

# TEST 2015

1. A newborn child born from Rhnegative mother in the result of her third pregnancy presents with gradually worsening jaundice, irritated central nervous system, anemia. What type of jaundice does the infant suffer from?

- A. **Hemolytic**
- B. Hepatocellular
- C. Obstructive
- D. Parasitic
- E. Toxic

2. In an emergency situation a scuba diver has quickly risen from the depths to the surface, thus breaking safety rules. He is unconscious, presents with respiratory failure and cardiac activity disorder as the result of decompression sickness. What complication may develop in the scuba diver?

- A. **Gas embolism**
- B. Fat embolism
- C. Air embolism
- D. Cellular embolism
- E. Thromboembolism

3. The patient has been hospitalised with pneumonia. What kind of respiratory failure does the patient have?

- A. **Restrictive**
- B. Obstructive
- C. Central
- D. Peripheral
- E. Thoracic diaphragm

4. Heart rate of a person at rest is 40/min. What structure is the pacemaker of heart in this man?

- A. **Atrioventricular node**
- B. Sinoatrial node
- C. His' bundle
- D. His' bundle branches
- E. Purkinje fibers

5. The volume of air exhaled by a healthy person during quiet breathing was measured with a spirometer and determined to be 0,5 liter. What is this volume called?

- A. **Tidal volume**
- B. Inspiratory reserve volume
- C. Expiratory reserve volume
- D. Vital capacity of lungs
- E. Residual volume

6. A patient has been taking diclofenac sodium for a long time. A family physician withdrew this drug and prescribed celecoxib. What disease was the cause of drug substitution?

- A. **Peptic ulcer**
- B. Bronchial asthma
- C. Urolithiasis
- D. Arterial hypertension
- E. Chronic hepatitis

7. At the sixth month of pregnancy a woman has been diagnosed with severe iron-deficiency anemia. Diagnostic character was the appearance of the following in blood:

**A. Hypochromic erythrocytes**

- B. Macrocytes
- C. Megalocytes
- D. Reticulocytes
- E. Erythroblasts

8. Diet of a human must contain vitamins. What vitamin is usually prescribed for treatment and prevention of pellagra?

**A. Vitamin PP**

- B. Vitamin C
- C. Vitamin A
- D. Vitamin B1
- E. Vitamin D

9. A 22-year-old man was stung by bees; the affected area became hyperemic and edematous. What is the leading mechanism of edema development in this patient?

**A. Increased permeability of the capillaries**

- B. Decreased hydrostatic blood pressure in the capillaries
- C. Increased oncotic pressure of tissue fluid
- D. Impaired lymphatic efflux
- E. Reduced oncotic pressure of blood

10. A patient has obstruction of the common bile duct. Which of these substances is usually found in urine in such cases?

**A. Bilirubin**

- B. Ketone bodies
- C. Uric acid
- D. Creatinine
- E. Glucose

11. A patient with systemic lupus erythematosus has developed diffuse affection of kidneys followed by proteinuria, hypoproteinemia, extensive swelling. What mechanism of proteinuria development is the most likely in this case?

**A. Autoimmune disorder of the nephron glomerulus**

- B. Inflammatory disorder of the nephron tubule
- C. Ischemic disorder of the nephron tubule
- D. Increased concentration of blood proteins
- E. Disorder of the urinary tracts

12. A woman noticed that a cut on her skin was still bleeding even after 20 minutes had passed. What vitamin deficiency causes such condition?

**A. Vitamin K**

- B. Vitamin A
- C. Vitamin D
- D. Vitamin E
- E. Vitamin B12

13. A 40-year-old man diagnosed with gastric ulcer has developed the symptoms anew after a long period of dormancy. Such disease course can be characterized as a:

**A. Recurrence**

- B. Remission
- C. Recovery
- D. Latency
- E. Prodromal phase

14. An elderly patient exhibits low levels of red blood cells and hemoglobin in blood, but the color index is 1,3. Blood smear analysis revealed megaloblasts. What type of anemia is observed in this case?

- A. B12-folic acid deficiency**
- B. Iron-deficiency
- C. Acquired hemolytic
- D. Hereditary hemolytic
- E. Chronic posthemorrhagic

15. After drinking milk a 1-year-old child has developed diarrhea and flatulence. The baby is likely to have the deficiency of the following enzyme:

- A. Lactase**
- B. Maltase
- C. Aldolase
- D. Hexokinase
- E. Glycosidase

16. A man presents with signs of albinism: blonde hair, extreme photosensitivity, impaired vision. What amino acid metabolism is disrupted in the patient?

- A. Tyrosine**
- B. Methionine
- C. Proline
- D. Histidine
- E. Valine

17. The patient with alcoholic cirrhosis complains of general weakness and dyspnea. The following is revealed: decrease of arterial pressure, ascites, dilation of the superficial veins of the stomach anterior wall, esophageal varicose veins dilatation, splenomegaly. What haemodynamics disorder does the patient suffer from?

- A. Portal hypertension**
- B. Left ventricular failure
- C. Right ventricular failure
- D. Cardiac insufficiency
- E. Collapse

18. The patient has icteric skin; unconjugated bilirubin content in blood is high; conjugated bilirubin in urine is not detected. There is significant amount of urobilin in urine and stercobilin in feces. Name the pathology characterized by the given symptoms:

- A. Hemolytic jaundice**
- B. Obstructive jaundice
- C. Jaundice of the newborn
- D. Hepatocellular jaundice
- E. Atherosclerosis

19. A patient complains of pain in the small joints. High concentration of uric acid is detected in his blood plasma. What pathology causes such changes?

- A. Gout**

- B. Diabetes mellitus
- C. Phenylketonuria
- D. Lesch-Nyhan syndrome
- E. Diabetes insipidus

20. A patient suffering from coronary heart disease, who had had two myocardial infarctions of left ventricular wall, presents with bubbling breathing and dyspnea. Pulmonary auscultation reveals numerous moist crackles. What kind of heart failure is it?

- A. Left ventricular**
- B. Right ventricular
- C. Compensated
- D. Subcompensated
- E. Combined

21. A 46-year-old patient was found to have hyperactivity of creatine kinase in his blood serum. What kind of pathology can be suspected?

- A. Myocardial infarction**
- B. Acute pancreatitis
- C. Chronic hepatitis
- D. Haemolytic anemia
- E. Renal failure

22. In the course of an experiment in the mesenteric vein of a toad a thrombus was created with a crystal of common salt. What processes occurred during the first stage of thrombus formation?

- A. Adhesion, aggregation, agglutination of platelets**
- B. Production of active thromboplastin
- C. Production of thrombin
- D. Production of fibrin monomer
- E. Production of fibrin polymer

23. A patient has a mental disorder due to the insufficient synthesis of gammaaminobutyric acid in the brain. Such pathological changes might be caused by the deficiency of the following vitamin:

- A. Pyridoxine**
- B. Tocopherol
- C. Cyanocobalamin
- D. Folic acid
- E. Riboflavin

24. A 5-year-old child presents with abdominal distension, abdominal cramps, and diarrhea occurring 1-4 hours after drinking milk. Described symptoms are caused by the lack of enzymes that break up:

- A. Lactose**
- B. Glucose
- C. Maltose
- D. Saccharose
- E. Fructose

25. During ultrasound investigation a patient was diagnosed with bilateral renal artery stenosis of atherosclerotic genesis. Specify the bioactive substance that due to its excessive secretion is the key component of arterial hypertension pathogenesis in the given case:

- A. Renin**

- B. Cortisol
- C. Vasopressin
- D. Noradrenaline
- E. Thyroxin

26. A patient was visiting a pharmacy, when he suddenly felt unwell. He developed palpitations, rapid heart rate, pain in the chest that after several minutes spread to the left scapula and left side of the head. What condition should be considered first?

- A. Ischemic heart disease**
- B. Peptic gastric ulcer disease
- C. Dysphagia
- D. Pneumonia
- E. Somatoform autonomic dysfunction

27. After ischemic stroke a 67-year-old patient developed reduced mobility of the left leg. Name this condition:

- A. Paresis**
- B. Paralysis
- C. Myasthenia
- D. Hyperkinesia
- E. Tremor

28. A 32-year-old patient with cerebellar tumor was delivered to an admission room of a hospital. The patient presents with ataxia that can be characterized by:

- A. Disrupted coordination of movements**
- B. Involuntary contraction of skeletal muscles
- C. Increased muscle tone
- D. Pathological reflexes
- E. Irregular force and direction of movements

29. A 40-year-old man presents with rapid weight gain after he had suffered a severe craniocerebral trauma. At doctor's examination the patient's weight was 125 kg, with his weight being 175 cm. What mechanism of obesity development is the most likely in this case?

- A. Hypothalamic**
- B. Alimentary
- C. Hormonal
- D. Hereditary
- E. –

30. What disorder of local circulation is characterized by pallor, local temperature drop, pain, local sensitivity disorder, reduction of the organ volume?

