

1. Protein synthesis occurs in several stages. During one of them, messenger RNA is being synthesized on one of the strands of a DNA segment. Name this process:

- a. Transcription
- b. Elongation
- c. Termination
- d. Translation
- e. Replication

2. A 40-year-old woman on examination presents with intensified basal metabolic rate. What hormone present in excess leads to such condition?

- a. Triiodothyronine
- b. Glucagon
- c. Somatostatin
- d. Aldosterone
- e. Thyrocalcitonin

3. A 16-year-old female has no hair on the pubis and in the armpits, her mammary glands are underdeveloped, no menstruations. This condition can be caused by the following hormone imbalance:

- a. Hyperthyroidism
- b. Pancreatic islet failure
- c. Adrenal medulla hyperfunction
- d. Ovarian failure
- e. Hypothyroidism

4. Blood of a patient with bladder cancer has high levels of serotonin and hydroxyanthranilic acid, because of excessive intake of a certain amino acid. Name this amino acid:

- a. Alanine
- b. Methionine
- c. Tyrosine
- d. Tryptophan
- e. Histidine

5. Mother of a 5-y ear-old child complains that her child develops itching skin, erythema, and vesicular rash after exposure to the sun. Blood test revealed low levels of iron in the blood serum. Urine contains increased levels of uroporphyrinogen I. What hereditary pathology is the most likely in this child?

- a. Hepatic porphyria
- b. Methemoglobinemia
- c. Erythropoietic porphyria
- d. Coproporphyria
- e. Intermittent porphyria

6. A laboratory received a sputum sample obtained from a patient with tuberculosis. What staining method should be used to detect the causative agents of tuberculosis?

- a. Romanowsky-Giemsa
- b. Gram-Sinov
- c. Ziehl-Neelsen
- d. Burri-Gins
- e. Neisser

7. From the feces of a patient with acute gastroenteritis a pure culture of microorganisms was obtained. The microorganisms are small mobile slightly curved gram-negative bacilli that within 6 hours grow into a light blue him on the 1% alkaline peptone water. Such properties are characteristic of the following microorganism:

- a. Vibrio
- b. Clostridium
- c. Spirillum

- d. Bacillus
- e. Spirochaete

8. Microscopy of the sputum of a patient with lobar pneumonia revealed a large number of gram-positive lancet-shaped encapsulated diplococci. What causative agent is it?

- a. Escherichia coli
- b. Streptococcus pneumoniae**

- c. Chlamidia pneumoniae
- d. Klebsiella pneumoniae
- e. Staphylococcus aureus

9. A 26-year-old man has a large furuncle in the soft tissues of his face. It is located close to the nasal root and lower eyelid. A possible dangerous complication of this condition can lead to the infection spreading through the venous plexuses into the sinuses of the dura mater. What sinus is the most likely to be affected in this case?

- a. Cavernous sinus**
- b. Occipital sinus
- c. Superior petrosal sinus
- d. Sigmoid sinus
- e. Superior sagittal sinus

10. A patient complains of pain in the upper umbilical region. On palpation there is a mobile painful intestine. What intestine is being palpated by the doctor?

- a. Ileum
- b. Sigmoid colon
- c. Jejunum
- d. Duodenum
- e. Transverse colon**

11. A patient with neurodermatitis was taking prednisolone for a long time. Examination revealed high blood glucose. This complication occurs, when glucocorticosteroids affect a certain stage of carbohydrate metabolism. What stage of carbohydrate metabolism is affected?

- a. Glycogen synthesis activation
- b. Glycogen synthesis inhibition
- c. Activation of the insulin breakdown
- d. Gluconeogenesis activation**
- e. Increased absorption of glucose in the intestine

12. A lab rat has subcutaneously received mercury(II) chloride in the amount of 5 mg/kg. 24 hours later the plasma creatinine concentration increased several times. What mechanism of retention azotemia is observed in this case?

- a. Increased creatinine production in the muscles
- b. Increased glomerular filtration
- c. Increased creatinine secretion in the renal tubules
- d. Decreased glomerular filtration**
- e. Increased creatinine reabsorption

13. A patient has ascites, his spleen is double the normal size, he has esophageal and rectal varices. Histology of the biopsy material obtained from the liver revealed micronodular cirrhosis. What complicated the hepatic cirrhosis in this case?

- a. Hepatolienal syndrome
- b. Heart failure
- c. Portal hypertension**
- d. Hepatocellular dysfunction
- e. Budd-Chiari syndrome

14. The patient underwent blood test that showed albumin of 20 g/L and increased activity of lactate dehydrogenase isoenzyme 5 (LDH5). These results indicate a disorder of the following organ:

- a. Kidneys
- b. Lungs
- c. Spleen
- d. Liver**
- e. Heart

15. A patient died with signs of heart failure. Autopsy shows the following: postinfarction cardiosclerosis, cardiac hypertrophy, and dilated cardiac chambers. The liver is enlarged, has smooth surface, is plethoric on section, covered in dark red specks against the brown-tinted background of the tissue. Histologically, the central veins of the hepatic lobules are plethoric; there is erythrocyte diapedesis into the perivascular space. Central hepatocytes are dystrophic, while peripheral hepatocytes are enlarged and affected by fatty degeneration. What process occurred in the patient's liver?

- a. Nutmeg liver**
- b. Amyloidosis
- c. Hepatic steatosis
- d. Hepatic cirrhosis
- e. Pseudonutmeg liver

16. A patient cannot raise his eyebrow, fully close his eye or bare his teeth on one side of his face. What nerve is likely to be damaged?

- a. Ophthalmic nerve
- b. Mandibular nerve
- c. Oculomotor nerve
- d. Facial nerve**
- e. Maxillary nerve

17. An infant developed darkened sclerae, mucosa, and auricles. The urine becomes dark, when exposed to the air. Blood and urine contain homogentisic acid. What is the most likely disease in this case?

- a. Cystinuria
- b. Albinism
- c. Alkaptonuria**
- d. Porphyria
- e. Hemolytic anemia

18. The renal artery of a test rabbit was surgically narrowed. One month later a significant increase in systemic arterial pressure was registered in the animal. What regulatory mechanism caused the change in the animal's blood pressure?

- a. Angiotensin II**
- b. Adrenaline
- c. Serotonin
- d. Noradrenaline
- e. Vasopressin

19. Section shows significant enlargement of the patient's right kidney. There is a nephrolith at the place of incision. Renal pelvic lumen is distended with accumulating urine. Renal parenchyma is substantially thinned out. What is the most correct diagnosis?

