



**STATE NON-PROFIT ENTERPRISE
«TESTING BOARD FOR PROFESSIONAL COMPETENCE ASSESSMENT OF
HIGHER EDUCATION TRAINEES IN MEDICINE AND PHARMACY AT THE
MINISTRY OF HEALTH OF UKRAINE»**

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Variant 41

**TEST ITEMS
FOR THE UNIFIED STATE QUALIFICATION EXAM
TEST COMPONENT
STAGE 1**

MEDICINE

ENGLISH LANGUAGE PROFICIENCY TEST

I. Read the text and answer 10 questions to it.

Anthrax

Anthrax can occur in 4 forms, depending on the route of infection: cutaneous, inhalational, gastrointestinal, and injection. Cutaneous anthrax begins as a pruritic papule or vesicle and progresses over 2 to 6 days to an ulcerated lesion with subsequent formation of a central black eschar. The lesion itself is characteristically painless, with surrounding oedema, hyperaemia, and painful regional lymphadenopathy.

Patients may have associated fever, lymphangitis, and extensive oedema.

Inhalational anthrax is a frequently lethal form of the disease and constitutes a medical emergency. The initial presentation is nonspecific with fever, sweats, non-productive cough, chest pain, headache, myalgia, malaise, nausea, and vomiting, but illness progresses to the fulminant phase 2 to 5 days later. In some cases, the illness is biphasic with a period of improvement between prodromal symptoms and overwhelming illness. Fulminant manifestations include hypotension, dyspnoea, hypoxia, cyanosis, and shock occurring as a result of haemorrhagic mediastinal lymphadenitis, haemorrhagic pneumonia, haemorrhagic pleural effusions, and toxæmia. A widened mediastinum is the classic finding on imaging of the chest. Chest radiography may also show pleural effusions or infiltrates, both of which may be haemorrhagic in nature.

Gastrointestinal tract disease can present as one of 2 distinct clinical syndromes — intestinal or oropharyngeal. Patients with the intestinal form have nausea, anorexia, vomiting, and fever progressing to severe abdominal pain, massive ascites, hematemesis, and bloody diarrhea, related to development of oedema and ulceration of the bowel, primarily the ileum and cecum. Patients with oropharyngeal anthrax may also have dysphagia with posterior oropharyngeal necrotic ulcers, which can be associated with marked, often unilateral neck swelling, regional adenopathy, fever, and sepsis.

Injection anthrax has not been reported to date in children. Its primary occurrence has been reported among injecting heroin users; however, smoking and snorting of heroin also have been identified as exposure routes. Systemic illness can result from hematogenous and lymphatic dissemination and can occur with any form of anthrax. Most patients with inhalational, gastrointestinal, and injection anthrax have systemic illness. Anthrax meningitis can occur in any patient with systemic illness regardless of origin; it can also occur in patients lacking any other apparent clinical presentation. The case-fatality rate for patients with appropriately treated cutaneous anthrax is usually less than 1%. Even with antimicrobial treatment and supportive care, the mortality rate for inhalational or gastrointestinal tract disease is between 40% and 45% and approaches 100% for meningitis.

1. Gastrointestinal anthrax can have two syndromes.

- A. True
- B. False
- C. Not given

2. The lowest mortality rate happens for the cutaneous form of anthrax

- A. True
- B. False
- C. Not given

3. How does the cutaneous form of anthrax start?

- A. With black eschar
- B. With papule or vesicle
- C. With regional lymphadenopathy
- D. With ulcerated lesion

4. Choose the correct statement

- A. Inhalational form of anthrax always has a period of improvement
- B. Inhalational form of anthrax is always lethal
- C. Inhalational form of anthrax progresses over less than a week
- D. Chest radiography in case of the inhalational form of anthrax always shows pleural effusions or infiltrates

5. On what does the form of anthrax depend?

- A. On the country of origin of the infection
- B. On the age of the infected person
- C. On the place of infection
- D. On the way of infection

6. Choose the correct statement

- A. Cutaneous form presents with the formation of black eschar
- B. Cutaneous form presents only with the formation of papule or vesicle
- C. Patients with the cutaneous form of anthrax always have associated fever, lymphangitis, and extensive oedema.
- D. Cutaneous form is painless

7. Which form of anthrax causes the highest rate of mortality?

- A. Inhalational
- B. Meningitis
- C. Cutaneous
- D. Gastrointestinal

8. What is the presentation of the inhalational form of anthrax?

- A. Fever, sweats, cough, chest pain, headache, myalgia, nausea, and vomiting
- B. Hypotension, dyspnoea, hypoxia, cyanosis
- C. Severe abdominal pain, massive ascites, haematemesis
- D. Lymphadenitis, haemorrhagic pneumonia, haemorrhagic pleural effusions, and toxæmia

9. Injection anthrax can only occur among injecting heroin users

- A. True
- B. False
- C. Not given

10. The treatment of anthrax does not exist

- A. True
- B. False
- C. Not given

II. Choose the right answer.

11. A person with suspected liver abscess has been admitted into the surgical department of a hospital. This person was on a business trip in one of the African countries for a long time and repeatedly had been suffering from an acute gastrointestinal disease. What protozoan disease is likely in this patient?

