МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ

Центр тестування професійної компетентності фахівців з вищою освітою напрямів підготовки "Медицина" і "Фармація" при Міністерстві охорони здоров'я України

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Прізвище										
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Варіант 84

Збірник тестових завдань для складання тестового компоненту етапу 1 ЄДКІ

Спеціальність "МЕДИЦИНА"

ІСПИТ З ІНОЗЕМНОЇ МОВИ ПРОФЕСІЙНОГО СПРЯМУВАННЯ

(англійська)

1. A 6-year-old boy is brought to the pediatrician by his mother, who complains of low-grade fever, chronic cough and night sweats in her child. She describes the cough as productive, producing white sputum that is sometimes streaked with blood. She also says that her son has lost some weight in the last month. His vital signs include blood pressure of 115/75 mm Hg, heart rate of 110/min., respiratory rate of 18/min. and temperature of 36.6°C. On physical examination, the patient is ill looking. Pulmonary auscultation reveals some fine crackles in the right upper lobe. The pediatrician suspects an active infection and performs Mantoux test. Intradermal injection of which of the following substances has been most likely used by pediatrician for the screening test in this clinical case?

A. Diphtheria-tetanus toxoids-acellular pertussis vaccine (DTaP)
B. Tuberculin
C. Bacillus Calmette-Guerin (BCG) vaccine
D. -
E. Tetanus and diphtheria toxoids vaccine (Td)

2. A 20-year-old female comes to the clinic after missing her last 2 periods. Her cycles are usually regular, occurring at 28-30 day interval with moderate bleeding and some abdominal discomfort. She also complains of progressively diminishing peripheral vision. Her doctor reveals loss of vision in the lateral halves of both eyes. Involvement of which of the following structures would you most likely expect to be the reason of bitemporal hemianopsia?

A. Optic chiasm
B. Right optic nerve
C. Left optic tract
D. Right optic tract
E. Left optic nerve

3. A 25-year-old male presents to an emergency department with sudden-onset right-sided pleuritic chest pain and breathlessness. On examination, he has arterial blood saturation of 90% in air and is afebrile. An X-ray shows a lung edge visible in the right hemithorax, beyond which no lung markings are seen. Which of the following conditions has most likely occured in this patient?

A. Pneumonia
B. Aerophagy
C. Pleurisy
D. Pneumothorax
E. Rib fracture

4. A 14-year old girl presents to the emergency department for evaluation of an "infected leg". She states there is no history of trauma but mentions she had a history of sickle cell disease. On physical examination, her upper part of the right shin is very painful, red, swollen, and hot. Her temperature is 39.2°C. An X-ray shows focal bony lysis and loss of trabecular architecture in the metaphysis of the right tibia. Increased activity of which of the following cells is the most likely cause of bone reabsorption in this patient?

A. Osteocytes
B. Osteoblasts
C. Chondrocytes
D. Osteoclasts
E. Chondroblasts

5. A 24-year-old man undergoes a surgery and during the operation, an organ is excised and sent for histological evaluation. A light microscopic examination reveals the organ encased by thin connective tissue capsule that enters the substance of the lobes to further subdivide the organ into irregular lobular units. Each lobule contains a cluster of follicles filled with colloid. Follicular epithelium consists of low columnar, cuboidal or squamous cells, depending on the level of activity of the follicle. Which of the following organs does this tissue most likely belong to?

A. Pancreas
B. Parathyroid gland
C. Thymus
D. Parotid gland
E. Thyroid gland

6. The doctor evaluates his patient's spyrography. One of the evaluation parameters represents the normal amount of air displaced between normal inhalation and exhalation without any extra efforts or appointments. Which of the following is being evaluated in this case?

A. Total lung capacity
B. Vital volume
C. Tidal volume
D. Residual volume
E. Inspiratory capacity

7. A medical student studies a waste disposal system in human epithelial cells. During electronic microscopy he reveals the spherical vesicles, surrounded by a membrane and containing many different hydrolytic enzymes. The main function of these organelles is to provide intracellular digestion and protective reactions of the cell. Which of the following organelles is mentioned above?

A. Centrosomes
B. Mitochondria
C. Lysosomes
D. Ribosomes
E. Endoplasmatic reticulum

8. A 38-year-old woman, who was diagnosed with systemic lupus erythematosus (SLE) 3 years ago, comes to her physician with a complaint of facial swelling and decreased urination that she first noticed 2 weeks

ago. She currently takes azathioprine and a corticosteroid. Her vital signs show blood pressure - 150/90 mm Hg, pulse - 91/min., temperature - 36.8^oC and respiratory rate - 15/min. On physical examination, the doctor notices erythematous rash on her face exhibiting a butterfly pattern. The laboratory studies reveal hypercholesterolemia, hypertriglyceridemia and proteinuria. Which of the following is the most likely mechanism of SLE's complication in this patient?