- a. Nephroblastoma
- b. Hydronephrosis**
- c. Hydroureteronephrosis
- d. Pyelectasis
- e. Renal cyst

20. A patient presents with acute attack of choledocholithiasis. Laboratory examination of the patient's feces will likely to show the following in this case:

- a. Starch granules
- b. Negative reaction to sterobilin**

- c. Connective tissue
- d. Positive reaction to stercobilin
- e. Partially digested cellulose

21. A man for a long time was suffering from hemoblastosis. Autopsy of the body revealed brown color of the bone marrow, spleen, liver, and lymph nodes. Perls histochemical reaction was performed. It was determined that reticular, endothelial, and histiocytic elements of the affected organs contain blue granules. What pigment was detected using the Perls histochemical reaction?

- a. Hematoporphyrin
- b. -
- c. Bilirubin
- d. Hematoxylin
- e. Hemosiderin**

22. After eating raw eggs the patient developed dermatitis. What type of avitaminosis is it?

- a. Inositol deficiency
- b. Biotin deficiency**
- c. Pantothenic acid deficiency
- d. Folic acid deficiency
- e. Para-aminobenzoic acid deficiency

23. A 2-year-old child was diagnosed with thymic hypoplasia. What indicator of the immune system status is the most characteristic of this type of immunodeficiency?

- a. Absence of plasma cells
- b. Low levels of immunoglobulin M
- c. Low B cell count
- d. T and B cell deficiency
- e. Low T cell count**

24. A patient with choledocholithiasis has fatty colorless stool because of obturation of the biliary tract. What bile component is absent, causing steatorrhea?

- a. Cholesterol
- b. Fatty acids
- c. Alkaline phosphatase
- d. Bile acids**
- e. Bile pigments

25. A patient suffers from episodes of arterial hypertension that are accompanied by tachycardia, profuse sweating, and sharp pain in the epigastric region. What neoplastic disease of the endocrine glands is the most likely in this case, based on these signs?

- a. Ovarian tumor
- b. Pheochromocytoma**
- c. Adenoma of the adrenal zona glomerulosa
- d. Pituitary basophil adenoma
- e. Thyroid adenoma

26. A bacteriologist found in a sick child the causative agents of Flexner dysentery type 2, Sonne dysentery type 1, and enteropathogenic colibacillus - 055/B5. Name this type of infection:

- a. Secondary infection
- b. Superinfection
- c. Reinfection
- d. Mixed infection**
- e. Carriage of pathogenic bacteria

27. A 45-year-old man complains of frequent fevers, tachycardia, irritability, hair loss, weight loss, and hand tremor. In this case, blood test will show the high levels of the hormones produced in the:

- a. Gonads
- b. Thyroid**

- c. Adrenal medulla
- d. Adrenal cortex
- e. Pancreas

28. Clinical blood testing is recommended to be done in the morning and on an empty stomach. What change in the blood composition is likely if a blood sample was obtained after a meal?

- a. Decreased erythrocyte count

b. Increased leukocyte count

- c. Increased number of plasma proteins
- d. Increased erythrocyte count
- e. Decreased platelet count

29. A 60-year-old man complains of pain in his lower abdomen and frequent stools. Stool analysis shows increased levels of neutral fats in the patient's feces. Incomplete digestion of fats is caused by the deficiency of a certain enzyme. Name this enzyme:

- a. Aminopeptidase

- b. Pepsin

- c. Enterokinase

- d. Maltase

e. Lipase

30. Proliferation of the connective tissue in the hepatic parenchyma (fibrosis) caused by chronic diseases is often associated with disturbed blood circulation in the classical lobules. What blood flow direction can be observed in these lobules?

- a. From the center to the periphery

- b. From the apex to the base

- c. From the base to the apex

d. From the periphery to the center

- e. Around the lobule

31. After a surgery, the patient for a long time was receiving Promedol (Trimeperidine) intravenously. When he stopped receiving this drug, he developed severe psychosomatic disturbances. Name this phenomenon:

a. Withdrawal syndrome

- b. Tachyphylaxis

- c. Rebound effect

- d. Steal syndrome

- e. Idiosyncrasy

32. A 48-year-old man has arterial hypertension of endocrine genesis, headache, muscle weakness, and convulsions. His blood levels of K⁺ (potassium) are low, while his blood levels of Na⁺ (sodium) are high, which is the result of hormone hypersecretion. What hormone is being overproduced in this case?

- a. Adrenaline

- b. Cortisol

- c. Dihydrocholesterol

d. Aldosterone

- e. Parathormone

33. Shigella capable of producing exotoxin was obtained from a patient diagnosed with dysentery. What Shigella species is it?

- a. Shigella boydii

- b. Shigella newcastle

- c. Shigella sonnei

- d. Shigella flexneri

e. Shigella dysenteriae

34. A patient has severe peripheral edema. Consecutive administration of dichlothiazide

(hydrochlorothiazide), etacrynic acid, and furosemide did not have any significant diuretic effect. In the blood there is a significant increase of aldosterone levels. What is the drug of choice in this case?

- a. Amiloride
- b. Spironolactone**
- c. Metoclopramide
- d. Mannitol
- e. Triamterene

35. Autopsy of the body revealed a large wedge-shaped patch of a dense dark red tissue with clear margins in the upper lobe of the right lung. Histological examination detected there necrosis of the alveolar walls; the alveolar lumen is tightly packed with erythrocytes. What process occurred in the lungs?

- a. Carneous degeneration
- b. Hemorrhage
- c. Atelectasis
- d. Hemorrhagic infarction**
- e. Gangrene

36. Bacterioscopy of purulent cervical discharge detected gram-negative beanshaped diplococci, both inside and outside of the leukocytes. What is the causative agent of the purulent inflammation of the uterine cervix in this case?

- a. Trichomonas vaginalis
- b. Calymmatobacterium granulomatis
- c. Chlamidia trachomatis
- d. Haemophilus vaginalis
- e. Neisseria gonorrhoeae**

37. Regional lymph nodes surrounding an infected wound are enlarged. Histological examination shows increased number of macrophages, lymphocytes, and lymphatic follicles in the cortical layer of the lymph nodes, as well as a large amount of plasma cells. What process in the lymph nodes is indicated by these histological changes?

- a. Neoplastic aberration
- b. Transplant rejection
- c. Acquired deficiency of lymphoid tissue
- d. Congenital deficiency of lymphoid tissue
- e. Antigen stimulation**

38. A 47-year-old man complains of weakness and dizziness. Half a year ago he underwent a gastric resection. Blood test: Hb - 80 g/L, erythrocytes - 3.5- 1012/L, color index - 0.69, ESR -15 mm/hour, serum iron - 5.4 mcmol/L, erythrocyte hypochromia. What type of anemia is the most likely in this patient?