- A. Toxoplasmosis
- B. Trypanosomiasis
- C. Malaria
- D. Leishmaniasis
- E. Amoebiasis

12. Increased levels of angiotensin II have been detected in the blood of a patient with a hypertensive crisis. The pressor effect of angiotensin is associated with the:

- A. Activation of biogenic amine synthesis
- B. Contraction of arteriolar muscles
- C. Activation of the kallikrein-kinin system
- D. Stimulation of vasopressin production
- E. Hyperproduction of prostaglandins

13. A person with a head injury in the temporal region has been diagnosed with an epidural hematoma. What artery is most likely to be damaged in this case?

- A. Posterior auricular artery
- B. Anterior meningeal artery
- C. Middle cerebral artery
- D. Superficial temporal artery
- E. Middle meningeal artery

14. A woman, who complains of a constant feeling of fear and anxiety, has been diagnosed with neurosis and prescribed a drug with an anxiolytic effect. What drug is it?

- A. Ginseng tincture
- B. Piracetam
- C. Caffeine and sodium benzoate
- D. Diazepam
- E. Aminazine (Chlorpromazine)

15. Oral mucosa sometimes can be traumatized during tooth brushing. However, such bleeding quickly stops by itself due to the presence of the following in the saliva:

- A. Amylolytic enzymes
- B. Lipolytic enzymes
- C. Lysozyme and mucin
- D. Procoagulants
- E. Minerals

16. A patient at the oncology department has undergone radiation therapy. After that, morphology detected a significant disruption in the process of regeneration of epithelial layer in the small intestine mucosa. What cells of the epithelial membrane are damaged in this case?

- A. Exocrinocytes with acidophilic granulation (Paneth cells)
- B. Endocrine cells
- C. Columnar epitheliocytes with a brush border
- D. Goblet exocrinocytes
- E. Columnar epitheliocytes without a brush border, located in the crypts

17. A poisoning caused by sulema (mercury dichloride) has occurred at a factory. Two days later, the person, who had suffered from the sulema exposure, developed the 24-hour diuresis of 620 mL, headache, vomiting, convulsions, and dyspnea. What diagnosis can be made in this case?

- A. Acute renal failure
- B. Pyelonephritis
- C. Glomerulonephritis
- D. Uremic coma
- E. Chronic renal failure

18. A 48-year-old woman has been diagnosed with Raynaud syndrome (a spasm of peripheral blood vessels) and prescribed an adrenotropic

agent. What group does this drug belong to?

- A. β_1 -blockers
- B. β_1 -adrenergic agonists
- C. β_2 -blockers
- D. α -blockers
- E. α/β -adrenergic agonists

19. A 27-year-old parturient woman undergoes a complicated childbirth with impending cervical rupture. What pain relief medicine would be the safest in this case?

- A. Promedol (Trimeperidine)
- B. Fentanyl
- C. Analgin (Metamizole)
- D. Morphine hydrochloride
- E. Diazepam

20. Participation of a certain part of the central nervous system is mandatory for the formation of voluntary defecation in a child. What part of the central nervous system is it?

- A. Cerebral cortex
- B. Medulla oblongata
- C. Coccygeal segments of the spinal cord
- D. Lateral nuclei of the hypothalamus
- E. Ventromedial nuclei of the hypothalamus

21. One of the rules of surgery is to make incisions along the so-called Langer's lines (lines of skin tension). What tissue forms the strongest layer of the dermis — the reticular dermis?

- A. Dense regular connective tissue
- B. Epithelial tissue
- C. Loose fibrous connective tissue
- D. Reticular connective tissue
- E. Dense irregular connective tissue

22. A patient with chronic heart failure developed signs of pulmonary edema. What diuretic must be prescribed to the patient for rapid correction of this complication?

- A. Clopamide
- B. Furosemide
- C. Spironolactone
- D. Diacarb (Acetazolamide)
- E. Triamzid

23. A surgeon suspects inflammation of the Meckel's diverticulum in a 10-year-old child. This condition requires a surgical intervention. What part of the intestine must be inspected to find the diverticulum?

- A. 20 cm of the ileum, starting from the ileocecal angle
- B. 1 meter of the ileum, starting from the place of its confluence with the large intestine
- C. 0.5 meters of jejunum, starting from the ligament of Treitz
- D. Descending colon
- E. Ascending colon

24. A histological specimen of an eyeball shows a biconvex structure, connected to the ciliary body with the fibrous strands of the ciliary zonule and covered on top with a transparent capsule. What structure is it?