- A. Ischemia**
- B. Venostasis
- C. Thrombosis
- D. Embolism
- E. Arterial hyperemia

# TEST 2014

1. During calculous cholecystitis attack the patient has developed the following symptoms: saponated feces and steatorrhea. What stage of fats metabolism is disrupted according to those symptoms?

**A\* Fat digestion, absorption and secretion**

- B. Fat absorption
- C. Intermediary metabolism of fats
- D. Fats metabolism in adipose tissue
- E. Depositing disruption

2. Parents of the 10-year-old child have made an appointment with endocrinologist due to complaints of child's low height. The child's appearance is corresponding with that of 5-year-old child. What hormone secretion disorder causes such physical development changes?

**A\* Somatotrophic hormone**

- B. Adrenocorticotrophic hormone
- C. Thyroxin
- D. Testosterone
- E. Insulin

3. The 55-year-old patient has been hospitalised due to chronic cardiac failure. Objectively: skin and mucosa are cyanotic, tachycardia, tachypnea. What kind of hypoxia does the patient have?

**A\* Circulatory**

- B. Anemic
- C. Hemic
- D. Tissue
- E. Hypoxic

4. The patient has been hospitalised with pneumonia. What kind of respiratory failure does the patient have?

**A\* Restrictive**

- B. Obstructive
- C. Central
- D. Peripheral
- E. Thoracic diaphragm

5. The patient with acute cardiac failure has developed dyspnea, tachycardia and cyanosis during physical exertion. Name the type of hypoxia.

**A\* Circulatory**

- B. Respiratory
- C. Hemic
- D. Hypoxic
- E. Tissue

6. At the sixth month of pregnancy the female patient has been diagnosed with severe iron-deficiency anemia. Diagnostic character was the appearance of the following in blood:

**A\* Hypochromic erythrocytes**

- B. Macrocytes
- C. Megalocytes
- D. Reticulocytes
- E. Erythroblasts

7. 1 minute after the patient had been administered penicillin the patient's arterial pressure sharply dropped, pulse became thready, cold sweating and clonic convulsions began. Name this condition.

**A\* Anaphylactic shock**

- B. Traumatic shock
- C. Cardiogenic shock
- D. Septic shock
- E. Burn shock

8. Knee joint enlargement and cutaneous edema has developed in the 46-year-old patient with acute knee joint inflammation on the second day. What stage of inflammation progressing are these symptoms usually observed at?

**A\* Exudation**

- B. Alteration
- C. Proliferation
- D. Regeneration
- E. Sclerosis

9. In the process of chemical solution preparation laboratory assistant's forearm was exposed to concentrated hydrochloric acid. There are burning pain, hyperemia and swelling of the damaged area. What pathologic process are these symptoms evidential of?

**A\* Inflammation**

- B. Tumor
- C. Embolism
- D. Thrombosis
- E. Lymphostasis

10. The patient with acute left ventricular failure has developed edema of lungs. What peripheral circulation disorder taking place in the lungs has caused this complication?

**A\* Venous hyperemia**

- B. Arterial hyperemia
- C. Neuroparalytic arterial hyperemia
- D. Pulmonary artery thrombosis
- E. Ischemia

11. In 1915 Japanese scientists Katsusaburo Yamagiwa and Koichi Ichikawa became the first, who induced experimental tumors, by painting ears of rabbits with coal tar. What method of experimental tumor inducing did they use?

**A\* Chemical induction**

- B. Transplantation
- C. Explantation
- D. Cell-free filtrate induction
- E. Radioisotope induction

12. The alleged diagnosis of the newly hospitalised in-patient is leukemia. What symptom among those given below is diagnostic character differentiating acute leukemia from chronic leukemia?

**A\* Leukemic hiatus**

- B. Significant increase of leucocytes number
- C. Leukosis rate
- D. Eosinophil and basophil levels
- E. Gumprecht's shadows (smudge cells)

13. Tetanic spasms of skeletal muscles occur under low calcium concentration in blood. What endocrine disorder can this condition be associated with?

**A\* Hypofunction of parathyroid glands**

- B. Hyperfunction of adrenal cortex
- C. Hypofunction of adrenal cortex
- D. Hyperthyroidism
- E. Hypothyroidism

14. The patient with acute cardiac insufficiency has decreased urine excretion caused by reduction of filtering taking place in glomerules. What causes this drop in filtration?

**A\* Decrease of arterial pressure**

- B. Increase of hepatic blood flow
- C. Exsiccosis
- D. Duct lumen obstruction
- E. Decrease in number of functioning glomerules

15. The 49-year-old female patient suffering long-term from pancreatic diabetes has developed the following symptoms after administering insulin: weakness, facial pallor, palpitation, anxiety, double vision, numbness of lips and tongue apex. Glucose molar concentration in blood was 2,5 mmol/l. What complication has developed in the patient?

**A\* Hypoglycemic coma**

- B. Hyperosmolar coma
- C. Hyperglycemic coma
- D. Hyperketonemic coma
- E. Uremic coma

16. The 40-year-old patient has been diagnosed with gastric ulcer, disease symptoms making reappearance after prolonged period of dormancy. How can this kind of disease progression be qualified?

**A\* Relapse**

- B. Remission
- C. Recovery
- D. Latent period
- E. Prodromal stage

17. The 55-year-old female patient has developed a case of acute pancreatitis caused by greasy food. What is the main pathogenesis step of this disorder?

**A\* Premature activation of enzymes in gland ducts and cells**

- B. Pancreatic juice deficiency
- C. Low bile production in liver
- D. Fats digestion disruption
- E. Acute bowel obstruction

18. As the result of taking herbal medicine the 30-year-old patient has developed anaphylactic allergic reaction and blood leukocytosis. What kind of leukocytosis is characteristic of this case?

**A\* Eosinophilia**

- B. Monocytosis
- C. Lymphocytosis
- D. Basophilia
- E. Neutrophilia

19. Milk intake has resulted in the one-year-old child having diarrhea and abdominal distension. What enzyme deficiency does the child have?

**A\* Lactase**

- B. Maltase
- C. Aldolase
- D. Hexokinase
- E. Glycosidase

20. The patient with alcoholic cirrhosis complains of general weakness and dyspnea. The following is revealed: decrease of arterial pressure, ascites, dilation of stomach anterior wall superficial veins, esophageal varicose veins dilatation, splenomegaly. What haemodynamics disorder does the patient suffer from?

**A\* Portal hypertension**

- B. Left ventricular failure
- C. Right ventricular failure
- D. Cardiac insufficiency
- E. Collapse

21. The 13-year-old female patient having suffered from measles complains of dry mouth, thirst, body weight loss, polyuria, her glucose concentration in blood is 16 mmol/l. What disease can be suspected?

**A\* Type I pancreatic diabetes**

- B. Type II pancreatic diabetes
- C. Diabetes insipidus
- D. Steroidogenic diabetes
- E. Glycogenesis

22. The patient has icteritous skin; unconjugated bilirubin content in blood is high; conjugated bilirubin in urine is not detected. There is significant amount of urobilin in urine and stercobilin in feces. Name the pathology characterized by given symptoms.

**A\* Hemolytic jaundice**

- B. Obstructive jaundice
- C. Jaundice of the newborn
- D. Hepatocellular jaundice
- E. Atherosclerosis

23. The patient has been admitted to the hospital with complaints of general fatigue, headache, lumbago, edema of face and extremities. Urine analysis revealed proteinuria, hematuria and cylindruria. What is the main pathogenetic mechanism of edema formation during glomerulonephritis?

**A\* Decrease of oncotic blood pressure**

- B. Increase of vascular permeability
- C. Increase of hydrodynamic blood pressure
- D. Hormonal disbalance
- E. Lymph flow disruption

24. Fluorography examination of the 59-year-old patient has revealed welldefined shadow, which is characteristic to tumor, in the lower part of the left lung. What trait is characteristic of benign tumor?

**A\* Expansive growth**

- B. Metastasis
- C. Cancer cachexia
- D. Invasion in surrounding tissues
- E. Infiltrating growth

# TEST 2013

1. After taking phenacetin a patient developed acute sore throat, fever. Examination enabled doctors to make a diagnosis of necrotic angina and agranulocytosis. Agranulocytosis can be characterized by a decrease in the amount of the following WBCs:

- A\* **Neutrophils**
- B. Eosinophils
- C. Basophils
- D. Lymphocytes
- E. Monocytes

2. In an emergency situation a scuba diver has quickly risen from the depths to the surface, which is against the rule. He is unconscious, exhibits respiratory failure and cardiac activity disorder as a result of decompression sickness. What complication may develop in the scuba diver?

- A\* **Gas embolism**
- B. Fat embolism
- C. Air embolism
- D. Cellular embolism
- E. Thromboembolism

3. A patient has been hospitalized for chronic heart failure. Objectively: skin and mucous membranes are cyanotic, the patient has tachycardia, tachypnea. What type of hypoxia has developed in the patient?