- a. Hemorrhagic anemia
- b. Sideroachrestic anemia
- c. Iron deficiency anemia**
- d. Hemolytic anemia
- e. Bi2 or folate deficiency anemia

39. A patient with characteristicly hypoplastic thymus suffers from DiGeorge syndrome. What type of immunological pathology is it?

- a. Congenital B cell deficiency
- b. Acquired B cell deficiency
- c. Immune depression in the system of T cells
- d. Congenital T cell deficiency**
- e. Acquired T cell deficiency

40. A 45-year-old woman has breast cancer. Metastases can spread in this case to the following regional lymph nodes:

- a. Axillary, parasternal**

- b. Cervical, parasternal
- c. Aortic, bronchomediastinal
- d. Parasternal, bronchomediastinal
- e. Abdominal, cervical

41. For diagnostic purposes a parenchyma sample of the patient's blood-forming organ was obtained. The sample contained megakaryocytes. What organ is it?

- a. Thymus
- b. Spleen
- c. Red bone marrow**
- d. Lymph node
- e. Tonsil

42. For the third spring in a row, when poplars start to bloom, a 20-year-old student develops itching and hyperemia in her eyes and nose, rhinorrhea, cough, and urticaria on the exposed areas of her skin. Examination detected a sharp increase in IgE levels. The allergologist prescribed her a special hyposensitization therapy. How is this kind of treatment administered?

- a. Administration of calcium chloride
- b. Exposure to repeated low doses of allergen**
- c. Administration of antihistaminic agents
- d. Exposure to one large dose of allergen
- e. Administration of adrenal gland hormones

43. A patient used an indirect-acting adrenergic agonist to treat rhinitis. After the patient has been administering in the nose drops for several days, the vasoconstrictive effect of the drug gradually diminished. Name this phenomenon:

- a. Tachyphylaxis**
- b. Teratogenicity
- c. Cumulation
- d. Allergy
- e. Idiosyncrasy

44. A medical student was hospitalized into the infectious diseases unit on the 2nd day after the disease onset. The patient is suspected to have infectious mononucleosis. What results of laboratory analysis can confirm this diagnosis immediately on the day of the hospitalization?

- a. Detection of Cytomegalovirus antibodies
- b. Detection of IgM antibodies to Epstein-Barr virus**
- c. Fourfold increase in number of IgG antibodies to Epstein-Barr virus
- d. Detection of IgM antibodies to herpes simplex virus
- e. Isolation of Herpes simplex virus

45. After a domestic trauma a 34-year-old man has limited flexion of the middle phalanges of his fingers 2-5, which results in the overall limited mobility of the fingers. What muscles are likely to be functionally impaired in this case?

- a. M. flexor digitorum superficialis**
- b. M. opponens pollicis, M. adductor pollicis
- c. M. palmaris longus
- d. M. palmaris brevis, M. abductor digiti minimi
- e. M. flexor digitorum profundus

46. After an out-of-hospital abortion, a woman developed progressing purulent endomyometritis, of which she died. Autopsy of the body revealed numerous pulmonary abscesses, small subcapsular pustules in the kidneys, splenic hyperplasia. What type of sepsis developed in the woman?

- a. Pulmonary sepsis
- b. Urosepsis
- c. Septicemia
- d. Chroniosepsis
- e. Septicopyemia**

47. Because of health concerns, one of the patient's adrenal glands had to be removed. How will the structure of the remaining adrenal gland change?

- a. Atrophy of cortical cells
- b. Atrophy of medullary cells
- c. **Hypertrophy of cortical and medullary cells**
- d. Necrosis of medullary cells
- e. Lysis of cortical cells

48. When there is a foreign body in the airways, what bronchus should the doctor examine first, while searching for the foreign body to extract it?

- a. Left segmental bronchi
- b. Right lobar bronchi
- c. Left primary bronchus
- d. Left lobar bronchi
- e. **Right primary bronchus**

49. Histological specimen shows parenchyma of an organ that consists of lymphoid tissue that forms lymph nodules; the nodules are located diffusely and have a central artery. What anatomical structure has such morphological characteristics?

- a. Thymus
- b. Red bone marrow
- c. Tonsil
- d. Lymph node
- e. **Spleen**

50. A 25-year-old woman complains of deteriorating vision. Examination revealed a defect in accommodation, the pupil is dilated and unresponsive to light. What muscles are functionally disturbed in this case?

- a. Iris dilator muscle, ciliary muscle
- b. Lateral rectus muscle, iris sphincter muscle
- c. Iris sphincter and iris dilator muscles
- d. **Iris sphincter muscle, ciliary muscle**
- e. Superior oblique muscle, ciliary muscle

51. Histology of the liver of a deceased, who was an injection drug user, revealed the following: hydropic degeneration of hepatocytes, ground glass hepatocytes, acidophilic Councilman bodies, lymphocytic-macrophageal infiltrations in the portal tracts. What is the most likely etiology of this disease?

- a. Bacterial
- b. Parasitic
- c. Fungal
- d. **Viral**
- e. Toxic

52. An inguinal hernia was found in a patient. During herniotomy, a reinforcement of the anterior wall of the inguinal canal is necessary. What anatomical structures of the anterior abdominal wall are used for the reinforcement in this case?

- a. Aponeurosis of the abdominal internal oblique muscle
- b. Transverse abdominal muscle
- c. Transverse fascia
- d. Peritoneum
- e. **Aponeurosis of the abdominal external oblique muscle**

53. A test animal receives electrical impulses that irritate the sympathetic nerve that innervates blood vessels of the skin. What reaction will it cause in the blood vessels?

- a. Arterial dilation
- b. No reaction
- c. **Arterial and venous constriction**

- d. Arterial and venous dilation
- e. Venous dilation

54. During inflammatory process, the vessels of the microvasculature develop increased permeability and hydrodynamic pressure. Protein structures in the interstitial fluid exhibit increased osmotic concentration and dispersion. What mechanism of edema formation will be observed during inflammatory process?

- a. Lymphogenic
- b. Membranogenic
- c. Hydrodynamic
- d. Colloid-osmotic

e. Mixed

55. An electronic microphotograph shows a fragment of the renal corpuscle. In the photograph there is a large epithelial cell with numerous appendages. The appendages are attached to the basement membrane of the capillaries. What type of cell is it?

