

?

Golgi complex export substances from a cell due to the fusion of the membrane saccule with the cell membrane. The saccule contents flows out. What process is it?

+Exocytosis.

-Endocytosis.

-Active transport.

-Facilitated diffusion.

-All answers are false.

?

Life cycle of a cell includes the process of DNA autoreplication. As a result of it monochromatid chromosomes turn into bichromatid ones. What period of cell cycle does this phenomenon fall into?

+S.

-M.

-G0.

-G2.

-G1.

?

During the postsynthetic period of mitotic cycle the synthesis of proteins – tubulines, which take part in the mitosis formation, was destroyed. It can cause the impairment of:

+Chromosome despiralization.

-Chromosome spiralization.

-Duration of mitosis.

-Chromosome separation.

-Cytokinesis.

?

The study of mitotic cycle phases of onion root revealed the cell, in which the chromosomes are situated in the equatorial plane, forming a star. What of the cell mitosis is it?

+Metaphase.

-Anaphase.

-Prophase.

-Telophase.

-Interfase.

?

Low level of albumins and fibrinogen was detected in the patient's blood. Decreased activity of what organelle of the liver hepatocytes can cause it?

+Granular endoplasmatic net

-Mitochondrions

-Golgi complex

-Agranular endoplasmatic net

-Lysosomes

?

The cell of the laboratory animal was overdoses with Roentger rays. As a result albuminous fragments formed in the cytoplasm. What cell organoid will take part at their utilization?

+Lysosomes

-Endoplasmic reticulum

-Ribosome

-Golgi complex

-Cells centre

?

A tissue sample of benign tumor was studied under the electron microscope. A lot of small (15-20 nm) spherical bodies, consisting of 2 unequal subunits were detected These are:

+Microtubules

-Golgi complex

-Mitochondria

-Ribisomes

-Smooth endoplasmic reticulum

?

Oval and round organelles with double was are seen at the electron micrograph. The outer membrane is smooth , the inner membrane folded into cristae contein enzyme ATPase synthetase. These are:

+Mitochondria

-Ribosomes

-Centrioles

-Golgi complex

-Lysosomes

?

While studying maximally spiralized chromosomes of human karyotype the process of cell division was stopped in the following phase:

+Prophase.

-Telophase.

-Interphase.

-Metaphase.

-Anaphase.

?

Moving of the daughter chromatids to the poles of the cell is observed in the mitotically dividing cell. On what stage of the mitotic cycle is this cell?

+Anaphase.

-Metaphase.

-Prophase.

-Telophase.

-Interfase.

?

In course of practical training students studied a stained blood smear of a mouse with bacteria phagocytied by leukocytes. What cell organelle completes digestion of these bacteria?

+Lysosomes.

-Granular endoplasmic reticulum.

-Ribosomes.

-Mitochondrions.

-Golgi apparatus.

?

Labeled aminoacid alanine and tryptophane were introduced to a mouse in order to study localization of protein biosynthesis in its cells. Around what organelles will the accumulation of labeled aminoacids be observed?

+Ribosomes.

-Cell center.

-Lysosomes.

-Golgi apparatus.

-Agranular endoplasmic reticulum.

?

Ultramicroscopical examination of "dark" hepatocyte population in the cell cytoplasm detected a developed granular endoplasmic reticulum. What function has this organelle in these cells?

+Synthesis of blood plasma proteins.

-Calcium ion depositing.

-Deintoxicative function.

-Carbohydrate synthesis.

-Bile production.

?

Hypertrichosis of auricles is caused by a gene that is localized in Y-chromosome. Father has this feature. What is the probability to give birth to a boy with such anomaly?

+100%.

-0%.

-25%.

-35%.

-75%.

?

Normal, actively dividing cells of human red bone marrow are analyzed. What number of cells' chromosomes is typical for G1 period?

+46.

-48.

-23.

-45.

-47.

?

While examining the amniotic fluid collected with the help of amniocentesis (puncture of amniotic membrane) cells with sex chromatin containing nuclei (Barr's bodies) were detected. What does this fact indicate?

+Development of a female fetus.

-Development of a male fetus.

-Genetic disorders in embryonic development.

-Trisomy.

-Polyploidy.

?

