

Приклади тестових завдань

**ІСПИТ З ІНОЗЕМНОЇ МОВИ
ПРОФЕСІЙНОГО СПРЯМУВАННЯ
для спеціальності “Стоматологія”
(англійська)**



1. In microanatomy of some organs, there is a sheet-like structure, which underlies virtually all epithelia. It consists of basal lamina (made of type IV collagen, glycoproteins, and proteoglycans) and reticular lamina. Under the microscope, you can see it as a pink line under the epithelial cells. Which of the following is described above?

- A. Basement membrane
- B. Nucleus
- C. Plasma membrane
- D. Endoplasmic reticulum
- E. -

2. A 58-year-old male patient visited his dentist with the chief complaint of itching and burning sensation in his mouth. On intraoral examination, diffuse white patches were seen on his tongue, right and left buccal mucosa, as well as on his hard palate and soft palatal region. The potassium hydroxide (KOH) preparation of the specimen revealed non-pigmented septate hyphae. Administration of which of the following is the most appropriate initial step in treatment of this patient?

- A. Nystatin
- B. Gentamicin
- C. Tetracycline
- D. Penicillin
- E. -

3. All of the teeth in the mouth together are referred to as the dentition. Humans have two dentitions throughout life: one during childhood, called the primary dentition, and one that will hopefully last throughout adulthood, called the permanent (secondary) dentition. The first permanent molars usually begin their eruption by/at:

- A. Six to seven years of age
- B. Twelve months of age
- C. Four to five years of age
- D. Birth
- E. -

4. Persistent and heavy proteinuria (albuminuria) associated with nephrotic syndrome leads to hypoalbuminemia, which changes plasma pressure resulting in severe generalized edema. According to the description which of the following circumstances tends to cause nephrotic edema?

- A. Decreased plasma oncotic pressure
- B. Increased tissue hydrostatic pressure
- C. Increased plasma oncotic pressure
- D. Decreased venous pressure
- E. -

5. The dentist should inject a local anesthetic to reduce pain sensation in the maxillary molars and adjacent facial soft tissue and gingiva. He inserts the needle through

oral mucosa at the height of the maxillary vestibular fornix just posterior to the maxillary tuberosity. The needle is directed medially and superiorly toward the alveolar canals. Which of the following nerves is most likely to be blocked?

- A. Posterior superior alveolar nerve
- B. Inferior alveolar nerve
- C. Buccal nerve
- D. Nasopalatine nerve
- E. -

6. During histologic examination of the skeletal muscle specimen, the investigator discovers an organelle that has 2 membranes: smooth outer membrane and internal, that forms multiple ridges of visible folds (crysts). Which of the following is the most likely function of this structure?

- A. Synthesis and energy accumulation in the form of ATP
- B. Synthesis of carbohydrates
- C. Formation of mitotic spindle
- D. Intracellular digestion of macromolecules
- E. -

7. During an experiment, the neurophysiologist studies the conductivity of a nerve fiber. At first an axon was stimulated by a threshold stimulus, then the next three stimuli as strong as the first one were applied. What was characteristic of the resulting impulse in the latter instance?

- A. The same amplitude and velocity
- B. The same amplitude but lower velocity
- C. Smaller amplitude but the same velocity
- D. Three times the amplitude and velocity
- E. -

8. Examination of an oral cavity shows puffy gums, pus between teeth and gums, contact bleeding. The dentist suspects serious gum infection that damages the soft tissue and destroys the bone that supports the teeth. This pathology can cause teeth to loosen or lead to tooth loss. Which of the following is the most likely diagnosis?

- A. Periodontitis
- B. Galvanosis
- C. Xerostomia
- D. Acute sialadenitis
- E. -

9. During an experiment, students were asked to hold their breath as long as possible. At the end of the test, they developed changes in the partial pressure of blood gases and increase in the breathing rate (hyperventilation). All these processes are required for maintenance of proper oxygenation and normal homeostasis. Which of the following changes is most likely to stimulate action of the respiratory center and cause hyperventilation in these students?

- A. Increase of $p\text{CO}_2$
- B. Increase of $p\text{O}_2$
- C. Decrease of $p\text{CO}_2$
- D. Decrease of $p\text{O}_2$
- E. -

10. A molecular-level-process of spontaneous passive transport of water-soluble molecules across a cell membrane is modeled. The molecules move across cell membranes from an area of higher concentration toward an area of lower concentration via specific transmembrane integral proteins. This transport does not directly require chemical energy from ATP hydrolysis. Which of the following transport mechanisms is most likely mentioned?