- a. Smooth muscle cell
- b. Juxtaglomerular cell
- c. Podocyte**
- d. Endothelial cell
- e. Mesangial cell

56. T lymphocytes were affected by HIV. In the process, viral enzyme reverse transcriptase (RNA-dependent DNA-polymerase) catalyzes the synthesis of:

- a. DNA on the viral RNA matrix**
- b. Viral protein on the viral RNA matrix
- c. Informational RNA on the viral protein matrix
- d. Viral DNA on the DNA matrix
- e. Viral RNA on the DNA matrix

57. A 6-year-old child had acute onset of the disease that started as catarrhal nasopharyngitis. 2 days later the patient died. Autopsy of the body shows markedly plethoric and swollen pia mater that is soaked with thick turbid yellow-green fluid. The brain is swollen, the cerebellar tonsils are enlarged, and there is a clearly visible ligature mark on the brain. The described changes are characteristic of:

- a. Measles
- b. Meningococciosis**
- c. Pertussis
- d. Influenza
- e. Diphtheria

58. A person developed increased pulmonary ventilation due to physical exertion. What indicator of pulmonary function will be significantly increased compared to the resting state?

- a. Total lung capacity
- b. Respiratory volume**
- c. Inspiratory reserve volume
- d. Vital lung capacity
- e. Expiratory reserve volume

59. A patient who for a long time was suffering from rheumatism and had mitral stenosis died of cardiopulmonary failure. Autopsy revealed brown induration of the lungs. What circulatory disorder leads to such changes in the lungs?

- a. Chronic left ventricular failure**
- b. Acute left ventricular failure
- c. Portal hypertension
- d. Acute right ventricular failure
- e. Chronic right ventricular failure

60. A patient needs to be prescribed a wide-spectrum fluoroquinolone agent. Select one such agent

from the list:

- a. Amoxicillin
- b. Azlocillin
- c. Chinoxydin
- d. Ciprofloxacin**
- e. Carbenicillin

61. Histology of the liver detected there a vesicle with chitin and protein membrane, filled with a colorless transparent fluid. What disease can manifest this way?

- a. Cysticercosis
- b. Balantidiasis
- c. Echinococcosis**
- d. Opisthorchiasis
- e. Schistosomiasis

62. Autopsy of the body revealed large (1- 2 cm) brown-red deposits on the external surface of the aortic valve. The deposits cover ulcers and crumble easily. What disease can be suspected in this case?

- a. Diffuse endocarditis
- b. Endocarditis ulceroprolifera**
- c. Acute verrucous endocarditis
- d. Recurrent verrucous endocarditis
- e. Fibroblastic endocarditis

63. One of the cell organelles is the place, where protein molecules are being built and packaged with carbohydrates and fats, before they are transported from the cell via exocytosis. What organelle is it?

- a. Peroxisomes
- b. Ribosomes
- c. Mitochondria
- d. Golgi apparatus**
- e. Lysosomes

64. Autopsy of the body of an 18-year-old young man shows that the spleen weight is 580 grams, it is dark-red on section, spleen pulp easily scrapes off. Histologically, there is marked proliferation of reticular cells and a large number of mature neutrophils in the sinusoidal capillaries. In this case the spleen can be described as:

- a. Leukemia
- b. Septic**
- c. Porphyric
- d. Sago
- e. Cyanotic

65. A biopsy material obtained from a mammary tumor has solid layers that consist of small epithelial cells with polymorphic nuclei and numerous pathological mitoses. The stroma is scant and has lymphocyte infiltration. Make the diagnosis:

- a. Medullary carcinoma**
- b. Paget disease
- c. Adenofibroma
- d. Adenoma
- e. Scirrhous carcinoma

66. A patient has frequent visceral and mucosal hemorrhages. Analysis shows that the collagen fibers in the patient's body lack hydroxyproline and hydroxylysine. The hydroxylation processes of these amino acids are disrupted because of a vitamin deficiency. What vitamin is deficient in this case?

- a. H
- b. A
- c. C**
- d. K

e. PP

67. The mother of a 2-year-old child came to the dentist. During her pregnancy she was randomly taking antibiotics to treat an infectious disease. Examination of the child revealed destruction of the incisors, yellow enamel, and a brown border near the dental cervices. What medicine has a marked teratogenic effect?

a. Octadine (Guanethidine)

b. Doxycycline

c. Ampiox (Ampicillin + Oxacillin)

d. Furosemide

e. Xantinol nicotinate

68. 24 hours after an appendectomy the patient's blood test shows neutrophilic leukocytosis with a regenerative shift. What is the most likely mechanism of absolute leukocytosis development in the patient's peripheral blood?

a. Immunity activation

b. Intensification of leukopoiesis

c. Decreased leukocyte disintegration

d. Leukocyte redistribution

e. Deceleration of leukocyte migration to the tissues

69. A 50-year-old man was hospitalized with suspected gallbladder inflammation. He was prescribed fibrogastroscopy of the gastrointestinal tract with mandatory examination of the major duodenal papilla. Where in the duodenum can doctor find this papilla?

a. Ampulla of Vater

b. Descending

c. Inferior (horizontal)

d. Ascending

e. Superior

70. Vitamin B₁ deficiency impairs oxidative decarboxylation of alpha-ketoglutaric acid, which leads to disturbed synthesis of a certain coenzyme. Name this coenzyme:

a. Thiamine pyrophosphate (TPP)

b. Flavin adenine dinucleotide (FAD)

c. Coenzyme A

d. Lipoic acid

e. Nicotinamide adenine dinucleotide (NAD)

71. Secretion of orotic acid many times exceeds the norm in patients with hereditary orotic aciduria. This pathology is associated with disturbed synthesis of:

a. Urea

b. Pyrimidine nucleotides

c. Biogenic amines

d. Purine nucleotides

e. Uric acid

72. A histological specimen demonstrates a vessel with the wall that consists of endothelium, basement membrane, and loose connective tissue. What type of vessel is it?

a. Non-muscular vein

b. Muscular vein

c. Lymph capillary

d. Hemocapillary

e. Artery

73. A 50-year-old man undergoes pancreatectomy for pancreatic tail due to pancreatitis. How is the affected organ located in relation to the peritoneum?

a. Extraperitoneally

b. Mesoperitoneally

c. Intraperitoneally

d. Parenterally

e. Intramurally

74. Decreased vasopressin synthesis causes polyuria and, as a result, marked dehydration. What is the mechanism of polyuria development?

a. Increased glomerular filtration

b. Decreased canalicular reabsorption of water

c. Decreased canalicular reabsorption of proteins

d. Decreased canalicular reabsorption of Na^+ ions

e. Decreased reabsorption of glucose

75. A patient hospitalized into the pulmonology department was diagnosed with pulmonary emphysema accompanied by the loss of elasticity in the pulmonary tissue. What type of respiration can be observed in this case?