In a cell the synthesis of histone proteins was artificially blocked. What cell structure will be damaged?

+Nuclear chromatin.

-Nucleolus.

-Golgi apparatus.

-Cell membrane.

-Nuclear envelope.

?

A chemical agent influenced cell plasmolemma. Consequently, the cell changed its form. Which layer of plasmolemma takes part in this process?

+Cortical.

-Glycocalyx.

-Bilipidic.

-Hydrophilic.

-Hydrophobic.

?

In a histological specimen is observed a human somatic cell in the metaphase of mitotic cell division. How many chromosomes form the metaphase plate, taking into account that every chromosome contains two sisterly chromatids?

+46.

-92.

-23.

-48.

-24.

?

A patient with poisoning has been hospitalized. It is detected that hepatic detoxification mechanisms are disordered. Which hepatocytes organelles has primarily caused the process?

+Smooth endoplasmic reticulum.

-Mitochondria.

-Rough endoplasmic reticulum.

-Golgi apparatus.

-Ribosomes.

?

Cytochemical investigation has shown high concentration of hydrolytic ferments in the cytoplasm of cells. The activity of which organelles does this fact indicate?

+Lysosome.

-Mitochondria.

-Polysomes.

-Endoplasmic reticulum.

-Centrosome.

?

There is a large quantity of carbohydrates in the dietary intake of a human. What structures will be seen in the cytoplasm of hepatocytes?

+Glycogen granules.

-Fat drops.

-One large fat drop.

-Increase of free ribosomes quantity.

-Lipofuscin inclusions.

?

In the course of a scientific experiment a researcher destroyed a structure of one of cell parts, which broke cell division capacity. Which structure has been affected?

+Centrosome.

-Glycocalix.

-Golgi apparatus.

-Microfibrilles.

-Mitochondria.

?

Tumor cells culture was acted on with colchicine that blocks the synthesis of tubulin-proteins, which form spindle apparatus. What stage of cellular cycle will be affected?

+Mitosis.

-G1 phase.

-S phase.

-G2 phase.

-G0 period.

?

Prolonged influence of toxic substances on the organism led to considerable protein synthesis decrease in hepatocytes. Which organelles have suffered of intoxication most of all?

+Rough endoplasmic reticulum.

-Mitochondria.

-Microtubules.

-Lysosomes.

-Smooth endoplasmic reticulum.

?

A ribosomal structure has been affected in a cell. What processes will suffer first of all?

+Synthesis of protein.

-Synthesis of nucleic acids.

-Synthesis of carbohydrates.

-Synthesis of lipids.

-Synthesis of mineral substances.

?

An embryo displays disturbed process of dorsal mesoderm segmentation and somite formation. What part of skin will have developmental abnormalities?

+Derma.

-Epidermis.

-Sudoriferous glands.

-Hair.

-Sebaceous glands.

?

Blue asphyxia of a newborn child has been diagnosed. What vessel carrying oxygenated maternal blood to the fetus has been pinched during delivery?

+Umbilical vein.

-Umbilical artery.

-Chorionic vein.

-Chorionic artery.

-Uterine artery.

?

Two sacs contacting with each other (amniotic and yolk) can be seen in a 10-day embryo specimen. What is the structure in the place of their contact called?

+Embryonic plate.

-Bottom of the amniotic sac.

-Roof of the yolk sac.

-Amniotic crus.

-Extraembryonic mesoderm.

?

In a histological specimen is observed an extraembryonic organ that represents a bladder connected with intestinal tube. Its wall is covered with epithelium on the inside, on the outside it is formed of embryonic connective tissue. At early stages of embryogenesis it functions as a hematopoietic organ. What organ is this?

+Yolk sac.

-Allantois.



-Amnion.

-Umbilical cord.

-Uterine artery.

?

At early stages of human embryo-genesis there arises a digitiform outgrowth of the ventral wall of the primitive gut rooting itself in the amniotic crus. What is the name of this extraembryonic organ?

+Allantois.

-Yolk sac.

-Amnion.

-Placenta.

-Umbilical cord.

?

In the histological specimen of a human fetus there can be seen one of extraembryonic organs - a bladder linked with intestinal tube. In its wall there are primary germ cells and primary erythrocytes (megaloblasts). Define what this organ is.

+Yolk sac.