- A. Facilitated diffusion
- B. Osmosis
- C. Pinocytosis
- D. Active transport
- E. -

11. Histologic examination of a biopsy specimen shows a structure of the oral cavity composed of the bone tissue, which is covered by stratified squamous non-keratinizing epithelium and lamina propria. The specimen has also minor mucous salivary glands. In all parts of the lamina propria the collagenous fibers form thick bundles that bind the mucosa to the periosteum. Based on these findings, which of the following is the most likely structure?

- A. Hard palate
- B. Soft palate
- C. Lip
- D. Cheek
- E. Tongue

12. A 28-year-old female patient dies of progressive respiratory failure after she was diagnosed with comminuted fracture of the right hip. Prior to her death she developed severe hypoxemia, neurologic abnormalities, and petechial rash. At autopsy, examination of pulmonary microvasculature shows intraluminal orange sudanophilic droplets. Which of the following complications is the most likely cause of this patient's death?

- A. Fat embolism
- B. Air embolism
- C. Amniotic fluid embolism
- D. Tumor embolism
- E. Thromboembolism

13. A 37-year-old male was admitted to a hospital complaining of abdominal pain, difficulty in swallowing and breathing, constipation, and nausea. He developed respiratory failure and required endotracheal intubation and ventilation. Two days before, the patient consumed dried salted fish bought from an artisanal producer.

Laboratory investigation for infectious pathogen was performed using Kitt-Tarozzi's method. Observation under a bright field microscopy revealed the presence of typical microorganisms with "tennis racket" appearance. Which of the following is the most likely diagnosis?

- A. Botulism
- B. Nontyphoidal Salmonella infection
- C. Cholera
- D. Shigella infection
- E. Typhoid fever

14. A 42-year-old female comes to the physician 2 days after the sudden onset of pain and swelling of her right knee. She has had no injury. Examination of the right knee shows warmth, erythema, and effusions. Laboratory studies show an increase in the concentration of acute phase reactants. Which of the following is the most appropriate pharmacotherapy for this patient?

- A. Nonsteroidal anti-inflammatory drugs (NSAIDs)
- B. Opioids
- C. Antidepressants
- D. Antibiotics
- E. Sulfonamides

15. An 11-year-old boy comes to the pediatric dentist with the chief complaint of "not being able to close his left eye or smile." Examination reveals the disappearance of the nasolabial fold, the left eyebrow sagging, and partial inability to close the left eye. Which of the following nerves is most likely affected?

- A. Facial nerve
- B. Glossopharyngeal nerve
- C. Trigeminal nerve
- D. Accessory nerve
- E. Hypoglossal nerve

16. A 35-year-old woman is brought to the physician because of a 4-month history of progressive weakness of both lower limbs. She notes difficulty climbing stairs and complains of lethargy and loss of muscle bulk. Her diet consists primarily of "polished" rice. A diagnosis of dry beriberi is suspected. Deficiency of which of the following vitamins is most likely to be detected in her blood?

- A. Vitamin B_1 (thiamine)
- B. Vitamin B_2 (riboflavin)
- C. Vitamin B_3 (niacin)
- D. Vitamin B_6 (pyridoxine)
- E. Vitamin C (ascorbic acid)

17. A 25-year old woman is admitted to the hospital because of a 6-week history of double vision and difficulty to talk after prolonged speaking. Her husband reports fluctuating droopy eyelids in the morning and evening. An immunologic assay detects the presence of circulating autoantibodies against the certain

receptors at the neuromuscular junction. Affected binding of which of the following neurotransmitters is the most likely cause of this patient's symptoms?

- A. Acetylcholine
- B. Epinephrine
- C. Dopamine
- D. Serotonin
- E. γ -aminobutyric acid (GABA)

18. In the experiment an investigator reveals that glucose is actively taken up by cells (except brain cells). Moreover, gluconeogenesis in liver is stimulated and glycogen synthesis in liver and muscles is increased. Which of the following hormones is most likely responsible for these changes?

- A. Insulin
- B. Glucagon
- C. Somatostatin
- D. Triiodothyronine (T3)
- E. Aldosterone

19. At autopsy, section of the right ovary shows a round lesion 2.5 cm in diameter with a clear serous fluid, surrounded by a smooth glistening membrane. Which of the following macroscopic lesions best represents the autopsy findings?

- A. Cyst
- B. Nodule
- C. Ulcer
- D. Infiltrate
- E. Nodule with central necrosis

20. A 34-year-old male comes to the dentist because of a 1-year history of swelling in the right upper jaw. On intraoral examination, a single diffuse 2x1.5 cm swelling is seen on the right side of anterior maxilla. A biopsy specimen of the lesion shows numerous thin-walled sinusoids in the connective tissue, hemosiderin deposition, and numerous giant cells in a hemorrhagic background. Which of the following is the most likely diagnosis?

