

1. A patient with rheumatoid arthritis has been given hydrocortisone for a long time. He has developed hyperglycemia, polyuria, glycosuria, thirst. These complications of treatment result from the activation of the following process:

- A. Glycogenolysis
- B. Glycogenesis
- C. Glycolysis
- D. Lipolysis
- ☒ E. Gluconeogenesis

2. Tooth extraction in a patient with chronic persistent hepatitis was complicated by a prolonged bleeding. What is the probable cause of hemorrhagic syndrome?

- ☒ A. Decreased production of thrombin
- B. Increased fibrinolysis
- C. Increased synthesis of fibrinogen
- D. Decreased production of fibrin
- E. Increased production of thromboplastin

3. Following treatment with a highly-efficient anti-tuberculosis drug a 48-year-old female developed optic nerve neuritis, memory impairment, cramps. Which of these anti-TB drugs had the patient taken?

- A. PASA
- B. Kanamycin sulfate
- ☒ C. Isoniazid
- D. Rifampicin
- E. Ethambutol

4. During allergic rhinitis (inflammation of the nasal mucosa) the number of basophils in the connective tissue of the mucosa increases, which is accompanied by a tissue edema. This phenomenon is associated with the following function of tissue basophils:

- ☒ A. Production of intercellular substance
- B. Histamine synthesis
- C. Antibody formation
- D. Phagocytosis
- E. Heat production

5. A child is 6 years old. The permanent teeth have started to take the place of the primary teeth. What teeth are the first to emerge?

- A. Lower canines
- B. Upper first premolars
- C. Lower first premolars
- D. Upper medial incisors
- ☒ E. Lower first molars

6. A 65-year-old patient had been treated for 3 days in the resuscitation unit for a cardiac pathology. Suddenly he developed ventricular fibrillation which turned out to be the immediate cause of death. Microscopy of the left ventricular myocard revealed a large focus of cardiomyocyte karyolysis demarcated by the zone of hyperaemia. What cardiac pathology was the cause of death?

- A. Diffuse cardiosclerosis
- ☒ B. Acute myocardial infarction
- C. Acute myocarditis
- D. Ischemic myocardial degeneration
- E. Postinfarction cardiosclerosis

7. Examination of a teenager revealed a congenital heart disease, namely the functioning of Botallo's duct. In the prenatal period of development this duct connects the following organs:

- A. Aorta and inferior vena cava
- B. Right and left atrium
- C. Pulmonary trunk and superior vena cava
- D. Right and left ventricle
- ☒ E. Pulmonary trunk and aorta

8. A patient suffering from stenocardia takes 100 mg of acetylsalicylic acid daily. What is the effect of acetylsalicylic acid in this patient?

- A. Inhibition of blood coagulation
- B. Inhibition of thrombocyte aggregation
- C. Dilatation of coronary vessels
- D. Prothrombin rate reduction
- E. Cholesterol rate reduction

9. Glucose content of blood stays at sufficient level after one week of starvation. Is it caused by activation of the following process:



- A. Glycogen phosphorylase
- B. Tricarboxylic acid cycle
- ☒ C. Glycogenolysis
- D. Gluconeogenesis
- E. Glycolysis

10. A female woman has been clinically diagnosed with gonorrhea. Which of the following studies can be used to confirm the diagnosis?

- A. Hemagglutination reaction
- ☒ B. Microscopy of the pathological material
- C. Immobilization reaction
- D. Bacteriophage test
- E. Disinfection of laboratory animals

11. In the perianal folds of a 5-year-old girl mother found white worms causing itch and anxiety, and took them to the laboratory. The study revealed white filament-like helminths 0.5-1 cm long, with pointed, sometimes twisted, ends. What diagnosis can be made?

- A. Ascariasis
- B. Difilobotrioz
- C. Teniasis
- D. Opisthorchiasis
- ☒ E. Diphyllbothriasis

12. In some areas of South Africa many people have sickle cell disease characterized by red blood cells that assume an abnormal sickle shape due to the substitution of glutamic acid for valine in the hemoglobin molecule. What is the cause of this disease?

- A. Transduction
- B. Crossing-over
- C. Genomic mutation
- D. Disturbances of the mechanisms of genetic information transmission
- ☒ E. Gene mutation

13. A patient has enamel erosion. What vitamin should be administered for its treatment?

- A. PP
- B. C
- ☒ C. D<sub>3</sub>
- D. K
- E. B<sub>1</sub>

14. A histological preparation shows organ, where lymphocytes form

three types of lymphoid structures: lymph nodules, medullary cords and lymphatic sinuses. What organ is it?

- A. Red bone marrow
- B. Tonsil
- ☒ C. Lymph node
- D. Thymus
- E. Spleen

15. A patient with pituitary tumor complains of increased daily diuresis (polyuria). Glucose concentration in blood plasma equals 4.8 mmol/l. What hormone can be the cause of this if its secretion is disturbed?

- ☒ A. Vasopressin
- B. Somatotropine
- C. Aldosterone
- D. Insulin
- E. Natriuretic hormone

16. When examining a child the dentist found the deposit on both tonsils and suspected atypical form of diphtheria. A smear was taken, and after the nutrient media inoculation the toxicity of the isolated pure culture was determined. What reaction was used to determine the toxigenicity of the isolated strain of diphtheria bacillus?