-Allantois.

-Placenta.

-Umbilical cord.

-Amnion.

?

A histological specimen shows a transverse section of an organ, whose basis is formed of mucous connective tissue, two arteries, and a vein. What organ is it?

+Umbilical cord.

-Allantois.

-Yolk sac.

-Amnion.

-Placenta.

?

During the third week of embryo-genesis the central part of epiblast cells (ectoderm) sags and neurulation process begins. In which direction will the remaining ectodermal cells differentiate?

+Skin.

-Gut.

-Somites.

-Chord.

-Yolk sac.

?

In the course of the experiment on a frog embryo the external embryonic layer - ectoderm - has been destroyed. Which of the following morphological structures has not developed henceforth?

+Epidermis.

-Somites.

-Nephrotome.

-Splanchnotome.

-Myotome.

?

In a histological specimen there is a hen embryo in the stage of mesoderm differentiation to somites, nephrotomes, and splanchnotome. Of which material will the axial skeleton develop?

+Sclerotome.

-Dermatome.

-Nephrotome.

-Splanchnotome.

-Myotome.

?

Zygote cell-division finishes after blastula formation. What type of blastula is specific of a human being?

+Blastocyst.

-Celoblastula.

-Discoblastula.

-Amphiblastula.

-Morula.

?

In a microscopic specimen of a human embryo, taken after involuntary miscarriage, an embryonic plate has been detected with two cellular layers: endo- and ectoderm. At what stage of embryonal development is this embryo?

+Gastrulation.

-Progenesis.

-Neurulation.

-Histogenesis.

-Organogenesis.

?

During the process of a human embryo formation one can observe the rise of a cavity, light little blastomeres at the periphery, and dark big blastomeres at one of the poles. How is the embryo called at this stage of development?

+Blastocyst.

-Morula.

-Zygote.

-Gastrula.

-Embryonic disk.

?

Gonoblasts, sex stem cells, are detected in a 2-3-week-old embryo. Where do these cells differentiate?

+In yolk sac.

-In mesenchyme.

-In embryonic ectoderm.

-In dermatome.

-In embryonic endoderm.

?

Embryonic implantation into endometrium (uterine mucosa) consists of two phases - adhesion and invasion. The first phase is accompanied by:

+Blastocyst attachment to endometrium surface.

-Destruction of endometrium connective tissue.

-Destruction of endometrium epithelial cells.

-Activation of uterine glands secretion.

-Suppression of uterine glands secretion.

?

In a specimen an ovocyte at the moment of its fertilization by spermatozoon can be seen. What is the main result of fertilization?

+Formation of zygote.

-Determining the child's sex.

-Meiosis completion with ovocyte.

-Penetration of ovolemma by spermatozoon.

-Cortical reaction.

?

An anlage of an organ performing endocrine function is formed of a trophoblast during embryogenesis. What organ is this?

+Villous chorion (fetal part of placenta).

-Amnion.

-Yolk sac.

-Allantois.

-Umbilical cord.

?

A human embryo is comprised of two blastomeres. Name its location under the condition of normal genesis.

+Uterine tube.

-Cavity of uterus.

-Abdominal cavity.

-Endometrium.

-Ovary.

?

Some microorganisms being the reason of infectious diseases can pass through the placental barrier. What structures does it consist of?

+All the components of tertiary villi.

-Chorion and amnion.

-All the components of secondary villi.

-Allantois, yolk sac.

-Basal lamina of endometrium with decidual cells.

?

A fetus umbilical cord is compressed, but blood circulation between the mother and child is preserved. What structures provided this primarily?

+Mucous connective tissue.

-Residue of allantois.

-Arteries sheath.

-Veins sheath.

-Residue of yolk pedicel.

?

"To be born with a silver spoon in one's mouth" corresponds to Russian "to be born in a shirt". What "shirt" is meant?

+Amniotic.

-Yolk.

-Serous.

-Chorionic.

-Trophoblastic.

?

Internal female genital organs were removed in the course of an operation. Microscopic examination of these organs has shown an embryo consisting of two blastomeres. Name the place of its localization in the conditions of normal development.

+Ampulla part of uterine tube.

-Uterine part of uterine tube.

-Cavity of uterus.

-Abdominal cavity.

-Ovary.