a. Shallow breathing

b. Inspiratory dyspnea

c. Expiratory dyspnea

d. Slow breathing

e. Periodical breathing

76. ECG shows absent P waves replaced by f waves, QRST complexes have irregular intervals between them (RR interval varies), R waves have different voltage. What type of arrhythmia is it?

a. Paroxysmal tachycardia

b. Sinus arrhythmia

c. Atrial fibrillation

d. Sinus tachycardia

e. Idioventricular rhythm

77. A 65-year-old man periodically feels pain under his left shoulder blade and in his left shoulder. After a significant physical exertion, the pain sharply intensified. Based on the ECG findings, the diagnosis of acute myocardial infarction was made. What type of pain was observed in this case?

a. Causalgia

b. -

c. Visceral pain

d. Phantom limb pain

e. Irradiating pain

78. A pathological process involves conduction pathways of the spinal cord, resulting in disturbed pain sensation in the skin and muscles. What pathways are affected?

a. Spinothalamic

b. Medial corticospinal

c. Ventral spinocerebellar

d. Anterior spinocerebellar

e. Lateral corticospinal

79. Fasting energy expenditure is being measured in a person, who is lying down in a state of physical and mental rest, while the room temperature is within the comfort zone. When will the energy expenditure be at its highest?

a. 20:00-00:00

b. 03:00-04:00

c. 7:00-8:00

d. 10:00-12:00

e. 17:00-18:00

80. A patient developed left ventricular heart failure. What compensatory responses in the patient's body will be aimed at the prevention of pulmonary edema?

a. Reflex spasm of the pulmonary arterioles and decrease of blood pressure in the pulmonary

microvasculature

- b. Blood accumulation in the systemic veins
- c. Increased central venous pressure
- d. Increased permeability of the pulmonary capillaries
- e. Decreased peripheral resistance in the systemic arterioles

81. A patient with myocardial infarction has acute heart failure. Among the drugs that increase the force of heart contractions the least dangerous in this case will be:

- a. Euphyllin (Aminophylline)
- b. Caffeine
- c. Adrenaline
- d. Isadrinum (Isoprenaline)
- e. Dobutamine**

82. An experiment demonstrates that Jensen sarcoma leads to a significant increase in glucose uptake from the tumor afferent artery, while tumor efferent vein has high levels of lactic acid. This phenomenon indicates:

- a. Intensified oxidizing processes
- b. Decreased anaerobic glycolysis
- c. Decreased oxidizing processes
- d. Intensified anaerobic glycolysis**
- e. Intensified protein oxidation

83. Electrons release their energy, when they are being transported in the course of tissue respiration. This energy is used for the following process:

- a. Oxidative phosphorylation**
- b. Microsomal oxidation
- c. Substrate-level phosphorylation
- d. Peroxidation
- e. Lipid mobilization

84. A test animal kept on a low-protein diet developed fatty infiltration of the liver due to low levels of methylating agents. What amino acid is a methylating agent?

- a. Valine
- b. Methionine**
- c. Phenylalanine
- d. Cysteine
- e. Tyrosine

85. What compensatory response occurs in the human body, when external temperature significantly rises?

- a. Peripheral vasoconstriction
- b. Decreased perspiration
- c. Increased muscle tone
- d. Dilation of the cutaneous blood vessels**
- e. Dilation of the visceral blood vessels

86. A 5-year-old child is diagnosed with Bruton's disease (X-linked agammaglobulinemia) that manifests itself in severe clinical course of bacterial infections and absence of B lymphocytes and plasma cells. What changes of immunoglobulin content can be observed in blood serum of the child with immunodeficiency?

- a. Increased IgA, IgM
- b. Increased IgD, IgE
- c. No changes
- d. Decreased IgA, IgM**
- e. Decreased IgD, IgE

87. After a cerebral hemorrhage the patient has lost the ability to understand speech. Where in the

cortex is the site of trauma in this case?

- a. Inferior frontal lobe
- b. Superior temporal lobe**
- c. Medial frontal lobe
- d. Superior frontal lobe
- e. Medial temporal lobe

88. A sick child has no anti-hemophilic factor (factor VIII) in the blood plasma. What pathology of hemostasis is it?

- a. Acquired coagulopathy
- b. Thrombophilia
- c. Hereditary angiopathy
- d. Immune-mediated angiopathy
- e. Hereditary coagulopathy**

89. A 7-year-old boy has a bright-pink punctate rash against the background of hyperemia on his forehead, neck, lower abdomen, and in the popliteal spaces. His nasolabial triangle is pale. In the oropharynx there is a bright-red hyperemic area with clear margins, the tonsils are swollen and friable, lacunas contain pus, the tongue is raspberry pink. The cervical lymph nodes are enlarged and painful. Make the diagnosis:

- a. Diphtheria
- b. Infectious mononucleosis
- c. Rubella
- d. Pertussis
- e. Scarlet fever**

90. A laboratory rat with chronic kidney failure has osteoporosis, pathologic calcification of the internal organs, and arterial hypertension. These disturbances are associated with the increased activity of the following hormone:

- a. Adrenaline
- b. Parathyroid hormone**
- c. Triiodothyronine
- d. Thyroxin
- e. Calcitonin

91. It has been found experimentally that activation of amino acids and their binding to the tRNA is an important stage of preparation for protein synthesis in the cells. What substance takes part in this process?

- a. ATP**
- b. NAD+
- c. Phosphoric acid
- d. FAD
- e. Coenzyme A

92. A 2-year-old child presents with marked delay in psychomotor development, vision and hearing deterioration, marked enlargement of the liver and spleen. The child is diagnosed with hereditary Niemann-Pick disease. What genetic defect is the cause of this disease?

- a. Amylo-1,6-glucosidase deficiency
- b. Glucose 6-phosphatase deficiency
- c. Sphingomyelinase deficiency**
- d. Acid lipase deficiency
- e. Xanthine oxidase deficiency

93. A woman complains that her child is unwell: the child developed loss of appetite, insomnia, and irritability. Biochemical testing shows that there is no glucocerebrosidase enzyme in the child's blood. It is characteristic of the following pathology:

- a. Niemann-Pick disease
- b. Tay-Sachs disease**

c. Gaucher disease

d. Von Gierke disease (glycogen storage disease type I)

e. Pompe disease (glycogen storage disease type II)

94. Autopsy of the body revealed waxy degeneration of the rectus abdominis muscles. In the terminal segment of the small intestine there are ulcers 3-5 cm in diameter. The ulcer walls are covered in a crumbling grayish-yellow substance. The ulcer edges are moderately raised above the mucosa. Widal test is positive. Make the diagnosis:

a. Dysentery

b. Typhoid fever

c. Relapsing fever

d. Nonspecific ulcerative colitis

e. Crohn's disease

95. Genealogical analysis of a child with myotonic dystrophy determined that this disease manifests in every generation, is in equal measure present in the relatives of both genders, the risk of inheriting this disease is equal no matter which parent is affected. If one of the parents is heterozygous for this disease and the other parent is healthy, the risk of them giving birth to a sick child is 50%. What type of disease inheritance is it?