- A\* **Circulatory**
- B. Anemic
- C. Hemic
- D. Tissue
- E. Hypoxic

4. An injured person exhibits the following signs at the site of trauma: skin redness, throbbing small arteries, elevated local temperature, increased tissue turgor. What local blood circulation disorder are these presentations typical for?

- A\* **Arterial hyperemia**
- B. Venous hyperemia
- C. Thrombosis
- D. Embolism
- E. Ischemia

5. A patient with a diagnosis of drug poisoning has been admitted to the resuscitation department. The patient is in grave condition. Respiration is rapid, superficial, with periods of apnea (Biot's respiration). What was the main cause of the development of periodic breathing in the patient?

- A\* **Inhibition of the respiratory center function**
- B. Impaired function of spinal cord motoneurons
- C. Impaired function of the neuromuscular system
- D. Diminished chest mobility
- E. Pulmonary dysfunction

6. On the 2nd day after developing acute inflammation of the knee joint, the patient exhibits the joint enlargement, swelling of the skin. At what stage of inflammation are these signs typically observed?

- A\* Exudation**
- B. Alteration
- C. Proliferation
- D. Regeneration
- E. Sclerosis

7. A patient had been diagnosed with right lung cancer and administered surgical treatment. After right-sided pneumonectomy the patient developed evident dyspnea. What form of respiratory failure developed in this patient?

- A\* Pulmonary restrictive**
- B. Central
- C. Peripheral
- D. Pulmonary obstructive
- E. Thoracodiaphragmal

8. A 22-year-old male was stung by bees, the affected region became hyperemic and edematous. What is the leading mechanism of edema development in this patient?

- A\* Increased permeability of the capillaries**
- B. Decreased hydrostatic blood pressure in the capillaries
- C. Increased oncotic pressure of tissue fluid
- D. Impaired lymphatic efflux
- E. Reduced oncotic pressure of blood

9. A patient has obstruction of the common bile duct. Which of these substances is usually found in urine in such cases?

- A\* Bilirubin**
- B. Ketone bodies
- C. Uric acid
- D. Creatinine
- E. Glucose

10. A patient with chronic renal failure exhibits azotemia, hypo- and isosthenuria. What is the main factor in the pathogenesis of these symptoms in the patient?

- A\* Reduction of existing nephrons mass**
- B. Increase in glomerular filtration rate
- C. Reduction of tubular secretion
- D. Disturbance of the permeability of the glomerular membrane
- E. Decrease in glomerular filtration rate in each nephron

11. A hospital admitted a patient with arterial hypertension induced by renal artery stenosis. The patient complains of persistent nausea and headache. The main element in the pathogenesis of hypertension is the activation of the following system:

- A\* Renin-angiotensin**
- B. Hypothalamic-pituitary
- C. Kallikrein-kinin
- D. Sympathoadrenal
- E. Parasympathetic

12. Addison's (bronze) disease is treated with glucocorticoids. Their effect is provided by the potentiation of the following process:

- A\* Gluconeogenesis**
- B. Glycolysis

- C. Pentose phosphate cycle
- D. Glycogenolysis
- E. Ornithine cycle

13. After an insulin injection a 45-yearold female with a long history of diabetes mellitus has developed weakness, paleness, palpitation, anxiety, double vision, numbness of lips and the tip of tongue. Blood glucose is at the rate of 2,5 mmol/l. What complication has developed in the patient?

- A\* Hypoglycemic coma**
- B. Hyperosmolar coma
- C. Hyperglycemic coma
- D. Hyperketonemic coma
- E. Uremic coma

14. A 45-year-old male patient was diagnosed with stomach ulcer. After the conservative treatment the pain and heartburn disappeared, the function of the gastrointestinal tract was normalized. Endoscopic examination of stomach revealed cicatrization of the ulcer. Qualify this course of the disease:

- A\* Remission**
- B. Relapse
- C. Latent period
- D. Recovery
- E. Prodromal stage

15. An older patient exhibits low levels of red blood cells and hemoglobin in blood, but the color index is 1,3. Blood smear analysis revealed megaloblasts. What type of anemia is observed in this case?

- A\* B<sub>12</sub>-folic acid deficiency**
- B. Iron-deficiency
- C. Acquired hemolytic
- D. Hereditary hemolytic
- E. Chronic posthemorrhagic

16. In response to the administration of protein drugs, a patient developed an allergic reaction. The development of the allergic reaction is caused by the increased synthesis of the following compound:

- A\* Histamine**
- B. Choline
- C. Adrenaline
- D. Histidine
- E. Serotonin

17. A patient with acute myocarditis exhibits rapid fatigability, shortness of breath, edemata of legs, hepatomegaly. Classify the type of heart failure by the mechanism of its development:

- A\* Myocardial**
- B. Overload
- C. Compensated
- D. Subcompensated
- E. Combined

18. After a contact with a person having an infectious diseases, the disease pathogens entered the patient's body and started to multiply, but the symptoms of the disease were not yet observable. What period of the disease is this typical for? **A\* Latent**

- B. Prodromal
- C. Manifest illness stage
- D. Clinical outcome
- E. Relapse

19. A male patient developed fever up to 40°C, there are vomiting, diarrhea, the patient is in grave condition. Blood osmolality is 270 mOsm/l. What disorder of water-salt metabolism is observed in the patient?

**A\* Hypoosmolar hypohydration**

- B. Isoosmolar hypohydration
- C. Hyperosmolar hypohydration
- D. Isoosmolar hyperhydration
- E. Hypoosmolar hyperhydration

20. A male received a radiation dose of 30 Gy. He presents with necrotic angina, disorders of the gastrointestinal tract. Blood tests revealed anemia, leukopenia and thrombocytopenia. What phase of acute radiation syndrome is observed in the patient?

**A\* Manifest illness stage**

- B. Primary reactions
- C. Latent
- D. Outcome of disease
- E. –

21. As a result of hypothermia a male patient developed acute diffuse glomerulonephritis. What type of allergic reaction caused damage to the glomerular capillaries in the patient?

**A\* Immunocomplex**

- B. Anaphylactic
- C. Cytotoxic
- D. Cell-mediated
- E. Stimulating

22. As a result of an emergency situation (shipwreck) a man had to drink sea (salty) water. What form of water-salt imbalance may occur in this case?

**A\* Hyperosmolar hyperhydration**

- B. Hypoosmolar hyperhydration
- C. Hypotonic hyperhydration
- D. Isoosmolar hyperhydration
- E. Isotonic hyperhydration

## TEST 2012

1. Examination of the lower limbs of a 40-year-old patient with coronary artery disease and vascular disease of the lower limbs (obliterating endarteritis) revealed skin pallor and dystrophy, local temperature decrease, sense shock, pain. The patient is likely to have the following disorder of the peripheral blood circulation: **A\* Obstruction ischemia**

- B. Compression ischemia
- C. Angiospastic ischemia
- D. Venous hyperaemia
- E. Arterial hyperaemia

2. A patient has been found to have sugar in the urine. Blood glucose is normal. Arterial pressure is normal. What is the mechanism of glycosuria development in this case?

**A\* Disturbance of glucose reabsorption in the nephron tubules**

- B. Insulin deficiency
- C. Hyperfunction of adrenal medulla
- D. Hyperfunction of thyroid gland
- E. Hyperfunction of adrenal cortex

3. After taking phenacetin a patient developed acute sore throat, body temperature rise. Examination allowed doctors to make a diagnosis of necrotic angina and agranulocytosis. Agranulocytosis can be characterized by a decrease in the amount of the following WBCs:

**A\* Neutrophils**

- B. Eosinophils
- C. Basophils
- D. Lymphocytes
- E. Monocytes

4. A newborn born to an Rh-negative mother (3rd pregnancy) presents with progressing jaundice, symptoms of CNS excitation, anemia. What type of jaundice is it?

**A\* Hemolytic**

- B. Parenchymatous
- C. Obstructive
- D. Parasitic
- E. Toxic

5. In an emergency situation a scuba diver has quickly risen from the depths to the surface, which is against the rule. He is unconscious, presents with respiratory failure and cardiac activity disorder as a result of decompression sickness. What complication may develop in the scuba diver?

**A\* Gas embolism**

- B. Fat embolism
- C. Air embolism
- D. Cellular embolism
- E. Thromboembolism

6. A patient has been hospitalized for chronic heart failure. Objectively: skin and mucous membranes are cyanotic, the patient has tachycardia, tachypnea. What type of hypoxia has developed in the patient?

**A\* Circulatory**

- B. Anemic
- C. Hemic
- D. Tissue
- E. Hypoxic

7. A group of alpinists climbing to the top had their blood tested. The test revealed erythrocytosis and an increase in hemoglobin rate. What type of hypoxia caused the stimulation of erythropoiesis in the bone marrow?

**A\* Hypoxic**

- B. Combined
- C. Hemic
- D. Circulatory

E. Tissue

8. A patient has obstruction of the common bile duct. Which of these substances is usually found in urine in such cases?

**A\* Bilirubin**

B. Ketone bodies

C. Uric acid

D. Creatinine

E. Glucose

9. A continuous stay in the mountains causes an increase of blood oxygen capacity. What is the possible reason for this phenomenon?