- A. Vitreous body
- B. Crystalline lens
- C. Cornea
- D. Sclera
- E. Ciliary body

25. A patient has been diagnosed with a myocardial infarction. His blood was tested for the activity of cardiospecific enzymes. Which one among the detected enzymes has three isoforms?

- A. Creatine kinase
- B. Lactate dehydrogenase
- C. Aspartate transaminase
- D. Pyruvate kinase
- E. Alanine transaminase

26. A 3-year-old child has an acute intestinal infection with profuse diarrhea, followed by the development of anhydremic shock. What is the leading link in the development of this complication?

- A. Hypovolemia
- B. Hypoxia
- C. Decreased arterial pressure
- D. Reduced cardiac output per minute
- E. Intoxication

27. A 56-year-old woman complains of pain in the small joints of her hands and feet. She has been experiencing these symptoms for the last 12 years. Examination of her hands detects a subluxation of the metacarpophalangeal joints with fingers bent outwards («walrus flippers»). There are high molecular weight immune complexes in the patient's blood. What diagnosis can be made in this case?

- A. Dermatomyositis
- B. Gouty arthritis
- C. Rheumatic polyarthritis
- D. Systemic lupus erythematosus
- E. Rheumatoid arthritis

28. In an experiment, despiralization of the DNA molecule was disrupted in an animal cell. What processes will primarily stop occurring in this cell?

- A. Processing
- B. Translation
- C. Repair
- D. Termination
- E. Transcription

29. Two weeks ago, an illness was reported in several children at the orphanage. Based on the description of its clinical manifestations and epidemiological data, the epidemiologist suspects an outbreak of measles infection. What type of laboratory analysis can confirm this provisional diagnosis?

- A. Allergy testing
- B. Rhinoscopy
- C. Serology
- D. Inoculation of chicken embryos
- E. Immunofluorescence

30. A 50-year-old man suddenly developed intense palpitations, pain in the heart, acute weakness,

increased blood pressure, and an irregular pulse with pulse deficit. ECG shows f-waves instead of a P wave; R-R intervals are irregular. What heart rhythm disorder is observed in the patient?

- A. Ciliary arrhythmia
- B. Respiratory sinus arrhythmia
- C. Transverse heart block
- D. Paroxysmal tachycardia
- E. Sinus extrasystole

31. The cardiology department has received a patient with complaints of tachycardia, shortness of breath, and cyanotic mucosa. Examination detects leg edemas and ascites. What drug must be prescribed to the patient in this case?

- A. Digitoxin
- B. Adrenaline hydrochloride
- C. Cordiamine (Nikethamide)
- D. Corglycon (Convallaria glycosides)
- E. No-spa (Drotaverine)

32. Monoamine oxidase inhibitors are widely used as psychotropic drugs. In the synapses, they change the levels of all the neurotransmitters listed below, except:

- A. Adrenaline
- B. Noradrenaline
- C. Serotonin
- D. Dopamine
- E. Acetylcholine ✓

33. In the removed uterus of a 55-year-old woman, a pathologist has found a dense node in the thick of the myometrium. The node is 5 cm in diameter and has clear boundaries. On section, its tissues are gray-pink and fibrous. Microscopically, the tumor consists of smooth muscle cells that form bundles of varying thickness, which run in different directions, and of layers of connective tissue, hyalinized in some places. What tumor has developed in the patient?

- A. Fibromyoma
- B. Rhabdomyoma
- C. Fibrosarcoma
- D. Myosarcoma
- E. Fibroma

34. During a blood transfusion, intravascular hemolysis of erythrocytes started developing in the patient. What type of hypersensitivity has developed in this patient?

- A. Type I hypersensitivity (anaphylactic)
- B. Type IV hypersensitivity (cell-mediated cytotoxicity)
- C. Type III hypersensitivity (immune complex)
- D. Type V hypersensitivity (granulomatosis)
- E. Type II hypersensitivity (antibody-dependent)

35. A man has an impairment of a certain part of his central nervous system, which manifests as asthenia, muscle dystonia, and a balance disorder. What part of the central nervous system is affected in this case?

- A. Substantia nigra
- B. Reticular formation
- C. Cerebellum
- D. Vestibular nuclei
- E. Red nuclei

36. When stimulation frequency of an isolated heart of a rabbit increases, incomplete relaxation of the ventricles of the heart can be observed because of:

- A. Inhibition of the sodium-potassium pump
- B. Increased potassium levels in the interstitium
- C. Increased sodium levels in cardiomyocytes
- D. Accumulation of calcium in cardiomyocytes
- E. Increased potassium levels in cardiomyocytes

37. As a result of industrial exposure to chromium compounds, a woman

has developed allergic dermatitis on both her hands. What skin cells are mainly involved in the manifestation of this disease?