- ☒ A. Gel precipitation reaction
- B. Hemolysis reaction
- C. Agglutination reaction on a glass slide
- D. Complement binding reaction
- E. Ring precipitation reaction

17. A 60-year-old man consulted a doctor about an onset of chest pain. In blood serum analysis showed a significant increase in the activity of the following enzymes: creatine kinase and its MB-isoform, aspartate aminotransferase. These changes indicate the development of the pathological process in the following tissues:

- A. Lungs
- B. Smooth muscles
- C. Liver
- D. Skeletal muscles
- ☒ E. Cardiac muscle

18. A histological specimen represents



a blood vessel. Its inner tunica is composed of endothelium, subendothelium and internal elastic lamina. The middle tunica is rich in smooth muscle cells. What vessel is characterized by these morphological features?

- A. Capillary
- B. Muscular vein
- C. Amuscular vein
- D. Elastic artery
- ☒ E. Muscular artery

19. A patient is diagnosed with seborrheic dermatitis caused by vitamin H (biotin) deficiency. Observed is activity disruption of the following enzyme:

- ☒ A. Acetyl-CoA carboxylase
- B. Pyruvate decarboxylase
- C. Carbamoyl phosphate synthetase
- D. Alcohol dehydrogenase
- E. Aminotransferases

20. A student who unexpectedly met his girlfriend developed an increase in systemic arterial pressure. This pressure change was caused by the intensified realization of the following reflexes:

- A. Conditional sympathetic and parasympathetic
- B. Unconditional sympathetic
- C. Conditional parasympathetic
- ☒ D. Conditional sympathetic
- E. Unconditional parasympathetic

21. During auscultation a 26-year-old patient was asked to breathe deep. After 10 breaths the patient lost consciousness, which is associated with the development of the following condition:

- A. Reduced oxygen capacity of blood
- ☒ B. Respiratory alkalosis
- C. Polycythemia
- D. Carbon dioxide acidosis
- ☒ E. Erythropenia

22. A patient has a history of chronic heart failure. Which of the following hemodynamic parameters is a major symptom of cardiac decompensation development?

- ☒ A. Decreased stroke volume
- B. Tonogenic dilatation
- C. Tachycardia development
- D. Increased peripheral vascular resistance
- E. Increased central venous pressure

23. There are several cases of children from boarding school suffering from sore throat. Microscopy of tonsil smears stained according to Neisser method has revealed thin yellow bacilli with dark brown grains on their ends placed in the shape of Roman numeral five. What infection can be suspected in this case?

- A. Infectious mononucleosis
- B. Scarlet fever
- C. Listeriosis
- D. Tonsillitis
- ☒ E. Diphtheria

24. With the purpose of analgesia, to potentiate the narcotic analgesic, a benzodiazepine drug has been used. What drug has been used to potentiate analgesia?

- A. Chlorprothixene
- B. Trifluazolin
- C. Carbamazepine
- ☒ D. Diazepam
- E. Imizinum

25. Autopsy of a young man revealed some lung cavities with inner walls made up of granulation tissue with varying degrees of maturity; pronounced pneumosclerosis and bronchiectasis. Some cavities had caseation areas. What is your presumptive diagnosis?

- A. Caseous pneumonia
- B. Acute cavernous tuberculosis
- C. Infiltrative tuberculosis
- D. Bronchiectasis
- ☒ E. Fibrous cavernous tuberculosis

26. When examining a female patient a doctor observed the following: misshapen auricles, elevated palate, teeth growth disorder; mental retardation; no disruption of reproductive function. Provisional diagnosis is the "super woman"



syndrome. Point out the karyotype of this disease:

- A. (47, XXY)
- B. (47, YYY)
- ☒ C. (47, XXX)
- D. (45, X0)
- E. (47, XYY)

27. A female patient presents with the ovarian hyperaemia, increased permeability of the blood-follicle barrier with the development of edema, infiltration of the follicle wall with segmental leukocytes. The follicle is large in volume. Its wall is thickened. What period of the sex cycle is the described situation typical for?

- ☒ A. Period of relative rest
- B. Ovulation
- C. Postmenstrual period
- D. Menstrual period
- E. Preovulatory stage

28. As a result of an injury a child developed an abscess of adipose tissue of cheek. With time the process spread to the lateral surface of pharynx. The pus spread along the following fascia:

- A. Temporal
- B. Parotid
- C. -
- D. Masticatory
- ☒ E. Bucco-pharyngeal

29. A female patient with toxemia of pregnancy has hypersalivation resulting in a daily loss of 3-4 liters of saliva. What disorder of water-salt metabolism occurs in such cases?

- A. Hyponatremia
- B. Hyperosmolar hypohydration
- C. Isoosmolar hypohydration
- D. Hypokalemia
- ☒ E. Hypoosmolar hypohydration

30. A patient with a long history of chronic periodontitis underwent removal of a maxillary cyst located at the root of the affected tooth. Microscopy shows that the bone wall is made up of fibrous tissue infiltrated by lymphocytes and plasma cells. The inner surface of the cyst is covered with stratified squamous epithelium with no signs of keratinization. What is the most likely diagnosis?

- A. Gingival fibromatosis
- ☒ B. Radicular cyst
- C. Eosinophilic granuloma
- D. Follicular cyst
- E. Primordial cyst