**A\* Development of functional erythrocytosis**

B. Increase of  $PO_2$  rate in the air

C. Increase of  $PCO_2$  rate in the air

D. Decrease in respiratory rate and depth

E. Development of gas acidosis

10. A patient with systemic lupus erythematosus has developed a diffuse renal affection accompanied by proteinuria, hypoproteinemia, massive edema. What is the mechanism of proteinuria development in this case?

**A\* Autoimmune affection of glomeruli**

B. Inflammation of renal tubules

C. Ischemic affection of tubules

D. Blood protein increase

E. Affection of urinary tracts

11. A hospital admitted a patient with arterial hypertension induced by renal artery stenosis, complaints of persistent nausea and headache. The main element in the pathogenesis of hypertension is the activation of the following system:

**A\* Renin-angiotensin**

B. Hypothalamic-pituitary

C. Kallikrein-kinin

D. Sympathoadrenal

E. Parasympathetic

12. A warmly dressed child has spent a considerably long time out of doors. This resulted in body temperature elevation and general weakness development. What form of thermoregulation disorder is observed in this case?

**A\* Exogenous hyperthermia**

B. Endogenous hyperthermia

C. Fever

D. Heat shock

E. Centrogenous hyperthermia

13. A patient with pneumosclerosis has blood pH at the rate of 7,34. Analysis of gas formula of blood showed hypercapnia. Urine analysis revealed an acidity increase. What form of acid-base disbalance is the case?

**A\* Gaseous acidosis**

B. Secretory alkalosis

C. Gaseous alkalosis

D. Non-gaseous alkalosis

E. Non-gaseous acidosis

14. A 70-year-old patient has been found to have atherosclerosis of heart and brain vessels. Examination revealed the changes in the lipid profile. Pathogenesis of atherosclerosis is greatly influenced by an increase in the following lipoproteins rate:

- A\* **Low-density lipoprotein**
- B. Very-low-density lipoproteins
- C. Intermediate-density lipoproteins
- D. High-density lipoprotein
- E. Chylomicrons

15. After eating strawberries a child presented with itchy red spots on the skin (hives). According to the classification of Coombs and Jell this reaction relates to the following type of allergic reactions:

- A\* **Reagin (anaphylactic)**
- B. Cytotoxic
- C. Immunocomplex
- D. Cell-mediated
- E. Stimulating

16. After an insulin injection a 45-year-old woman with a long history of diabetes mellitus has developed weakness, paleness, palpitation, anxiety, double vision, numbness of lips and the tip of tongue. Blood glucose is at the rate of 2,5 mmol/l. What complication has developed in the patient?

- A\* **Hypoglycemic coma**
- B. Hyperosmolar coma
- C. Hyperglycemic coma
- D. Hyperketonemic coma
- E. Uremic coma

17. A patient was found to have an increased blood serum LDH-1 activity. In which organ is the pathological process localized?

- A\* **Heart**
- B. Liver
- C. Kidneys
- D. Stomach
- E. Muscles

18. A patient with alcoholic cirrhosis complains of general weakness, dyspnea. He has been found to have decreased blood pressure, ascites, enlargement of superficial veins of the anterior abdominal wall, esophageal varices, splenomegaly. What hemodynamic disorder is observed in the patient?

- A\* **Portal hypertension**
- B. Left ventricular failure
- C. Right ventricular failure
- D. Heart failure
- E. Collapse

19. A man who had been struck in the epigastric region had a heart arrest. What caused such changes in the cardiac activity?

- A\* **Increased vagal tonus**
- B. Adrenaline release

- C. Increased sympathetic tonus
- D. Angiotensin II release
- E. Histamine release

20. A patient has developed an attack of bronchial asthma: he has laboured respiration with the frequency of 24-26/min., inspirations take turns with prolonged expirations involving participation of expiratory muscles. What form of respiratory failure has developed in the patient?

- A\* Expiratory dyspnea**
- B. Cheyne-Stokes
- C. Biot's
- D. Inspiratory dyspnea
- E. Apneustic respiration

21. A 58-year-old male patient was found to have a peripheral circulation disorder with a restricted arterial inflow, paleness of the respective region, drop of partial oxygen pressure in it. This disorder is called:

- A\* Ischemia**
- B. Arterial hyperemia
- C. Thrombosis
- D. Venostasis
- E. Reperfusion syndrome

22. A male received a radiation dose of 30 Gy. He presents with necrotic angina, disorders of the gastrointestinal tract. Blood tests revealed anemia, leukopenia and thrombocytopenia. What period of acute radiation sickness is observed in the patient?

- A\* Height of disease**
- B. Primary reactions
- C. Imaginary wellbeing
- D. End of disease
- E. -

## TEST 2011

1. A child with evident hypotrophy got edemata on his lower extremities, ascites. What is the main mechanism of pathogenesis of cachectic edema?

- A\* Drop of oncotic pressure of blood plasma**
- B. Rise of hydrostatic blood pressure
- C. Rise of oncotic pressure of intercellular fluid
- D. Increased permeability of vascular wall
- E. Disturbance of lymph outflow

2. Examination of a patient revealed an increase in low-density lipoprotein concentration in blood serum. The patient can be expected to have the following disease:

- A\* Atherosclerosis**
- B. Pneumonia
- C. Glomerulonephritis
- D. Acute pancreatitis
- E. Gastritis

3. A patient had cerebral haemorrhage that made impossible active motions of left arm and leg. Muscle tone of these limbs is increased, their spinal reflexes are intensified, reflex zones are increased. What type of CNS disorder is it?

**A\* Central paralysis**

- B. Peripheral paralysis
- C. Spinal shock
- D. Atonic paralysis
- E. Reflex paralysis

4. After a girl had accidentally eaten inedible mushrooms she was admitted to the resuscitation unit with symptoms of impaired consciousness, arterial hypotension, anuria, hyperazotemia. What kind of renal dysfunction is it?

**A\* Acute renal failure**

- B. Acute glomerulonephritis
- C. Acute pyelonephritis
- D. Urolithiasis
- E. Urine acid diathesis

5. Gastric juice of a patient has decreased concentration of enzymes. What secretory cells of stomach display dysfunction?

**A\* Chief cells of glands**

- B. Parietal cells of glands
- C. Gland mucocytes
- D. Cells of tegumental epithelium
- E. G-cells

6. What disorder of local circulation is characterized by pallor, local temperature drop, pain, local sensitivity disorder, reduction in the volume of the organ?

**A\* Ischemia**

- B. Venostasis
- C. Thrombosis
- D. Embolism
- E. Arterial hyperemia

7. Cellular and plasma mediators play an important part in the pathogenesis of secondary alteration during inflammation. What mediators are produced in the blood plasma?

**A\* Bradykinin**

- B. Histamine
- C. Leukotrienes
- D. Prostaglandins
- E. Lysosomal factors

8. A 45-year-old woman has frequent uterine haemorrhages, she presents with general weakness, dyspnea, tachycardia, cardiac pain. In blood: erythrocytes -  $3 \cdot 10^9/l$ , Hb- 70 g/l, colour index - 0,7. The smear contains mostly hypochromic erythrocytes, microcytes. Specify the type of anaemia according to its mechanism of development:

**A\* Iron-deficiency**

- B. B<sub>12</sub>-folate-deficiency
- C. Haemolytic
- D. Minkowsky-Shauffard disease
- E. Protein-deficiency

9. After a 5-year-old child has been brought home from the kindergarten he presented with weakness, headache, body temperature rise up to 37,5°C. What period of disease development is the case?

**A\* Prodromal**

- B. Latent
- C. Incubative
- D. Recovery
- E. Fastigium

10. A 56 year-old patient complains about limitation of movements and pain in hand joints, mainly at night. Objectively: there is a disfiguring painful swelling of affected joints. Blood and urine have high concentration of uric acid. What disease has developed?

**A\* Gout**

- B. Pellagra
- C. Phenylketonuria
- D. Alkaptonuria
- E. Tyrosinosis

11. Every year during the plant blossoming a female patient develops acute catarrhal inflammation of conjunctiva and nasal mucosa that is the clinical presentation of an allergy. These symptoms relate to the following type of allergic reactions:

**A\* Anaphylactic**

- B. Cytotoxic
- C. Immune complex
- D. Cell-mediated
- E. Cellular dysfunction

12. Alpha-cells of pancreas stimulate synthesis of the glucagon hormone that is involved into the carbohydrate metabolism. It has the following effect on liver processes:

**A\* Activates glycogenolysis**

- B. Activates alcoholic fermentation
- C. Inhibits glycogenolysis
- D. Inhibits glycolysis
- E. Activates lipogenesis

13. A 37-year-old man was admitted to a hospital with an attack of bronchial asthma. What respiration type will be observed in this patient?