A. -
B. Decrease in renal blood flow (ischemic nephropathy)
C. Acute infection of the kidney
D. Increased plasma oncotic pressure
E. Immune complex-mediated glomerular disease

9. A pathologist studies a specimen of the small bean-shaped structure which is the part of human immune system. In a cross section it consists of an outer layer (cortex) and inner layer (medulla), and is surrounded by a fibrous capsule and subscapular sinus and is about 1.8 cm long. Which of the following is being studied by the pathologist?

A. Parathyroid gland
B. Thymus
C. Lymph node
D. Spleen
E. Salivary gland

10. A 46-year-old man presents with fatigue and joint pain in his fingers and wrists for the last 2 months. The pain is present in both hands and the wrists are swollen. Furthermore, he describes morning stiffness in his joints lasting about 2 hours, which improves with use. His past medical history reveals he has been successfully treated for *H. pylori* related ulcers last year. He denies smoking and stopped drinking when his gastric symptoms started. Which of the following drugs is the best choice for his joint pain management?

A. Celecoxib
B. Paracetamol
C. Prednisone
D. Morphine
E. Aspirin

11. A researcher is investigating the relationship between inflammatory mediators. He performs an experiment, investigating the effect of nonsteroidal anti-inflammatory drugs (NSAIDs) on patients with high-grade fever. His research indicates that certain NSAIDs act as competitively reversible inhibitors of the cyclooxygenase (COX) enzymes. It is known that COX catalyzes the formation of prostaglandins from a certain molecule that itself is derived from the cellular phospholipid bilayer by phospholipase A2. Which of the following molecules is a precursor of an inflammatory mediators mentioned above?

A. Arachidonic acid
B. Tyrosine
C. Cholesterol
D. Proopiomelanocortin
E. Palmitic acid

12. A doctor refers the patient to a gastroenterologist for a stomach acid test and an upper gastrointestinal endoscopy, which revealed that this patient is a heavy acid producer and has a gastric peptic ulcer. Which of the following is the most likely causative organism for this patient's condition?

A. Salmonella
B. Leptospira
C. Shigella
D. Helicobacter
E. Listeria

13. A 16-year-old girl concerned about her sexual development comes to the physician. She mentions that she has still not had a menstrual period. However, she is otherwise a healthy girl with no significant medical problems since birth. On physical examination, her vital signs are stable. She does not have pubic hair and her breast is slightly elevated with areola remaining in contour with surrounding breast. Which of the following is the most likely cause of this abnormal physical development?

A. Hypothyroidism
B. Ovarian insufficiency
C. Adrenal medulla hyperfunction
D. Pancreatic islet insufficiency
E. Hyperthyroidism

14. A 72-year-old female patient suffers from a long-standing heart failure. She presents to the hospital with a cough and dyspnea on exertion for 1 week. Her symptoms worsen at night and she has noticed that her sputum is pink and frothy. Chest auscultation reveals bilateral fine crepitations over the lung bases. The physician prescribes a drug that reduces preload. Which of the following is the most likely drug prescribed by the physician?

A. Triamterene
B. Spironolactone
C. Acetazolamide
D. Clopamide
E. Furosemide

15. Physiological solution is an isotonic diluent used to maintain cell integrity and viability in procedures that require preparation of test suspension of organisms. This sterile solution in water provides osmotic protection for microbial cells. Which of the following concentrations of $NaCl$ is considered to be physiological?

A. 0.09%
B. 9%
C. 0.5%
D. 10%
E. 0.9%

16. A patient suffers from a condition which is characterised by a restriction in blood supply to tissues which leads to inadequate oxygen delivery to cells and contravention of cell metabolism. It is often caused by partial or total blockage of arteries. Which of the following is developed in this patient?

A. Ischemia
B. Hypoxia
C. Inflammation
D. Spasm
E. Embolism

17. A 28-year-old male patient presents to the physician with pain and discomfort in his right lower extremity. On physical exam, palpation of the patient's pulses reveals the absence of pulsation in the dorsalis pedis and tibialis posterior arteries, while the pulsation on the femoral artery is present. The skin of his extremity is also pale and cold. Which of the following arteries is most likely damaged in this patient?

A. Descending genicular artery
B. Deep femoral artery
C. Tibial artery
D. Popliteal artery
E. External iliac artery

18. This action is an involuntary and nearly instantaneous movement in response to a stimulus. It is made possible by neural pathways which can act on an impulse before that impulse reaches the brain and does not require conscious thought. Which of the following actions is described above?

A. Reflex
B. Neuralgia
C. Tetanus
D. Initiation
E. Defense

19. The main function of the human glands are to produce and release substances that perform a specific function in the body. According to the classification there are endocrine and exocrine glands. But also there are glands that may be classified as both. Which of the following glands can be endo- and exocrine simultaneously?

A. Salivary
B. Parathyroid
C. Lacrimal
D. Sebaceous
E. Gastrointestinal

20. With total starvation the only source of water for the body is the oxidation process of organic compounds. Which of the following substances under these conditions is the main source of endogenic water?