- A. Giant cell epulis
- B. Granular cell ameloblastoma
- C. Cavernous hemangioma
- D. Gingival fibromatosis
- E. -

21. A 70-year-old patient is brought to the emergency department by his son because of blurry vision and dysarthria. His son says, "Father is always thirsty and has difficulty with urination." Examination reveals dry skin, cutaneous vasodilation, nonreactive mydriasis, and hyperthermia. Drug overdose is suspected. Which of the following drugs is the most likely cause of this patient's toxicity?

- A. Atropine
- B. Carbachol
- C. Metamizole
- D. Clonidine
- E. Reserpine

22. A 6-year-old girl with diphtheria is administered an intravenous injection of diphtheria antitoxin. Ten days after the initial administration of drug, she develops a pruritic rash, fever, and arthralgias. Which of the following is the most likely diagnosis?

- A. Serum sickness
- B. Anaphylaxis
- C. Atopy
- D. Delayed type hypersensitivity
- E. Allergic contact dermatitis

23. In order to accurately identify etiology of peptic ulcer disease, polymerase chain reaction (PCR) analysis was performed on gastric biopsy specimen taken from 47-year-old patient. Eventually, the test result was positive for *H. pylori*. Which of the following was most likely detected in PCR analysis?

- A. Bacterial DNA
- B. *H. pylori* bacterium itself
- C. Bacterial antigen
- D. Bacterial toxin
- E. Bacterial enzymes - urease and catalase

24. A 40-year-old male comes to the physician because of recurrent painful flares and swelling of the metatarsal-phalangeal joint of the great toe. Laboratory study of urine sample shows extremely low pH and pink discoloration. Which of the following metabolic intermediates is the most likely cause of changes in this patient's urine?

- A. Uric acid
- B. Chloride
- C. Ammonia
- D. Tricalcium phosphate
- E. Magnesium sulfate

25. A patient with Leber's hereditary optic neuropathy comes for genetic counseling. After the family history taking, the genetic counselor constructs pedigree, which displays a distinct mode of inheritance: his disease is transmitted only from affected females to their offspring. Both males and females are affected. None of the offspring of an affected male is affected. Which of the following modes of inheritance is identified by the counselor?

- A. Mitochondrial
- B. Autosomal recessive
- C. Autosomal dominant
- D. X-Linked dominant
- E. X-Linked recessive

26. Histologic examination of an eye specimen shows multilayer structure. The outermost layer is represented by special

pigment epithelium, which is composed of cuboidal melanin-containing cells that absorb light. The photoreceptor layer contains photosensitive outer segments of rods and cones. Which of the following eye structures is mentioned?

- A. Retina
- B. Ciliary body
- C. Choroid
- D. Sclera
- E. Iris

27. A previously healthy 8-year old boy is brought to the emergency department by his parents because of fever and progressively worsening sore throat and dysphagia. Physical examination shows pharyngeal erythema with tender left and right cervical lymphadenopathy. Contrast-enhanced computed tomography (CT) shows fluid accumulation in the retropharyngeal space. A diagnosis of retropharyngeal abscess is suspected. Which of the following fasciae is most likely involved in this process?

- A. Buccopharyngeal fascia
- B. Temporal fascia
- C. Masseteric fascia
- D. Parotid fascia
- E. -

28. A 10-year-old boy is brought to the physician by his parents because of fever, cough, and fatigue. He has been admitted to the hospital five times because of pneumonia. Attempts to induce immunity using the pneumococcal vaccine have failed. The first hospitalization was at the age of 12 months. Laboratory findings show marked reduction in all classes and subclasses of serum immunoglobulins. Which of the following

immune cells is most likely to be reduced in the peripheral blood of this patient?

- A. B-cells
- B. T-cells
- C. Neutrophils
- D. Macrophages
- E. NK-cells

29. A 36-year-old male comes to the dental office for extraction of the tooth. Two weeks after the procedure is performed, the stratified squamous epithelium regenerates at the site of extraction. Which of the following organelles is most likely involved in the mucosa regeneration?

- A. Ribosomes
- B. Centrosomes
- C. Lysosomes
- D. Smooth endoplasmic reticulum
- E. Mitochondria

30. A 43-year-old cattle farm worker is brought to the surgeon with fever, malaise, and inflamed lesions on his hands and arms. He reports that about 2 weeks before his presentation at the hospital he noticed small, painless, pruritic papules that quickly enlarged and developed a central vesicle. The vesicles developed into erosion and left painless necrotic ulcers with black, depressed eschar. Gram's staining of the ulcer reveals gram-positive spore-forming bacilli. Which of the following diseases is the most likely cause of these findings?

- A. Anthrax
- B. Plague
- C. Tularemia
- D. Syphilis
- E. Chickenpox