**A\* Expiratory dyspnea**

- B. Inspiratory dyspnea
- C. Apnoea
- D. Gasping respiration
- E. Hyperpnoea

14. A patient was diagnosed with right lung cancer and doctors administered him surgical treatment. After right-sided pneumonectomy the patient began to suffer from evident dyspnea. What form of respiratory failure is it?

**A\* Pulmonary restrictive**

- B. Central
- C. Peripheral
- D. Pulmonary obstructive
- E. Thoracodiaphragmal

15. A patient complains about an increase in heart rate, hyperperspiration, irritability, sleeplessness. He has been presenting with these symptoms for the latest six months. They indicate the hyperfunction of the following endocrine gland:

**A\* Thyroid gland**

- B. Pancreas
- C. Adrenal glands
- D. Sexual glands
- E. Thymus

16. A 50-year-old patient complains of having dyspnea under a considerable physical stress, leg edemata. Examination reveals chronic myocarditis and circulatory failure. What is the evidence of cardiac decompensation in the patient? **A\* Decreased cardiac output**

- B. Increased blood flow velocity
- C. Increased vascular resistance
- D. Decreased venous pressure
- E. Increased hydrostatic pressure in the lumen of blood vessels

17. Parents of a 11-year-old boy noticed that he is far behind his peers in the physical development. After the Xray an endocrinologist revealed that the growth zones of tubular bones had already closed. Under these conditions, the intake of growth hormone can result in the development of:

**A\* Acromegaly**

- B. Gigantism
- C. Dwarfism
- D. Cretinism
- E. Myxedema

18. A 46-year-old patient was found to have hyperactivity of creatine kinase in blood serum. What kind of pathology should be suspected?

**A\* Myocardial infarction**

- B. Acute pancreatitis
- C. Chronic hepatitis
- D. Haemolytic anemia
- E. Renal failure

19. Depressurization of the cabin at an altitude of 19 km led to instantaneous death of pilots. What is its cause?

**A\* Explosive decompression**

- B. Hematencephalon
- C. Myocardial infarction
- D. Bleeding
- E. Respiratory centre paralysis

20. A 73-year-old patient had been admitted to a hospital with closed fracture of his right femur. Suddenly his condition deteriorated, the patient was diagnosed with vascular embolism. What type of embolism is observed most often in patients with the fractures of tubular bones?

**A\* Fatty**

- B. Air
- C. Tissue
- D. Retrograde
- E. Gas

21. A female patient consulted a doctor about leg pain that arises usually toward the evening; feet and shins edemata. Objectively: leg skin is cyanotic, cold to the touch. What type of peripheral circulation disorder does the patient present with?

**A\* Venous hyperaemia**

- B. Arterial hyperaemia
- C. Ischaemia
- D. Stasis
- E. Thrombosis

22. A patient with current coronary heart disease who had had two myocardial infarctions of left ventricular wall presents with bubbling breathing and dyspnea. Pulmonary auscultation reveals moist rales. What kind of heart failure is it?

**A\* Left ventricular**

- B. Right ventricular
- C. Compensated
- D. Subcompensated
- E. Combined

## TEST 2010

1. Examination of the lower limbs of a 40- year-old patient with coronary artery disease and vascular disease of lower limbs (obliterating endarteritis) revealed skin pallor and dystrophy, local temperature decrease, sense shock, pain. The patient is likely to have the following disorder of the peripheral blood circulation:

**A\* Obstruction ischemia**

- B. Compression ischemia
- C. Angiospastic ischemia
- D. Venous hyperaemia
- E. Arterial hyperaemia

2. A 45-year-old patient complains of nausea, foul-smelling eructation, periodic vomiting, meteorism. Fractional analysis of the secretory function of stomach revealed the absence of hydrochloric acids and some enzymes. The patient has the following pathology of the gastrointestinal tract:

**A\* Achylia**

- B. Hypochlorhydria
- C. Hypoacidic state
- D. Achlorhydria
- E. Anacidic state

3. A child with evident hypotrophy got edemata on his lower extremities, ascites. What is the main mechanism of pathogenesis of cachectic edema?

**A\* Drop of oncotic pressure of blood plasma**

- B. Rise of hydrostatic blood pressure
- C. Rise of oncotic pressure of intercellular fluid
- D. Increased permeability of vascular wall
- E. Disturbance of lymph outflow

4. As a result of spine injury a female patient has no voluntary movements of her lower limbs. This disorder is called:

**A\* Paraplegia**

- B. Tetraplegia
- C. Monoplegia
- D. Hemiplegia

E. Paraparesis

5. A patient complains of pain behind the breastbone on the left, perspiration and palpitation. Which of the following enzymes should be found in blood in order to confirm the diagnosis of myocardium infarction?

**A\* AspAT, CPK, LDH-1**

B. AlAT, aldolase, LDH-4

C. Amylase, alkaline phosphatase, AlAT

D. Acid phosphatase, LDH-5, LDH-4

E.  $\alpha$ -fetoprotein, aldolase, CPK

6. A patient has bradycardia, moderate hypotension, decrease of basal metabolism, edemata. What disorder can induce such syndrome?

**A\* Thyroid hypofunction**

B. Parathyroid hypofunction

C. Thyroid hyperfunction

D. Parathyroid hyperfunction

E. Adrenal hypofunction

7. A 45-year-old woman has frequent uterine haemorrhages, she presents with general weakness, dyspnea, tachycardia, cardiac pain. In blood: erythrocytes -  $3 \cdot 10^9/l$ , haemoglobin - 70 g/l, colour index - 0,7. The smear contains mostly hypochromic erythrocytes, microcytes. Specify the type of anaemia according to its mechanism of development:

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C. Haemolytic

D. Minkowsky-Shauffard disease

E. Protein-deficiency

8. After a 5-year-old child has been brought home from the kindergarten he presented with weakness, headache, body temperature rise up to 37,5°C. What period of disease development is the case?

**A\* Prodromal**

B. Latent

C. Incubative

D. Recovery

E. Fastigium

9. Every year during the plant blossoming a female patient develops acute catarrhal inflammation of conjunctiva and nasal mucosa that is the clinical presentation of an allergy. These symptoms relate to the following type of allergic reactions:

**A\* Anaphylactic**

B. Cytotoxic

C. Immune complex

D. Cell-mediated

E. Cellular dysfunction

10. A group of alpinists climbing to the top had their blood tested. The test revealed erythrocytosis and increase in hemoglobin rate. What type of hypoxia caused the stimulation of erythropoiesis in the bone marrow?

**A\* Hypoxic**

B. Combined

- C. Hemic
- D. Circulatory
- E. Tissue

11. A 42-year-old patient suffering from chronic calculous cholecystitis complains of acute pain in the right subcostal area, itching and skin icteritiousness, multiple petechial haemorrhages, saponified and light-coloured feces (steatorrhea). What type of icterus is it?

**A\* Mechanic**

- B. Hemolytic
- C. Parenchymatous
- D. Cythemolytic
- E. Hepatocellular

12. A patient diagnosed with acute abdomen was delivered to the hospital. A doctor suspected acute appendicitis and ordered urgent blood test. What factor would be the evidence of acute inflammation in this patient?

**A\* Leukocytosis**

- B. Leukopenia
- C. Eosinophilia
- D. Erythrocytosis
- E. Erythropenia

13. A 37-year-old man was admitted to a hospital with an attack of bronchial asthma. What respiration type will be observed in this patient?

**A\* Expiratory dyspnea**

- B. Inspiratory dyspnea
- C. Apnoea
- D. Gasping respiration
- E. Hyperpnoea

14. A patient with acute pneumonia has an edema and hardening of pulmonary tissue. What cells are the first to infiltrate the inflammation zone and provide the effective protection from the bacterial infection?

**A\* Neutrophils**

- B. Monocytes
- C. Thrombocytes
- D. Eosinophils
- E. Basophils

15. A patient suffering from the essential hypertension presents with an increase in the arterial pressure up to 180/110 mm Hg; dyspnea, cyanosis, tachycardia; heart borders are dilated to the left, in lungs moist rales are present. What signs of urgent compensation for cardiac failure are observed?

**A\* Tachycardia**

- B. Arterial pressure rise
- C. Cyanosis
- D. Dyspnea
- E. Myogenic dilatation

16. A Rh-positive child of a Rh-negative woman (secundipara) has yellow skin, pathologic reflexes, convulsions. The child has an increased rate of indirect bilirubin in blood. What type of jaundice is it?

**A\* Haemolytic**

- B. Hepatic with violation of bilirubin capture
- C. Hepatic with violation of bilirubin conjugation
- D. Hepatic with violation of bilirubin excretion
- E. Mechanic

17. After a road accident a patient has the arterial pressure at the rate of 70/40 mm Hg and daily diuresis at the rate of about 300 ml. What is the mechanism of oliguria development in this case?

**A\* Decrease in glomerular filtration**

- B. Increase in glomerular filtration
- C. Decrease in tubular reabsorption
- D. Increase in tubular reabsorption
- E. Decrease in tubular secretion

18. A 57-year-old worker at an asphalt plant complains of weakness, cough with blood-streaked sputum, chest pain. He has been diagnosed with lung cancer. What is the first stage of carcinogenesis?

