Task 5.

Injury; liver; blood; treatment; laboratory; samples; enzymes; proteins; bile

Unit 10

Task 1.

1 – b; 2 – c; 3 – d; 4 – e; 5 – a.

Task 2.

1. A lung infection
2. Placed in conditions that encourage the growth of microorganisms
3. Molecules from the microorganism that can trigger an immune response in the body
4. Fluid that surrounds the brain and spinal cord
5. Tests to determine which drugs are most effective against a certain condition

Task 3.

1. Treatment of infectious diseases
2. Infectious diseases in children
3. The difference between different types of microscopes
4. Laboratory equipment

Task 4.

1. Infectious diseases are caused by microorganisms, such as bacteria, viruses, fungi, and parasites
2. Doctors suspect an infection based on the person's symptoms, physical examination results, and risk factors
3. Laboratory tests use a sample of blood, urine, sputum, or other fluid or tissue from the body
4. Doctors must choose the test based on which microorganisms they think are most likely to cause a disorder.
5. When a microorganism is identified, doctors can then do tests to determine which drugs are most effective against it

Unit 11

Task 1.

1. He discovered how to grow bacteria
2. From an area of the person's body likely to contain the microorganism
3. Using cultures of microorganisms
4. It is important that the cultures are uncontaminated by other microorganisms
5. Bacteria grow and reproduce more quickly when they are warm than when they are cold
6. Not all microorganisms be cultured

Task 2.

1. Drugs for tuberculosis
2. Treatment of urinary tract infections

Task 3.

1. Petri dish
2. Antibiotic
3. Sterile
4. Culture
5. Sputum

Task 4.

the inoculating loops used to transfer microorganisms must be sterilized (usually by passing the metal loop through a Bunsen burner flame); the lid of the Petri dish is sealed with sticky tape to stop microorganisms from the air getting in and contaminating the culture.

Task 5.

Robert Koch; bacteria; microorganisms; culture; laboratory; blood; stool; urine; sputum; tissue; cerebrospinal fluid; mucus; bacteria; identify

Unit 12

Task 1.

1. Can confirm the presence of *Mycobacterium tuberculosis* in 24 to 48 hours
2. Can identify bacteria that are resistant to some of the usual drugs used to treat tuberculosis
3. Can detect tuberculosis
4. It provides results much faster than a culture but is less accurate. It detects only about half the cases of tuberculosis identified by culture
5. It is used to inspect the bronchial tubes and to obtain a sample of lung fluid or tissue

Task 2.

1. True, 2. False, 3. True, 4. False, 5. False

Task 3.

1. Lung cancer
2. Tuberculosis
3. Vaccination
4. Protein
5. *Mycobacterium tuberculosis*

Task 4.

Diagnostic tests can confirm the presence of microorganisms and also can identify bacteria that are resistant to some of the usual drugs

Навчальне видання

ЗАВДАННЯ ДЛЯ ДОМАШНЬОГО ЧИТАННЯ АНГЛІЙСЬКОЮ МОВОЮ

Для магістрів другого курсу спеціальності "Технології медичної діагностики"

Упорядники Кальницька Віолета Борисівна

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ENGLISH READING COMPREHENSION PRACTICE

For second-year Master students in specialty "Technologies of medical diagnosis"