?

A scheme presents an exocrine gland that has unbranched excretory duct with a terminal part in form of a sacculle opening into the duct. How is this gland called according to the morphological classification of exocrine glands?

- +Simple unbranched alveolar.
- Compound branched alveolar.
- Simple branched tubular.
- Compound unbranched alveolar.
- Compound unbranched alveolar tubular.

?

A patient has changes of epithelium observed after prolonged inflammation of nasal cavity mucosa. What epithelium has changed?

- +Pseudostratified.
- Simple squamous.
- Stratified squamous.
- Stratified cuboidal.
- Stratified columnar.

?

Pleural friction rub of a patient with dry pleuritis is being auscultated. What epithelium is damaged?

- +Simple squamous.
- Simple cuboidal.
- Simple columnar.
- Transitional.
- Stratified.

?

A malignant epithelial tumor of the pericardium of a 53-year-old man has been diagnosed. What epithelium is a source of its development?

- +Simple squamous.
- Pseudostratified.
- Transitional.
- Stratified keratinized.

-Stratified non-keratinized.

?

Diphtheritic croup arises in consequence of thickening on true vocal folds of fibrin films closely connected with epithelium. With what epithelium is vocal folds mucosa lined?

+Stratified squamous non-keratinized.

-Stratified squamous keratinized.

-Pseudostratified columnar ciliated.

-Simple squamous.

-Simple cuboidal.

?

Experimentally the structures of tight contact between epithelial cells have been disturbed. What function of epithelium will be damaged?

+Mechanical.

-Suction.

-Vitamin D producing.

-Secretory.

-Excretory.

?

In course of a conditional experiment the development of mesenchyma cells was completely inhibited. Development of the following muscular tissue will be disturbed:

+Smooth muscular tissue.

-Neural muscular tissue.

-Epidermal muscular tissue.

-Skeletal muscular tissue.

-Cardiac muscular tissue.

?

A microspecimen of the submandibular salivary gland shows some basket-shaped cells concentrated around the acines and excretory ducts. These cells surround bases of the serous cells and are called myoepitheliocytes. These cells relate to the following tissue:

+Muscular tissue.

-Neural tissue.

-Epithelial tissue.

-Loose fibrous connective tissue.

-Special connective tissue.

?

The main structural unit of the tissue on histological specimen is fibers consisting of simplast and satellitocytes covered with common basic membrane. Which tissue is this structure characteristic of?

+Skeletal striated muscle tissue.

-Smooth muscle tissue.

-Cardiac muscle tissue.

-Loose connective tissue.

-Reticular connective tissue.

?

In a figure a structural unit of striated muscles myofibrils - sarcomere, which is placed between two neighboring Z lines, is schematically represented. How will the H-zone of the sarcomere change at maximum reduction?

+Disappears.

-Does not change.

-Increases by 2 times.

-Decreases by 2 times.

-Takes up all sarcomere.

?

Patient with injured muscles of the lower extremities was admitted to the traumatological department. Due to what cells is reparative regeneration of the muscle fibers and restoration of the muscle function possible?

+Satellite-cells.

-Myoblasts.

-Myoepithelial cells.

-Fibroblasts.

-Myofibroblasts.

?



Destruction of thin myofilaments is observed during the research of a striated muscle fiber after the action of hydrolytic ferments. Which structures have been damaged?

+Actin myofilaments.

-Tonofibrils.

-T-systems.

-Sarcoplasmic reticulum.

-Myosin myofilaments.

?

Following exposure to radiation a lot of mutant cells appeared in a patient. Some time later most of them were detected and destroyed by the following cells of the immune system:

+T-lymphocytes-killers.

-B-lymphocyte.

-Plasmoblast.

-Stem cells.

-T-lymphocytes-supressors.

?

A 70-year-old patient suffers from atherosclerosis complicated by the lower limb thrombosis that has caused gangrene on his left toes. What is the most likely cause of the thrombosis origin?

+Thrombocyte adhesion.

-Transformation of prothrombin into thrombin.

-Impaired heparin synthesis.

-Transformation of fibrinogen into fibrin.

-Prothrombinase activation.

?

A tooth extraction in a patient with chronic persistent hepatitis was complicated with prolonged hemorrhage. What is the reason for the haemorrhagic syndrome?