A. Lipoproteins
B. Lipids
C. Carbohydrates
D. Glycoproteins
E. Proteins

21. A 21-year-old woman who is a medical student is undergoing evaluation after sticking herself with a needle while drawing blood from a patient. In this case a medical professional is at high risk of getting a blood-transmitted infection. Which of the following diseases is least likely to be transmitted via blood?

A. HBV
B. AIDS
C. HIV
D. HCV
E. SLE

22. A 37-year-old man is admitted to a hospital with mental confusion and disorientation. His wife reports he became more irritable and forgetful in the past year. In addition, she notes that he became a vegan a year ago, and currently, his diet consists of starchy foods like potatoes, corn, and leafy vegetables. GI symptoms include anorexia, diarrhea and vomiting. He has glossitis and skin lesions that appear as vesicles over the extremities. Eczema-like lesions around the mouth, as well as desquamation and roughened skin over the hands, are also present. Neurologic examination reveals symmetrical hypesthesia for all types of sensation in both upper and lower extremities in a "gloves and socks" distribution. Deficiency in the diet the of which of the following amino acids is the most likely cause of this condition?

A. Threonine
B. Arginine
C. Tryptophan
D. Lysine
E. Histidine

23. The healthcare provider performs a complete blood count to find out if the bone marrow is making the right number of blood cells. He studies a blood cell that has no nucleus and has a function to react to bleeding of an injured blood vessel by clumping, thereby initiating a blood clot. Which of the following is the main object of testing?

A. Prothrombine
B. Stem cells
C. Leukocytes
D. Platelets
E. Macrophages

24. A research group is investigating a complex of three enzymes. They have created

cultures of myocytes derived from high-performance college athletes and simulated starvation conditions. After the experiment they concluded that during starvation the amount of this complex in the muscle tissue was higher. The complex converts pyruvate into acetyl-coenzyme-A, which enters the citric acid cycle (Krebs cycle) under aerobic conditions. This reaction also involves the further reduction of NAD+ molecules into NADH. An activating effect of which of the following enzymes is described above?

A. Lactate dehydrogenase
B. Hexokinase
C. Phosphorylase
D. Pyruvate dehydrogenase
E. Phosphofructokinase

25. An 18-year-old girl comes to her physician with concern about her health because she has not achieved menarche. She denies any significant weight loss, changes in mood, or changes in her appetite. She mentions that her mother told her about mild birth defects, but she cannot recall the specifics. Past medical history and family history are benign. On physical examination, the patient is short in stature, has a short and webbed neck and wide chest. Staining of buccal smear reveals absence of Barr bodies in the nucleis of epithelial cells. A urine pregnancy test is negative. Which of the following genetic disorders is the most likely cause of this patient's condition?

A. Turner syndrome
B. Edwards syndrome
C. Klinefelter syndrome
D. Cri du chat ("cat-cry") syndrome
E. Patau syndrome

26. A bone marrow biopsy of an 8-year-old girl shows a group of cells which has undergone the process of pyknosis and loss of the nucleus during its differentiation. Which of the following types of hemopoiesis is characterised by the morphological changes described above?

A. Granulocytopoesis
B. Thrombocytopoesis
C. Monocytopoesis
D. Lymphocytopoesis
E. Erytropoesis

27. A 60-year-old man with a history of hypertension, diabetes and hyperlipidemia had a sudden onset of right-sided weakness. By the time the ambulance arrived, he had difficulty speaking. Unfortunately, the patient died within the next 2 hours and an autopsy was performed immediately. The gross examination of the cerebral left hemisphere showed brain swelling, widened gyri and poorly demarcated gray-white junction. Which of the following is the most likely cause of this patient's death?

A. Tumor
B. Abscess
C. Ischemic stroke
D. Cyst
E. Intracerebral hemorrhage

28. A 12-year-old boy presents with progressive clumsiness and difficulty walking. He walks "like a drunken-man" and has experienced frequent falls. His muscle tone and strength in all 4 limbs are slightly decreased. When he is asked to stand with his eyes closed and with both feet close together, he sways from side to side, unable to stand still. Which of the following brain regions is most likely affected and caused the symptoms described above?

A. Right hemisphere
B. Substantia nigra
C. Red nucleus
D. Cerebellum
E. Reticular formation

29. A biology graduate student is performing an experiment in the immunology laboratory. He studies a blood cell count from a patient with acute appendicitis, which shows an increase in the number of cells having a multilobed nucleus and multiple cytoplasmic granules. These cells engulf pathogens or necrotic tissue and help in the degradation of foreign products. Which of the following procesesses is seen in the cell described above?

A. Phagocytosis
B. Pinocytosis
C. Osmosis
D. Parietal digestion
E. Passive diffusion

30. A 27-year-old female presents with a severe sore throat, hoarseness, painful swallowing and low-grade fever. On intraoral examination, a large grey membrane is noticed on the oropharynx. Removal of the membrane reveals a bleeding oedematous mucosa. Which of the following is the most likely diagnosis?

A. Streptococcal pharyngitis
B. Diphtheria
C. Meningococcal disease
D. Scarlet fever
E. Measles