**A\* Transformation**

- B. Promotion
- C. Activization
- D. Progression
- E. Induction

19. Examination of a patient revealed an increase in low-density lipoprotein concentration in blood serum. The patient can be expected to have the following disease:

**A\* Atherosclerosis**

- B. Pneumonia
- C. Glomerulonephritis
- D. Acute pancreatitis
- E. Gastritis

20. A warmly dressed child has spent a considerably long time out of doors. This resulted in body temperature elevation and general weakness development. What form of thermoregulation disorder is observed in this case?

**A\* Exogenous hyperthermia**

- B. Endogenous hyperthermia
- C. Fever
- D. Heat shock
- E. Centrogenous hyperthermia

21. A patient with pneumosclerosis has blood pH at the rate of 7,34. Analysis of gas formula of blood showed hypercapnia. Urine analysis revealed the increase in its acidity. What form of acid-base disbalance is the case?

**A\* Gaseous acidosis**

- B. Secretory alkalosis
- C. Gaseous alkalosis
- D. Non-gaseous alkalosis
- E. Non-gaseous acidosis

# TEST 2009

1. An adult presents with systemic arterial pressure at the rate of 160/100 mm Hg. This might be caused by the increased concentration of the following hormone in blood:

- A\* Adrenalin**
- B. Aldosterone
- C. Glucagon
- D. Cortisol
- E. Thyroxin

2. After a stomach resection a patient presented with weakness, skin pallor, face puffiness, enlargement of liver and spleen. Analysis of the peripheral blood revealed megaloblasts and megalocytes; hyperchromatism (colour index - 1,3). What type of anaemia is observed in this patient?

- A\* B<sub>12</sub>-deficient**
- B. Haemolytic
- C. Hypoplastic
- D. Iron-deficient
- E. Toxic

3. A patient has bradycardia, moderate hypotension, decrease of basal metabolism, edemata. What abnormality can induce such syndrome?

- A\* Thyroid hypofunction**
- B. Parathyroid hypofunction
- C. Thyroid hyperfunction
- D. Parathyroid hyperfunction
- E. Adrenal hypofunction

4. Most cases of alimentary starvation are accompanied by development of evident edemata. What is the leading pathogenetic mechanism of edemata development in this case?

- A\* Fall of oncotic pressure of blood plasma**
- B. Rise of hydrostatic pressure in the capillaries
- C. Fall of hydrostatic pressure in the tissues
- D. Rise of oncotic pressure in the intercellular fluid
- E. Fall of osmotic pressure in the intercellular fluid

5. A patient suffering from pleuritis underwent pleural puncture. There was obtained a transparent odourless liquid. What type of exudate was obtained?

- A\* Serous**
- B. Haemorrhagic
- C. Purulent
- D. Fibrinous
- E. Putrefactive

6. The leukocytes that are the first to appear in a focus of inflammation are called: **A\***

- Neutrophils**
- B. Monocytes
- C. Eosinophils
- D. Lymphocytes
- E. Basophils

7. A female patient consulted a doctor about leg pain that arises usually toward the evening; feet and shins edemata. Objectively: leg skin is cyanotic, cold to the touch. What type of peripheral circulation disorder does the patient present with?

**A\* Venous hyperaemia**

- B. Arterial hyperaemia
- C. Ischaemia
- D. Stasis
- E. Thrombosis

8. A patient 42 year old suffering from chronic calculous cholecystitis complains about acute pain in the right subcostal area, itching and skin icteritiousness, multiple petechial haemorrhages, saponified and lightcoloured feces (steatorrhea). What type of icterus is it?

**A\* Mechanic**

- B. Hemolytic
- C. Parenchymatous
- D. Cythemolytic
- E. Hepatocellular

9. A patient suffers from the cerebral atherosclerosis. Blood count showed hyperlipoproteinemia. You will most likely observe increase in the concentration of the following plasma lipoprotein class:

**A\* Low-density lipoproteins**

- B. High-density lipoproteins
- C. Chylomicrons
- D. Globulin complexes with steroid hormones
- E. Fatty acid complexes with albumines

10. A 55-year-old woman with renal failure has arterial pressure at the rate of 170/100 mm Hg. Stable pressure rise is caused by hyperactivity of the following system:

**A\* Renin-angiotensin-aldosterone**

- B. Sympathoadrenal
- C. Hypothalamo-pituitary
- D. Central nervous
- E. Kallikrein-kinin

11. After a birth trauma a newborn presents with limited movements of the right upper extremity, hyporeflexia, myatrophy. These changes relate to following type of motor dysfunctions:

**A\* Peripheric (atonic) paralysis**

- B. Central paralysis
- C. Myasthenia
- D. Bulbar paralysis
- E. Neuritis

12. A 37-year-old man was admitted to a hospital with an attack of bronchial asthma. What respiration type will be observed in this patient?

**A\* Expiratory dyspnea**

- B. Inspiratory dyspnea
- C. Apnoea
- D. Gasping respiration
- E. Hyperpnoea

13. A patient presents with Kussmaul's respiration, acetone smell from the mouth; low tonus of eyeballs, myotic pupils, dry skin, polyuria, glycosuria, hyperglycemia. Such symptom complex is typical for the following coma:

**A\* Diabetic**

B. Hepatic

C. Alimentary dystrophic

D. Hypoglycemic

E. Adrenal

14. A patient suffering from the bone marrow form of radiation sickness was found to have the following changes in his hemogram: leukocytes -  $2 \cdot 10^9/l$ , lymphopenia, erythrocytes -  $3,0 \cdot 10^{12}/l$ , Hb- 52 g/l, thrombocytes -  $105 \cdot 10^9/l$ , reduced blood coagulation. These changes are typical for the following stage of the radiation sickness:

**A\* Fastigium**

B. Latent period

C. Prodromal period

D. Solution

E. Relapse

15. Immediate-type allergies are characterized by degranulation of the tissue basophils that secrete biologically active substances. One of such substances is:

**A\* Histamine**

B. Acetylcholine

C. Plasminogen

D. Hageman's factor

E. Thromboxane

16. A 56-year-old female patient complains about a fast growing hard neoplasm in the mammary gland that appeared a month ago. Objectively: the formation is fused with the surrounding tissues, it is uneven, slightly painful. What are the peculiarities favouring the infiltrative growth of a malignant tumour?

**A\* Lack of contact inhibition**

B. Intensified chalone formation

C. Intensified contact inhibition

D. Intensified formation of tight contacts

E. Rise of embryonal antigens

17. A patient complains about an increase in heart rate, hyperperspiration, irritability, sleeplessness. He has been presenting with these symptoms for the latest six months. They indicate the hyperfunction of the following endocrine gland:

**A\* Thyroid gland**

B. Pancreas

C. Adrenal glands

D. Sexual glands

E. Thymus

18. A patient was found to have an increase in total bilirubin concentration in plasma at the expense of indirect bilirubin; high rate of stercobilin in feces and urine; normal rate of direct bilirubin. What jaundice is it?

**A\* Haemolytic**

B. Mechanic

C. Gilbert's syndrome

- D. Parenchymatous
- E. Physiological

19. A 47-year-old patient with an arm injury was delivered to a hospital in pain shock condition. Objectively: the patient is in grave condition, with mental confusion; integuments are moist, pale, acrocyanotic. There are also tachypnea, fall in the arterial pressure, tachycardia. What type of hypoxia is prevailing in this patient?

- A\* Circulatory**
- B. Haemic
- C. Tissue
- D. Respiratory
- E. Substrate

20. A patient suffering from the essential hypertension presents with an increase in the arterial pressure up to 180/110 mm Hg; dyspnea, cyanosis, tachycardia; heart borders are dilated to the left, in lungs moist rales are present. What signs of urgent compensation for cardiac failure are observed?

- A\* Tachycardia**
- B. Arterial pressure rise
- C. Cyanosis
- D. Dyspnea
- E. Myogenic dilatation

21. A patient has been suffering from diabetes mellitus for 10 years. He was delivered to a hospital in grave condition. On the 2nd day of treatment his condition grew significantly worse: he lapsed into a coma, there appeared noisy deep breathing. Deep inspirations took turns with forced expirations with assistance of expiratory muscles. What form of respiration disorder is it?

- A\* Kussmaul's respiration**
- B. Stenotic respiration
- C. Tachypnea
- D. Cheyne-Stokes respiration
- E. Biot's respiration

22. After taking phenacetin a patient complained about sore throat and impossibility of deglutition. An otolaryngologist made a diagnosis of necrotic angina. In blood: Hb- 130 g/l, erythrocytes -  $4,5 \cdot 10^{12}/l$ , leukocytes -  $3,0 \cdot 10^9/l$ , among them lymphocytes - 75%, neutrophils - 10%, eosinophils - 5%, monocytes - 10%. What type of white blood cell disorder is it?