+Decrease in thrombin production.

-Fibrinolysis intensification.

-Increase in thromboplastin production.

-Increase in fibrinogen synthesis.

-Decrease in fibrin production.

?

Blood sampling for bulk analysis is recommended to be performed on an empty stomach and in the morning. What changes in blood composition can occur if to perform blood sampling after food intake?

+Increased contents of leukocytes.

-Increased contents of erythrocytes.

-Increased plasma proteins.

-Reduced contents of thrombocytes.

-Reduced contents of erythrocytes.

?

Examination of a 43 y.o. anephric patient revealed anemia symptoms. What is the cause of these symptoms?

+Reduced synthesis of erythropoietins.

-Folic acid deficit.

-Vitamin B12 deficit.

-Iron deficit.

-Enhanced destruction of erythrocytes.

?

Anemia of a 50-year-old patient with chronic nephritis has developed. What is the main reason for this?

+Reduction of erythropoietin production.

-Absence of the gland.

-Absence of vitamin B12.

-Disorder of porphyrin synthesis.

-Immunologic damage of immature cells of erythropoiesis.

?

In the red bone marrow during postembryonal hemopoiesis in the cells of a diferon cytoplasmic basophilia gradually decreases, oxyphilia increases, nucleus is pushed out. What type of hemopoiesis has these morphologic changes?

+Erythropoiesis.

-Lymphopoiesis.

-Neutrophilopoiesis.

-Eosinophilopoiesis.

-Basophilopoiesis.

?

Hemoglobin quantity has decreased in blood. Which function of blood is disordered in this case?

+Gases transport.

-Hormones transport.

-Providing immunity.

-Coagulation.

-Nutritive materials transport.

?

Clinical blood analysis of a patient with pneumonia has shown the increase of the leukocytes total amount. How is this phenomenon called?

+Leukocytosis.

-Anemia.

-Leukopenia.

-D. Anisocytosis.

-Poikilocytosis.

?

20% of spherical, flat, plane, and branched erythrocytes have been detected in the blood of a 26-year-old man. The other erythrocytes are of biconcave discoid shape. How is such phenomenon called?

+Physiological poikilocytosis.

-Pathological poikilocytosis.

-Physiological anisocytosis.

-Pathological anisocytosis.

-Erythrocytosis.

?

In blood of a patient there were discovered 14.5% of erythrocytes of more than 8 micrometers in diameter, 15.5% of erythrocytes up to 6 micrometers, the other - 7.1-7.9 micrometers in diameter. How is this phenomenon called?

+Anisocytosis.

-Erythropenia.

-Physiological poikilocytosis.

-Pathological poikilocytosis.

-Erythrocytosis.

?

Megalocytes may appear in human peripheral blood. When is their quantity in blood normal?

+During embryonic period.

-Up to 1 year old.

-From 1 year to 30 years.

-During elderly period.

-During pregnancy.

?

A large cell with low-basophilic cytoplasm and bean-like nucleus is observed in a peripheral blood smear. The cell is the largest among other ones in this specimen. What is this cell?

+Monocyte.

-Macrophage.

-Plasma cell.

-Middle lymphocyte.

-Small lymphocyte.

?

20% of large (20 micrometers in diameter) spherical cells with low-ba-sophilic cytoplasm and bean-like nucleus are observed in a Romanovsky's blood stain. Clinically this phenomenon is characterized as:

+Monocytosis.

-Lymphocytosis.

-Leukopenia.

-Neutrophilocytosis.

-Reticulocytosis.

?

In a peripheral blood smear some round cells with segmented nuclei prevail among leukocytes. Minute granularity in their cytoplasm is dyed both with acid and basic coloring agents. How are these cells called?

+Segmentonuclear neutrophils.

-Basophils.

-Eosinophils.

-Young neutrophils.

-Monocytes.

?

A patient, a nurse by profession, complains of increasing hands' skin itching and appearance of vesicles filled with liquid after a watch in hospital, namely after injecting streptomycin to patients. During the leave disease signs disappear. The increased quantity of which cells can be detected by means of blood analysis?

+Eosinophilic leukocytes.

-Basophilic leukocytes.

-Monocytes.

-Neutrophilic leukocytes.

-Lymphocytes.