a. X-linked dominant

b. Autosomal recessive

c. Autosomal dominant

d. X-linked recessive

e. Y-linked

96. An electronic microphotograph shows a fragment of the proper gastric gland. In the photograph there is a large irregular rounded cell with numerous intracellular canaliculi and mitochondria. Name this type of cell:

a. Parietal cell

b. Undifferentiated cell

c. Endocrine cell

d. Foveolar cell

e. Chief cell

97. A young woman, a foreign student from Tehran, has made an appointment with the urologist. She complains of the sensation of heaviness in her lower abdomen and a small amount of blood being excreted with urine at the end of each urination. Microscopy of urine detects the presence of parasite eggs, approximately 140x70 micron in size, with a terminal spike. What diagnosis can be made by the infectious disease specialist?

a. Paragonimiasis

b. Fascioliasis

c. Opisthorchiasis

d. Dicroceliasis

e. Schistosomiasis

98. A woman hospitalized in the surgical department complains of pain in her lower abdomen and in the small of her back, frequent and painful urination. Urine culture test revealed gram-negative oxidase-positive bacilli that formed green mucoid colonies with a specific smell. What causative agent can be suspected?

a. E. coli

b. Proteus mirabilis

c. Pseudomonas aeruginosa

d. Str. pyogenes

e. Mycoplasma pneumoniae

99. The patient's ECG shows that in the second standard lead from the extremities the P waves are positive, their amplitude is 0.1 mV (norm is 0.05-0.25 mV), duration - 0.1 seconds (norm is 0.07-0.10 seconds). It can be concluded that the following process occurs normally in the cardiac atria:

- a. Contraction
- b. Relaxation
- c. Repolarization
- d. Excitation
- e. Depolarization**

100. To study a normal menstruation cycle, the OB-GYN specialist, taking into account the pyrogenic effect of progesterone, measured the patient's rectal basal body temperature. At what phase of the cycle will the rectal temperature increase by 0.4-0.5°C?

- a. End of follicular phase
- b. Beginning of follicular phase
- c. Ovulation and beginning of luteal phase**
- d. End of luteal phase
- e. Endometrial desquamation phase

101. A 40-year-old man with pulmonary tuberculosis was prescribed isoniazid. Prolonged taking of this drug can result in the development of the following vitamin deficiency:

- a. Biotin
- b. Folic acid
- c. Thiamine
- d. Cobalamin
- e. Pyridoxine**

102. A patient complains of stomachache. Biochemical testing revealed decreased secretory function of the stomach accompanied by anemia. Hypovitaminosis B₁₂ and development of anemia are caused by the low levels of a certain substance. What substance is it?

- a. Castle factor**
- b. Biotin
- c. Calciferol
- d. Pyridoxine
- e. Thiamine

103. A person was hospitalized with markedly icteric skin, sclerae, and mucosa. Urinalysis shows the presence of direct bilirubin. Patient's urine is the color of dark beer. Fecal levels of bile pigments are low. What type of jaundice is observed in this patient?

- a. Absorption
- b. Obstructive**
- c. Hemolytic
- d. Hepatocellular
- e. Conjugated

104. Various physical and physico-chemical methods are used in research of blood serum proteins. In particular, serum albumins and globulins can be separated using the following method:

- a. Dialysis
- b. Polarography
- c. Electrophoresis**
- d. Spectrophotometry
- e. Refractometry

105. An oncology patient is to undergo a surgery on the descending colon. Name the main source of the blood supply to this organ:

- a. Middle colic artery
- b. Splenic artery
- c. Superior mesenteric artery
- d. Celiac trunk
- e. Inferior mesenteric artery**

106. A woman gave birth to twins. One of them was provisionally diagnosed with Cri-du-chat

syndrome that manifests as underdeveloped laryngeal muscles and «meowing» voice timbre. This syndrome occurs because of chromosome mutation. What method can verify or refute this diagnosis?

a. Population statistics

b. Cytogenetic

c. Amniocentesis

d. Biochemical

e. Twin study

107. After a celebratory dinner, several people, who were eating a cake with duck egg cream, developed food poisoning. What genus of bacteria is the most likely cause of food poisoning in this case?

a. Shigella

b. Yersinia

c. Corynebacterium

d. Salmonella

e. Clostridium

108. A ballet dancer spins to the left. During the spin, her eyes snap quickly to the left. This fast eye movement is caused by the activation of:

a. Vestibular receptors of the semicircular ducts

b. Muscle spindles

c. Tendon receptors

d. Joint receptors

e. Otolith vestibular receptors

109. A patient complains of rapid fatigability and severe muscle weakness. Examination detected an autoimmune disease that disturbs the functionality of the receptors in the neuromuscular synapses. What mediator is likely to be blocked in this case?

a. Acetylcholine

b. Dopamine

c. Glycine

d. Serotonin

e. Noradrenaline

110. During gastrulation, three germ layers are being formed (ectoderm, endoderm, and mesoderm). Later they develop into tissues and organs. Ectoderm, in particular, develops into:

a. Skeletal muscles

b. Blood and lymph

c. Intestinal epithelium

d. Hepatic cells

e. Neural tube

111. A 10-year-old homeless boy was brought to the admission room with a severe case of bronchitis. Objectively, the child is exhausted; he presents with delayed physical development, dry peeling skin, trophic ulcers in some places, and a loss of twilight vision («night-blindness»). What vitamin supplements should be prescribed to this boy?

a. Retinol acetate

b. Ascorbic acid

c. Pyridoxine hydrochloride

d. Tocopherol acetate

e. Cyanocobalamin

112. One of the causes of pernicious anemia is the disturbed synthesis of transcobalamin - Castle's intrinsic factor - in the parietal cells of the stomach. What substance is called Castle's extrinsic factor?

a. Pyridoxine

b. Folic acid

c. Cobalamin

d. Riboflavin

e. Biotin

113. A victim of a traffic accident suffered damage to one half of the spinal cord and developed Brown-Séquard syndrome. What causes motor function disturbance on the damaged side below the site of trauma?