- A. Neutrophils
- B. Plasma cells
- C. Tissue basophils
- D. Lymphocytes
- E. Macrophages

38. Five hours after eating seafood, a 22-year-old woman developed small itchy papules on the skin of her torso and distal parts of her limbs. The papules were partially merging with each other. 24 hours later, the rash spontaneously disappeared. What mechanism of hypersensitivity underlies these changes?

- A. Antibody-dependent cell-mediated cytotoxicity
- B. Systemic anaphylaxis
- C. Immune complex-mediated hypersensitivity
- D. Atopy (local anaphylaxis)
- E. Cell-mediated cytotoxicity

39. An increase in the circulating blood volume under the influence of aldosterone and antidiuretic hormone leads to the activation of secretion of a certain substance. What substance is it?

- A. Atrial natriuretic peptide
- B. Angiotensin II
- C. Angiotensinogen
- D. Melatonin
- E. Renin

40. Elevated blood homocysteine is a risk factor for cardiovascular pathology. This amino acid is formed in the body from:

- A. Alanine
- B. Folic acid
- C. Methionine
- D. Cysteine
- E. Cystine

41. IgM to the rubella virus have been detected in a pregnant woman. Based on these findings, the obstetrician-

gynecologist recommended terminating the pregnancy due to the high probability of teratogenic effects on the fetus. It is important that specifically IgM have been detected, because immunoglobulins of this class:

- A. Are the main factor of antiviral protection
- B. Have the largest molecular mass
- C. Are associated with anaphylactic reactions
- D. Can breach the placental barrier
- E. Are an indicator of recent infection

42. Genealogical analysis of a family with a hereditary pathology of optic nerve atrophy has determined that this medical condition is passed on only by the mothers, both girls and boys can be affected, and the sick father does not pass on the disease to his daughters or sons. What type of hereditary disease is it?

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

43. Autopsy shows clinical presentation of diffuse osteoporosis with foci of bone tissue destruction. In the bone marrow, proliferation of atypical plasma cells can be observed. Bence Jones protein is detected in urine. What diagnosis can be made in this case?

- A. Lymphogranulomatosis
- B. Osteoporosis
- C. Multiple myeloma
- D. Osteodystrophy
- E. Bekhterev disease (ankylosing spondylitis)

44. During the surgery for a femoral hernia, the doctor operates within the borders of the femoral triangle. What structure forms its upper border?

- A. *Lig. pectinale*
- B. *Lig. inguinale*
- C. *Lig. lacunare*
- D. *Arcus iliopectineus*
- E. *Fascia lata*

45. Diphtheria toxin is a potent inhibitor of protein synthesis in eukaryotes. What is its molecular mechanism of action?

- A. Protein kinase inhibition
- B. Irreversible modification of an elongation factor
- C. Dephosphorylation of the termination factor
- D. Inactivation of the initiation factor
- E. Protein kinase phosphorylation

46. Zoliclons (monoclonal antibodies) were used to determine the person's blood group according to the ABO system. Erythrocyte agglutination did not occur with any of the zoliclons. What blood type does this person have?

- A. AB (IV)
- B. 0 (I)
- C. B (III)
- D. A (II)
- E. —

47. After an intracerebral hemorrhage, the patient's speech became indistinct. Sound production in the larynx and movements of the lower jaw are retained. The nuclei of what nerves have been affected by the hemorrhage in this case?

- A. *Nuclei n. accessorii*
- B. *Nuclei n. facialis*
- C. *Nuclei n. vagi*
- D. *Nuclei n. glossopharyngeus*
- E. *Nuclei n. hypoglossi*

48. A person with dilated subcutaneous veins clearly visible in the area of the navel («caput medusae») has been hospitalized. What large vein has impaired patency in this case?

- A. *V. mesenterica superior*
- B. *V. portae hepatis*
- C. *V. iliaca interna*
- D. *V. mesenterica inferior*
- E. *V. renalis*

49. Examination shows that the patient's sternocleidomastoid muscle and the upper edge of the trapezius muscle suffer from atrophy. Turning the head into the opposite direction is problematic. What nerve is affected in this case?

- A. Accessory nerve
- B. Vagus nerve
- C. Intercostal nerve
- D. Hypoglossal nerve
- E. Brachial plexus

50. A 65-year-old man with liver cirrhosis developed a significant decrease in blood pressure. What mechanism can be the cause of arterial hypotension in this case?

- A. Reduced synthesis of transport proteins in the liver
- B. Disturbed antitoxic function of the liver
- C. Disturbed production of bile acids in the liver
- D. Reduced angiotensinogen synthesis in the liver
- E. Increased urea synthesis in the liver