?

Helminthic invasion of a 6-year-old child is diagnosed. What changes of the leukocytic formula should be expected?

+Increase of eosinophils quantity.

-Increase of neutrophiles quantity.

-Decrease of eosinophils quantity.

-Increase of monocytes quantity.

-Increase of lymphocytes quantity.

?

10% of spherical cells of 4,5-7 micrometers size with large spherical nuclei and basophile colored cytoplasm in the form of a narrow thin edge around the nucleus have been detected in the blood smear of a patient who had had flu. What condition of blood do the cells characterize?

+Lymphocytopenia.

-Thrombopenia.

-Leukopenia.

-Lymphocytosis.

-Monocytopenia.

?

During an experiment one of blood cell populations was selectively stimulated. As a result, vascular permeability considerably increased, which caused perivascular tissue edema and blood coagulation slowing-down. Which cells were stimulated?

+Basophils.

-Erythrocytes.

-Thrombocytes.

-Eosinophils.

-Lymphocytes.

?

Research of a blood smear of a patient has shown cells which make 0.5 % of the leukocytes total number, have S-shaped nuclei and metachromatically colored granules in cytoplasm. Name these cells.

+Basophils.

-Neutrophils.

-Eosinophils.

-Monocytes.

-Lymphocytes.

?

A child has signs of inflammation around a scratch on the skin: pain, reddening, edema - as a manifestation of immediate hypersensitivity reaction. What blood cells predetermine these changes?

+Basophiles.

-Eosinophils.

-Neutrophiles.

-Lymphocytes.

-Monocytes.

?

By the results of the analysis of blood spots in the site of a crime a medical expert has detected that it was woman's blood. By what signs is it established?

+Satellites of nuclei in neutrophils.

-Microcytes and macrocytes.

-Poikilocytosis.

-Specific granules in eosinophils.

-Erythrocytes quantity.

?

After conducting analysis a laboratory doctor came to an additional conclusion that the blood belongs to a woman. Features of what blood elements ground such conclusion?

+Neutrophilic leukocytes.

-Erythrocytes.

-Lymphocytes.

-Monocytes.

-Basophilic leukocytes.

?

The research of a specimen of connective tissue has detected neutrophils. How do these cells function penetrating from blood into tissues?

+Phagocytosis of microorganisms.

-Trophic.

-Of support.

-Regulate contraction of smooth myocytes.

-Dilate blood vessels.

?

Punctate hemorrhage was found out in the patient after application of a tourniquet. With dysfunction of what blood cells is it connected?

+Platelets

-Monocytes

-Lymphocytes

-Neutrophils

-Eosinophils

?

Live vaccine is injected into the human body. Increasing activity of what cells of connective tissue can be expected?

+Plasmocytes and lymphocytes.

-Macrophages and fibroblasts.

-Pigmentocytes and pericytes.

-Adipocytes and adventitious cells.

-Fibroblasts and labrocytes.

?

In a histological specimen of loose connective tissue there have been found relatively large cells filled with basophilic metachromatic granulosity. Histochemically it is established that the granules contain heparin and histamine. What are these cells?

+Mast cells.

-Fibroblasts.

-Macrophages.

-Plasmocytes.

-Adipocytes.

?

In course of an experiment a big number of stem cells of red bone marrow was in some way destructed. Regeneration of which cell populations in the loose connective tissue will be inhibited?

+Of macrophags.

-Of pigment cells.

-Of pericytes.

-Of fibroblast.

-Of lipocytes.

?

A patient's blood stem cells were destructed after radiation exposure. Regeneration of what loose connective tissue cells will be affected?

+Macrophages.

-Pigment cells.

-Adipocytes.

-Pericytes.



-Fibroblasts.

?

The microscopic examination of wound lavage of a patient with acute woundy process of his shin revealed big contents of irregular extended-formed cells, with tough nucleus, the basophilic cytoplasm of which includes many lysosomes, phagosomes and pinocytotic bubbles. What cells are found out in the wound?

+Connective tissue macrophages.

-Fibroblasts.

-Plasmocytes.

-Tissue basophils.

-Fibrocytes.

?

After myocardial infarction a patient's morphological heart wall integrity was regenerated. Owing to what tissues did the regeneration take place?

+Connective.