- a. The spinothalamic tract crosses over at the level of its entry into the spinal cord and ascends on the opposite side
- b. After their cross over the pyramidal tracts pass through the lateral funiculi of the spinal cord on the opposite side from the muscles they innervate
- c. After their cross over the pyramidal tracts pass through the lateral funiculi of the spinal cord on the side of the muscles they innervate**
- d. The spinothalamic tract does not cross over at the level of its entry into the spinal cord and ascends on the side of the entry
- e. Goll, Burdach, and Flechsig tracts are straight, while Gowers tract crosses over

114. The doctor examines a patient with diabetes mellitus. He needs to check the pulsation of an artery that enters the foot between the tendons of extensor digitorum longus and extensor hallucis longus. What artery is it?

- a. A. plantaris medialis
- b. A. plantaris lateralis
- c. A. tibialis posterior
- d. A. fibularis
- e. A. dorsalis pedis**

115. A 42-year-old man with intestinal atony was prescribed proserin, after which he developed signs of bronchospasm. What type of drug action is it?

- a. Direct action
- b. Main action
- c. Side-effect**
- d. Indirect action
- e. Selective action

116. A 56-year-old woman with angioneurotic edema was prescribed an H1 blocker with antispasmodic, sedative, and local anesthetic action. Select this H1 blocker from the list:

- a. Oxoline (Dioxotetrahydroxytetrahydrc)
- b. Dimedrol (Diphenhydramine)**
- c. Ambroxol
- d. Acyclovir
- e. Levodopa

117. A patient with schizophrenia was prescribed a drug to stop the hallucinations. After a month of taking this drug the hallucinations stopped, but the patient developed signs of drug-induced parkinsonism. What drug was used for treatment in this case?

- a. Aminazine (Chlorpromazine)**
- b. Curantyl (Dipyridamole)
- c. Imizine (Imipramine)
- d. Sodium bromide
- e. Amitriptyline

118. A man was hospitalized with a lower limb trauma in the upper third of the shin. He is unable to extend his foot. What nerve was damaged because of this trauma?

- a. N. plantaris lateralis
- b. N. fibularis superficial
- c. N. fibularis profundus**
- d. N. fibularis communis
- e. N. plantaris medialis

119. A woman with enteritis accompanied by severe diarrhea presents with the loss of water in the

extracellular space, increased water content in the cells, and decreasing blood osmolarity. Name this type of water- electrolyte imbalance:

- a. Hypoosmolar hypohydration
- b. Hyperosmolar hypohydration
- c. Isoosmolar hypohydration
- d. Hypoosmolar hyperhydration
- e. Hyperosmolar hyperhydration

120. A patient was hospitalized in a preshock condition. He has a penetrating wound to the chest and coughs constantly. What medicine will have analgesic and antitussive effect in this case?

- a. Morphine hydrochloride
- b. Prednisolone
- c. Dimedrol (Diphenhydramine)
- d. Libexin (Prenoxdiazine)
- e. Adrenaline hydrochloride

121. A certain type of digestion is disturbed in the patient's small intestine. This type of digestion occurs on the apical surface of enterocytes and uses the membrane-bound enzymes adsorbed in the glycocalyx. What type of digestion is it?

- a. Autolytic Шїгфер
- b. -
- c. Cavitary
- d. Symbiotic
- e. Membrane

122. During gastric resection the patient received mixed anesthesia with tubocurarine chloride muscle relaxant. To restore unassisted respiration in the patient, the patient was given proserin. What pharmacological group does this drug belong to?

- a. Calcium channel blockers
- b. Angiotensin-converting-enzyme inhibitors
- c. Cholinesterase inhibitors
- d. Muscarinic antagonists
- e. Muscarinic agonists

123. To treat the burns, a patient was prescribed a drug with antiseptic properties that are based on formation of atomic oxygen in the presence of organic substances. This drug has also an astringent (anti-inflammatory) effect due to formation of albuminates. Name this drug:

- a. Chlorhexidine digluconate
- b. Potassium permanganate
- c. Sodium bicarbonate
- d. Ethyl alcohol
- e. Hydrogen peroxide

124. A patient is diagnosed with glucocerebroside lipidosis (Gaucher's disease) that manifests as splenomegaly, liver enlargement, affected bone tissue, and neuropathies. What enzyme of complex lipid catabolism is deficient, causing this disease?

- a. Hyaluronidase
- b. Glucocerebrosidase
- c. Sphingomyelinase
- d. Hexosaminidase
- e. β -galactosidase

125. It is a known fact that in the human body the biosynthesis of purine nucleotides occurs de novo from amino acids. Name the amino acids that are used in the synthesis of the purine nucleotide cycle:

- a. Leucine, glutamine, cysteine
- b. Methionine, tryptophan, alanine
- c. Proline, tyrosine, phenylalanine
- d. Glycine, aspartate, glutamine

e. Isoleucine, serine, valine

126. A 5-year-old kindergartener has diphtheria. To find the carriers of this disease among the kindergarten staff, samples of pharyngeal mucus were obtained from the employees. One of the employees had gram-positive bacilli in her sample. They were situated at an angle to each other and colored unevenly, when stained according to Loeffler. What method can confirm that this carrier is dangerous to the other people?

- a. Serum agglutination test
- b. Mouse neutralization test
- c. Toxin production test**
- d. Complement fixation test
- e. Immunofluorescence test

127. A patient with heart failure developed edema. What is the main pathogenetic link of edema development in this case?

- a. Increased circulating blood volume
- b. Decrease of cardiac output**
- c. Increased vascular permeability
- d. Stagnation of blood
- e. Changes in oncotic and osmotic blood pressure

128. The dentist detected herpetic stomatitis in a patient. What medicine should the patient be prescribed?

- a. Midantan (Amantadine)
- b. Acyclovir**
- c. Lincomycin
- d. Erythromycin
- e. Kanamycin

129. A patient has signs of striatopallidal system damage. These signs are caused by disturbed synthesis of a certain mediator in a certain structure. Name this mediator and its corresponding structure:

- a. Serotonin - caudate nucleus
- b. Noradrenaline - putamen
- c. Adrenaline - globus pallidus
- d. Adrenaline - thalamus
- e. Dopamine - substantia nigra**

130. A patient with inherited immunodeficiency underwent gene therapy: the gene of an enzyme was introduced into the patient's cells using a retrovirus. What characteristic of the genetic code allows using retroviruses as vectors of functional genes?

- a. Universality**
- b. Colinearity
- c. Degeneracy
- d. Commaless
- e. Non-ambiguity

131. When preparing for an important sports contest, it is recommended to train at high altitude (2-3 km above mean sea level). Prolonged exposure to such conditions leads to:

- a. Decrease of pO₂, which stimulates erythropoiesis and increases blood oxygen capacity**
- b. Decrease of blood viscosity
- c. Decrease of ESR
- d. Improvement of plasma colloid-suspension characteristics
- e. Increase of arteriovenous oxygen difference

132. ECG of the patient shows increased duration of the QRS complex. What is the most likely cause?

- a. Increased atrial and ventricular excitability
- b. Increased period of atrial excitation

- c. Disturbed conduction in the atrioventricular node
- d. Increased atrial excitability

e. Increased period of ventricular excitation

133. Microscopy of autopsy material detected that the alveolar lumens in the lungs are filled with exudate, consisting mainly of erythrocytes. What is the most likely cause of this development?