- A\* Neutropenia**
- B. Neutrophilia
- C. Monocytosis
- D. Eosinophilia
- E. Lymphopenia

23. 3 years ago a patient was diagnosed with chronic glomerulonephritis. The patient has got multiple edemata within the last 6 months. What is the cause of their development?

- A\* Proteinuria**
- B. Hyperaldosteronism
- C. Injection of non-steroidal antiinflammatory preparations
- D. Glucocorticoid treatment
- E. Vasopressin hyperproduction

# TEST 2008

1. A female patient suffers from chronic glomerulonephritis. Urine analysis revealed proteinuria, hematuria, leukocyturia. Proteinuria indicates disturbance of the following process in kidneys:

**A\* Glomerular filtration**

- B. Tubular secretion
- C. Tubular reabsorption
- D. Tubular secretion and reabsorption
- E. Renal blood flow

2. A child with evident hypotrophy got edemata on his lower extremities, ascites. What is the main mechanism of pathogenesis of cachectic edema?

**A\* Drop of oncotic pressure of blood plasma**

- B. Rise of hydrostatic blood pressure
- C. Rise of oncotic pressure of intercellular fluid
- D. Increased permeability of vascular wall
- E. Disturbance of lymph outflow

3. During an exam a student got high arterial pressure and palpitation. What is the probable cause of this phenomenon?

**A\* Increased tonus of sympathetic nervous system**

- B. Low excitability threshold of  $\alpha$  and  $\beta$  adrenoreceptors
- C. Increased volume of circulating blood
- D. Decreased tonus of parasympathetic nervous system
- E. Secretion of glucocorticoids

4. A 40 year old woman has been suffering from profuse uterine bleedings for a long time. Blood count: Hb- 90 g/l, erythrocytes -  $3,9 \cdot 10^{12}/l$ , colour index - 0,6. What is the main cause of hypochromic anemia?

**A\* Iron loss with blood**

- B. Increased consumption of iron
- C. Nonassimilability of iron
- D. Deficiency of vitamin B<sub>12</sub>
- E. Insufficient iron content in food ration

5. A patient suffering from gastric ulcer for a long time has dramatic emaciation, skin pallor, appetite loss, aversion to meat products. Biopsy of mucous membrane of stomach revealed cellular atypia. What pathology are these symptoms typical for?

**A\* Malignant tumour of stomach**

- B. Benign tumour of stomach
- C. Polyposis
- D. Hypertrophic gastritis
- E. Helminthic invasion

6. A patient had cerebral haemorrhage that made impossible active motions of left arm and leg. Muscle tone of these limbs is increased, their spinal reflexes are intensified, reflex zones are increased. What type of CNS disorder is it?

**A\* Central paralysis**

- B. Peripheral paralysis
- C. Spinal shock
- D. Atonic paralysis
- E. Reflex paralysis

7. As a result of reduced water reabsorption in nephron tubules daily diuresis of a patient has increased up to 10 litres. This might be caused by reduced secretion of the following hormone:

**A\* Vasopressin**

- B. Aldosterone
- C. Parathormone
- D. Thyrocalcitonin
- E. Insulin

8. What disorders are possible as a result of thyroid insufficiency during infancy? **A\* Cretinism**

- B. Nanism
- C. Gigantism
- D. Basedow's disease
- E. Itsenko-Cushing syndrome

9. A patient suffers from jaundice. Examination revealed that blood plasma had high concentration of indirect reacting (free) bilirubin, feces and urine had high concentration of stercobilin, concentration of direct reacting (conjugated) bilirubin was normal. What type of jaundice is it?

**A\* Hemolytic**

- B. Neonatal jaundice
- C. Parenchymatous
- D. Gilbert's disease
- E. Obstructive

10. Gastric juice of a patient has decreased concentration of enzymes. What secretory cells of stomach display dysfunction?

**A\* Chief cells of glands**

- B. Parietal cells of glands
- C. Gland mucocytes
- D. Cells of tegumental epithelium
- E. G-cells

11. A few minutes after repeated introduction of penicillin a patient got dyspnea, tongue numbness, hyperemia and then skin pallor. The patient also lost consciousness. What is the cause of such a grave condition?

**A\* Anaphylactic shock**

- B. Serum sickness
- C. Hemolytic anemia
- D. Acute glomerulonephritis
- E. Bronchial asthma

12. A patient has bradycardia, moderate hypotension, decrease of basal metabolism, edemata. What abnormality can induce such syndrome?

**A\* Thyroid hypofunction**

- B. Parathyroid hypofunction
- C. Thyroid hyperfunction
- D. Parathyroid hyperfunction
- E. Adrenal hypofunction

13. A patient suffering from chronic cardiac insufficiency has got soft tissue edemata on his shins. What is the leading pathogenetic factor of edema development?

**A\* Rise of hydrostatic pressure in capillaries**

- B. Drop of osmotic pressure in blood plasma
- C. Rise of oncotic pressure in tissues
- D. Drop of hydrostatic pressure in capillaries
- E. Rise of osmotic pressure in tissues

14. A 38 year old patient had hepatitis but didn't give up alcohol. There appeared symptoms of hepatocirrhosis along with ascites and edemata of his lower limbs. What changes in blood are main factor of edemata development?

**A\* Hypoalbuminemia**

- B. Hypoglobulinemia
- C. Hypocholesterolemia
- D. Hypokalemia
- E. Hypoglycemia

15. Introduction of glucocorticoids induces strengthening of glucose concentration in blood. Which of the following processes will be activated in liver?

**A\* Gluconeogenesis**

- B. Glycogenolysis
- C. Oxidation of fatty acids
- D. Ketogenesis
- E. Glycolysis

16. What form of hypoxia develops during shock and collapse?

**A\* Circulatory**

- B. Respiratory
- C. Hypoxic
- D. Hemic
- E. Tissue

17. A 56 year old patient complains about limitation of movements and pain in hand joints, mainly at night. Objectively: there is a disfiguring painful swelling of affected joints. Blood and urine have high concentration of uric acid. What disease has developed?

**A\* Gout**

- B. Pellagra
- C. Phenylketonuria
- D. Alkaptonuria
- E. Tyrosinosis

18. A patient 42 year old suffering from chronic calculous cholecystitis complains about acute pain in the right subcostal area, itching and skin icteritiousness, multiple petechial haemorrhages, saponified and lightcoloured feces (steatorrhea). What type of icterus is it?

**A\* Mechanic**

- B. Hemolytic
- C. Parenchymatous
- D. Cythemolytic
- E. Hepatocellular

19. Patient's joints are enlarged, look like thickened disfigured knots. Blood analysis revealed high concentration of uric acid and its salts. This state is caused by metabolic disorder of the following substances:

**A\* Purines**

- B. Pyrimidines
- C. Porphyrines
- D. Cholesterol
- E. Phospholipids

20. A boy is 4 year old. Glucose concentration in blood plasma is 12 millimole/l. This might be caused by deficiency of the following hormone:

**A\* Insulin**

- B. Glucagon
- C. Cortisol
- D. Somatotropin
- E. Adrenocorticotropin

21. A 40 year old patient complains about general weakness, headache, body temperature rise, cough with sputum, dyspnea. After examination his illness was diagnosed as focal pneumonia. What type of hypoxia is observed?

**A\* Respiratory**

- B. Circulatory
- C. Hemic
- D. Tissue
- E. Hypoxic

22. A 58 year old patient complained about persistent rise of arterial pressure. Clinical examination revealed chronic renal disease accompanied by disturbance of renal blood flow. Rise of arterial pressure was induced by activation of the following regulatory system:

**A\* Renin-angiotensin**

- B. Parasympathetic nervous
- C. Sympathetic nervous
- D. Sympathoadrenal
- E. Hypothalamo-pituitary-adrenal

23. A child got burn on his hand caused by hot water. Burn skin is bright red. What disturbance of local blood circulation is it?

**A\* Arterial hyperemia**

- B. Venous hyperemia
- C. Stasis
- D. Thrombosis
- E. Embolism

24. A patient has obstructive respiratory failure. Name a disease that is usually accompanied by such type of respiratory failure:

**A\* Bronchial asthma**

- B. Pneumonia
- C. Exudative pleuritis
- D. Pneumoconiosis
- E. Pneumothorax

25. A patient is 54 year old. After intense emotional stress he felt strong pain behind his breastbone irradiating to his left arm and left part of his neck. He felt also death anxiety and broke into a cold sweat. Nitroglycerine relieved pain. Name a disturbance of local blood circulation in heart that has developed in this case:

**A\* Ischemia**

- B. Thrombosis
- C. Embolism
- D. Arterial hyperemia
- E. Venous hyperemia

26. A male patient has pain in the right subcostal area, acholic feces. Decolouration of feces is caused by deficiency of:

- A\* Stercobilin**
- B. Hemoglobin
- C. Bilirubin
- D. Bile acids
- E. Skatole

27. During blowing up a balloon a boy took maximally deep and prolonged inspirations and expirations. Thereafter he felt slight dizziness. What is the probable cause of this phenomenon?