-Smooth muscle.

-Striated muscle.

-Epithelial.

-Nerve.

?

Histamine has a leading role in the development of the clinical presentations of allergy. Which cells produce histamine?

+Mast cells.

-T-lymphocytes.

-Macrophages.

-B-lymphocytes.

-Plasma cells.

?

A sportsman's leg has been injured during training. A traumatologist has diagnosed tendon rupture. What type of connective tissue forms this organ?

+Dense regular connective.

-Dense irregular connective.

-Loose connective.

-Reticular.

-Cartilaginous.

?

With age human skin undergoes changes, which may declare themselves by reduction of skin elasticity. What structures of connective tissue provide skin elasticity most of all?

+Collagen and elastic fibers.

-Ground substance.

-Cells of epidermis.

-Connective tissue cells.

-Reticular fibers.

?

During electromicroscopic examination of a hyaline cartilage cells with well-developed granular endoplasmic reticulum and Golgi apparatus are detected. What function is carried out by these cells?

+Formation of intercellular substance.

-Depositing of glycogen.

-Trophicity of cartilaginous tissue.

-Deposition of fat.

-Destruction of cartilage intercellular substance.

?

The decrease of blood supply of an organ predetermines hypoxia development that activates fibroblasts function. Volume of which elements is increased in this situation?

+Intercellular substance.

-Microcirculatory vessels.

-Nerve elements.

-Parenchymatous elements of the organ.

-Lymphatic vessels.

?

One of the rules of surgery is performing sections along the so-called lines of Langer (lines of skin tension). What tissue forms the reticular (the strongest) layer of derma?

+Dense irregular connective tissue.

-Reticular connective tissue.

-Loose connective tissue.

-Epithelial tissue.

-Dense regular connective tissue.

?

Isogenic groups of cells are being detected in a histological specimen of cartilaginous tissue. Which cells are initial in the organization of these groups?

+Chondrocytes of the I type.

-Chondroblasts.

-Prechondroblasts.

-Chondrocytes of the II type.

-Chondrocytes of the III type.

?

Articular cartilages are known not to have perichondrium. What growth of these cartilages is observed during regeneration?

+Interstitial.

-Appositional.

-By imposition.

-Appositional and interstitial.

-Does not regenerate.

?

A patient has excessive resorption of bones detected. With the increased activity of what osteal tissue cells is it connected?

+Osteoclasts.

-Osteoblasts and osteoclasts.

-Osteocytes and osteoblasts.

-Osteoblasts.

-Osteocytes.

?

In course of indirect histogenesis of tubular bone tissue a plate is formed between epiphyseal and diaphyseal ossification centres that provides further lengthwise growth of bones. What structure is it?

+Metaphyseal plate.

-Osseous plate.

-Osseous cuff.

-Osteon.

-Layer of interior general plates.

?

During a conditional experiment the action of a toxic substance enhances the mechanism of nerve impulse transfer. What structure provides this function?

+Synapse.

-Neurolemma.

-Neurofibril.

-Mitochondrion.

-Nissl's substance.

?

A traumatic injury of nerve fibers is accompanied by axons damage, lysis of myelin. What nerve structures take part in myelin reconstruction during regeneration?

+Neurolemmocytes.

-Ependimocytes.

-Perineurium.

-Endoneurium.

-Astrocytes.

?

A sensitive neural ganglion consists of roundish neurocytes with one extension that divides into axon and dendrite at some distance from the perikaryon. What are these cells called?

+Pseudounipolar.

-Apolar.

-Bipolar.

-Multipolar.

-Unipolar.

?

An infectious disease caused contractive activity of muscles that contract and dilate eye pupil (paralytic state). What functional eye system was damaged?

+Accommodative.

-Dioptric.

-Ancillary.

-Photosensory.

-Lacrimal apparatus.

?

Vitamin A deficit results in the impairment of twilight vision. Name the cells that have the above-mentioned photoreceptor function:

+Rod receptor cell.

-Horizontal neurocytes.

-Cone receptor cells.

-Bipolar neurons.

-Ganglion neurocytes.

?

Damages of vascular membrane are detected in the histological specimen of a fetus' eyeball. What embryonic material was probably damaged during the development of the eye?

+Mesenchyme.