- a. Influenza virus pneumonia**
- b. Measles pneumonia
- c. Pneumococcal pneumonia
- d. Staphylococcal pneumonia
- e. Typhoid pneumonia

134. When examining a biopsy material obtained from the thyroid gland, the pathologist discovered lymphocyte infiltration of the thyroid tissues and destruction of the parenchymal elements. Diffuse lymphocyte infiltration with lymphoid follicles was detected in the stroma. What is the most likely diagnosis?

- a. Undifferentiated thyroid carcinoma
- b. Papillary thyroid cancer
- c. Hashimoto's thyroiditis (chronic lymphocytic thyroiditis)**
- d. Solid adenoma of the thyroid
- e. Graves' disease (toxic diffuse goiter)

135. A diet must contain fats. What plasticity function do they fulfill in the body?

- a. They are a part of cellular membranes**
- b. They are a part of cellular ion pumps
- c. They are a part of glycocalyx
- d. They are a part of cellular receptors
- e. They are a part of cellular ion channels

136. A patient diagnosed with liver abscess was hospitalized into the surgery department. He has a history of frequent gastrointestinal disturbances. Laboratory analysis of the patient's feces detected round cells with 4 nuclei. What species of protozoa is this patient infected with?

- a. Entamoeba histolytica**
- b. Trichomonas hominis
- c. Entamoeba gingivalis
- d. Balantidium coli
- e. Trichomonas vaginalis

137. After examination, the doctor diagnosed the patient with parainfluenza, based on the clinical findings. What route of transmission is characteristic of this disease?

- a. Parenteral transmission
- b. Airborne**
- c. Saliva-to-blood transmission
- d. Vector-borne transmission
- e. Fecal-oral transmission

138. A child has cataract, delayed mental development, and enlarged liver. The doctor suspects these signs are caused by the deficiency of hexose-1-phosphate uridylyltransferase. What pathological process is observed in this case?

- a. Hypoglycemia
- b. Hyperlactacidemia
- c. Fructosemia
- d. Hyperlipidemia
- e. Galactosemia**

139. A patient was diagnosed with a parathyroid tumor. He has generalized fibrous osteodystrophy and periodic attacks of renal colic. Ultrasound detected small stones in the kidneys. What is the most likely cause of kidney stone formation?

- a. Hypercholesterolemia
- b. Hyperphosphatemia
- c. Hyperuricemny
- d. Hypercalcemia**
- e. Hypocalcemia

140. A 29-year-old man complains of headache, swelling, weight gain, low urine output, and marked weakness. Laboratory testing revealed increased concentration of TSH. The levels of estrogen, growth hormone, glucose, urea, and creatinine are normal. What medical condition corresponds with these signs?

- a. Hyperthyroidism
- b. Acromegalia
- c. Hypothyroidism**
- d. Glomerulonephritis
- e. Alimentary obesity

141. A person received a penetrating wound of the abdominal cavity. The anterior abdominal wall is injured. The wound tract passes through the plica umbilicalis lateralis. What vessel is damaged?

- a. A. umbilicalis
- b. A. epigastrica inferior**
- c. A. testicularis
- d. A. epigastrica superior
- e. A. circumflexa ilium profunda

142. A 20-year-old man from the early childhood suffered from type I diabetes mellitus and was constantly undergoing insulin therapy. Within the last year he started breaking his diet and was taking his insulin doses irregularly. To detect possible complications, particularly glomerular diseases, the endocrinologist referred him for urinalysis. What is the first persistent sign of glomerular filtration disorder?

- a. Proteinuria**
- b. Cylindruria
- c. Oxaluria
- d. Leukocyturia
- e. Hematuria

143. A patient has developed status epilepticus. What medicine should be used in this case to stop the seizures?

- a. Valerian extract
- b. Diazepam**
- c. Dipravine (Promethazine)
- d. Cycladol (Trihexyphenidyl)
- e. Sodium bromide

144. A woman, who takes an indirect anticoagulant, developed intestinal bleeding. What antagonist drug should she be prescribed?

- a. Trental (Pentoxifylline)
- b. Vicasol (Vitamin K)**
- c. Fercoven (iron sucrose and cobalt gluconate)
- d. Diacarb (Acetazolamide)
- e. Mannitol

145. Biological studies proved that the intensity of testosterone secretion and spermatogenesis varies in men throughout each 24 hours. These biorhythms are called:

- a. Tidal
- b. Annual
- c. Lunar
- d. Seasonal
- e. Circadian**

146. A 48-year-old man is unconscious. He has a history of several syncopal episodes with convulsions. ECG shows deformed QRS complexes unconnected with P waves, atrial contractions are approximately 70/min., ventricular contractions - 25-30/min. Name the type of arrhythmia in this case:

- a. Intraventricular block
- b. Complete atrioventricular block**
- c. Second-degree atrioventricular block
- d. First-degree atrioventricular block
- e. Intraatrial block

147. A person received a head wound. To temporarily stop the bleeding, the doctor pressed with his finger an arterial vessel located in front of the auditory meatus and above the zygomatic arch. Name the damaged artery:

- a. A. carotis interna
- b. A. pharyngea ascendens
- c. A. auricularis posterior
- d. A. maxillaris
- e. A. temporalis superficialis**

148. A 47-year-old woman with chronic pancreatitis accompanied by exocrine pancreatic insufficiency was prescribed pancreatic enzymes. What type of therapy is it?

- a. Etiotropic therapy
- b. Preventive therapy
- c. Replacement therapy**
- d. Pathogenetic therapy
- e. -

149. A woman has lately been excessively excitable and irritable and had insomnia. She was prescribed diazepam. What is the main mechanism of action of this drug?

- a. Serotonin receptor blockade
- b. Beta-adrenergic receptor stimulation
- c. Benzodiazepine receptor stimulation**
- d. Muscarinic acetylcholine receptor stimulation
- e. Nicotinic acetylcholine receptor blockade

150. A patient developed a purulent inflammatory process in the periodontal tissues. The process was caused by activation of the microorganisms inherent in the body, which are a part of oral mucosal microflora. What type of infection is it?

- a. Superinfection
- b. Relapse
- c. Exogenous infection
- d. Reinfection
- e. Autoinfection**