- A\* Drop of pCO<sub>2</sub> in blood**
- B. Rise of pCO<sub>2</sub> in blood
- C. Bronchi constriction
- D. Arterial pressure rise
- E. Drop of pO<sub>2</sub> in blood

28. A patient has been suffering from diabetes mellitus for 10 years. He was delivered to a hospital in grave condition. On the 2nd day of treatment his condition grew significantly worse: he lapsed into a coma, there appeared noisy deep breathing. Deep inspirations took turns with forced expirations with assistance of expiratory muscles. What form of respiration disorder is it?

- A\* Kussmaul's respiration**
- B. Stenotic respiration
- C. Tachypnea
- D. Cheyne-Stokes respiration
- E. Biot's respiration

29. A child has got a burn. Burnt skin is hyperemic, there are small vesicles full of transparent fluid. What type of fluid is it?

- A\* Serous exudate**
- B. Hemorrhagic exudate
- C. Purulent exudate
- D. Transsudate
- E. Putrid exudate

30. A man has symptoms of cardiovascular atherosclerosis. The most probable characteristic of this state will be growth of the following biochemical value:

- A\* Concentration of low-density lipoproteins**
- B. Concentration of high-density lipoproteins
- C. Concentration of chylomicrons
- D. LDH<sub>5</sub> activity
- E. Activity of pancreatic lipase

# TEST 2007

1. A 56 y.o. patient complains of periodical pain attacks in the heart area irradiating to his left arm, sometimes to the left scapula. These pain attacks can be relieved by nitroglycerine. What heart pathology can be suspected?

**A\* Stenocardia**

- B. Myocardium infarction
- C. Myocarditis
- D. Endocarditis
- E. Pericarditis

2. A 54 y.o. patient with stomach ulcer complains about great weakness, dyspnea caused by the slightest physical exercise. Blood count: erythrocytes -  $1,44 \cdot 10^{12}/l$ , Hb- 66 g/l, colour index - 1,4. What anemia are these changes of peripheral blood count typical for?

**A\* B<sub>12</sub>-deficiency**

- B. Iron-deficiency
- C. Acute posthemorrhagic
- D. Acquired hemolytic
- E. Chronic posthemorrhagic

3. What intracardiac compensation mechanism is actuated under conditions of cardiac insufficiency and causes blood volume overload?

**A\* Heterometric**

- B. Tachycardia
- C. Homeometric
- D. Myocardium hypertrophy
- E. Increase of respiratory rate

4. A patient was diagnosed with anacydic gastritis. What enzyme activity will be reduced?

**A\* Pepsin**

- B. Amylase
- C. Lipase
- D. Chemotrypsin
- E. Trypsin

5. A child with evident hypotrophy has edemata of lower extremities, ascites. What is the main factor of pathogenesis of cachectic edema?

**A\* Drop of oncotic pressure of blood plasm**

- B. Rise of hydrostatic blood pressure
- C. Rise of oncotic pressure of intercellular liquid
- D. Increased permeability of vascular wall
- E. Disorder of lymph outflow

6. What disease of blood coagulation system is based upon abrupt deceleration of blood coagulation due to disturbed formation of plasma thromboplastin (VIII factor deficit)?

**A\* Hemophilia**

- B. Thrombocytopenic purpura
- C. Hemorrhagic vasculitis
- D. Symptomatic thrombocytopenia
- E. Hemorrhagic purpura

7. In order to estimate antibiotic susceptibility of a patient doctors introduced him intracutaneously 0,2 ml of penicilline solution. Ten minutes after introduction there appeared hyperemy and edema. What type does this reaction relate to (according to Coomb's and Gell's classification)?

**A\* Anaphylactic reaction**

- B. Cytotoxic reaction
- C. Reaction of Arthus phenomenon type
- D. Delayed-type hypersensitivity
- E. Tuberculine reaction

8. During an exam arterial pressure of a student rose and his heartbeat accelerated. Name the probable cause of this phenomenon:

**A\* Increase of tonus of sympathetic nervous system**

- B. Extension of excitability threshold  $\alpha$  and  $\beta$  adrenoreceptors
- C. Increase of circulating blood volume
- D. Decrease of tonus of parasympathetic nervous system
- E. Excretion of glucocorticoids

9. What classification criterion incorporates the following types of anemias: posthemorrhagic, hemolytic and anemia induced by disturbed hematogenesis?

**A\* Pathogenesis**

- B. Etiology
- C. Hematogenesis type
- D. Bone marrow regenerability
- E. Colour index

10. Analysis of urine composition revealed changed concentration of sodium ions. Which of hormones provides regulation of sodium ions reabsorption in nephron canaliculi?

**A\* Aldosterone**

- B. Vasopressin
- C. Somatostatin
- D. Adrenaline
- E. Parathormone

11. What form of hypoxia can result from shock and collapse?

**A\* Circulatory**

- B. Respiratory
- C. Hypoxic
- D. Hemic
- E. Histic

12. First leukocytes that appear in the inflammation focus are:

**A\* Neutrophils**

- B. Monocytes
- C. Eosinophils
- D. Lymphocytes
- E. Basophils

13. A patient ill with pheochromocytoma has high secretion of the following hormone:

**A\* Adrenaline**

- B. Glucagon
- C. Insulin

- D. Thyroxin
- E. Somatotropin

14. A patient with chronic calculous cholecystitis complains of acute pains in the right subcostal area, itch and icteritiousness of skin, multiple punctuate hemorrhages, saponated and discoloured feces (steatorrhea). What type of jaundice is it?

- A\* Mechanic**
- B. Hemolytic
- C. Parenchymatous
- D. Hepatic
- E. –

15. Blood analysis of a patient revealed high content of the following enzymes: creatine kinase (MB-isoform), aspartate aminotransferase and LDH 1,2. What pathology should be suspected in this case?

- A\* Myocardium infarction**
- B. Muscular dystrophy
- C. Liver cirrhosis
- D. CNS affection
- E. Pancreatitis

16. What pathology of tissue growth is characterized by cellular and tissue atypia from the point of histomorphology?

- A\* Malignant tumour**
- B. Dystrophy
- C. Degeneration
- D. Benign tumour
- E. Regeneration

17. Examination of a patient revealed neutrophilic leukocytosis with shift of leukogram to the right. It is typical for:

- A\* Acute inflammatory process**
- B. Chronic inflammatory process
- C. Autoimmune process
- D. Allergy
- E. Rheumatism

18. Preventive examination of a woman revealed enlargement of her thyroid gland, exophthalmos, high body temperature, increase of heart rate up to 110 times per minute. It is advisable to determine content of the following hormone in blood:

- A\* Thyroxine**
- B. Noradrenaline
- C. Adrenaline
- D. Insulin
- E. Cortisol

19. A patient was diagnosed with right lung cancer and doctors administered him surgical treatment. After right-sided pneumonectomy the patient began to suffer from evident dyspnea. What form of respiratory failure is it?

- A\* Pulmonary restrictive**
- B. Central
- C. Peripheral

- D. Pulmonary obstructive
- E. Thoracodiaphragmal

20. Roentgenological examination of a patient revealed delayed transition of contrast material from the stomach to the duodenum. It is caused by disturbance of the following function of digestive tract:

**A\* Evacuatory function of stomach**

- B. Secretory function
- C. Membrane digestion
- D. Water absorption
- E. Protein digestion

21. A patient complains of belting pain in epigastrium. Examination revealed high diastase content in urine, as well as undigested fat in feces. What pathology are these occurrences typical for?

**A\* Acute pancreatitis**

- B. Gastritis
- C. Infectious hepatitis
- D. Acute appendicitis
- E. Enterocolitis

22. Examination of a patient revealed symptoms of myocardial insufficiency. What is the possible cause of cardiac insufficiency of myocardial type?

**A\* Infectious myocarditis**

- B. Aorta coarctation
- C. Pulmonary emphysema
- D. Mitral stenosis
- E. Essential hypertension

23. A patient has been suffering from diabetes mellitus for 10 years. He was delivered to the hospital in grave condition. On the 2nd day of staying at the hospital his condition has become abruptly worse: he lapsed into a coma, there appeared noisy deep breathing when deep inspirations took turns with forced expirations with participation of expiratory muscles. What form of respiratory impairment is it?

**A\* Kussmaul's respiration**

- B. Stenotic respiration
- C. Tachypnea
- D. Cheyne-Stokes respiration
- E. Biot's respiration

24. 3 years ago a patient was diagnosed with chronic glomerulonephritis. Within last 6 months there have been appearing edemata. What underlies their development?

**A\* Proteinuria**

- B. Hyperaldosteronism
- C. Introduction of nonsteroid antiinflammatory medications
- D. Treatment with glucocorticoids
- E. Vasopressin hyperproduction

25. A patient had an attack of calculous cholecystitis that was accompanied by saponated feces, steatorrhea. These changes are the evidence of disturbance of the following stage of lipometabolism:

**A\* Digestion and absorption**

- B. Transport
- C. Intermediary metabolism
- D. Adipose tissue exchange
- E. Depositing