-Ectoderm.

-Entoderm.

-Outer layer of the eyeball.

-Internal layer of the eyeball.

?

Underdeveloped epithelium of cornea is observed in the histological specimen of a fetus' eyeball. A part of what embryonal layer was probably affected in the process of embryogenesis?

+Ectoderm.

-Entoderm.

-Mesoderm.

-Outer layer of the eyeball.

-Internal layer of the eyeball.

?

As a result of the laser correction of vision stratified squamous epithelium of cornea decays on the incision line. What cells provide the regeneration of this epithelium?

+Basal epithelial cells.

-Spinous epithelial cells.

-Fibroblasts.

-Fibrocytes.

-Lymphocytes.

?

In a histological specimen of an eyeball a convexoconvex structure is connected with the ciliary body by means of ciliary zonule fibres, and is covered with transparent capsule from above. Name this structure.

+Lens.

-Vitreous body.

-Ciliary body.

-Cornea.

-Sclera.

?

Twilight vision disorder occurs as a result of vitamin A deficit. Name the cells, which perform this photoreceptor function.

+Rod neurosensory cells.

-Horizontal neurons.

-Cones neurosensory cells.

-Multipolar neurons.

-Ganglionic nerve cells.

?

During examination an oculist has detected that the patient does not distinguish blue and green colors, but perceives other colors normally. It may be connected with the function damage of some structures of retina. Name these structures.

+Cones neurons.

-Rod neurons.

-Multipolar neurons.

-Amacrine neurons.

-Horizontal neurons.

?

The ciliary body of a patient is damaged. The function of what eye apparatus suffers?

+Accommodation.

-Light-conductive.

-Light-sensitive.

-Protective.

-Trophic.

?

In a histological specimen a structure of eyeball wall is detected; blood vessels are absent in this structure. What structure is characterized by this morphologic sign?

+Cornea.

-Ciliary body.

-Choroid.

-Iris.

-Retina.

?

The increased intraocular tension is observed in the patient with glaucoma. Secretion of aqueous humor by the ciliar body is normal. Injury of what structure of the eyeball wall caused the disorder of flow-out from the anterior chamber?

+Venous sinus.

-Choroid.

-Ciliar body.

-Back epithelium of cornea.

-Ciliary muscle.

?

A histological specimen presents a receptor zone of a sensoepithelial sense organ. Cells of this zone are placed upon the basal membrane and include the following types: external and internal receptor cells, external and internal phalangeal cells, stem cells, external limiting cells and external supporting cells.

The described receptor zone belongs to the following sense organ:

+Acoustic organ.

-Visual organ.

-Olfactory organ.

-Equilibrium organ.

-Gustatory organ.

?

A man who went for a ride on a roundabout had amplification of heart rate, sweating and nausea. What receptors stimulation is it primarily connected with?

+Vestibular.

-Visual.

-Auditory.

-Tactors.

-Proprioceptors.

?

A patient has taken high doses of streptomycin and consequently became deaf. The function of what cells of the inner ear was damaged in this case?

+Hair.

-Phalangeal.

-Pillar.

-Deiters'.

-Connective tissue.

?

In an electronic micrograph of a sense organ hair cells are seen, on their apical part there are short microvilli -stereocilia and a polar-located kinocilium. Of what sensory organ are such cells typical?

+Organ of vestibular.



-Organ of vision.

-Olfactory organ.

-Organ of hearing.

-Organ of taste.

?

Surface with an intact toad on it was inclined to the right. Tone of extensor muscles became reflectory higher due to the activation of the following receptors:

+Vestibuloreceptors of utricle and saccule.

-Photoreceptors of retina.

-Vestibuloreceptors of semicircular ducts.

-Mechanoreceptors of foot skin.

-Proprioreceptors.

?

A 60 y.o. patient has a reduced perception of high-frequency sounds. What structures' disorder of auditory analyzer caused these changes?

+Main membrane of cochlea near the oval window.

-Main membrane of cochlea near hell-cotrema.

-Eustachian tube.

-Muscles of middle ear.

-Tympanic membrane.

?

Study of fingerprints (dactylography) is used by criminalists for personal identification as well as for diagnostics of genetic abnormalities, particularly Dawn's disease. What layer of skin determines individuality of fingerprints?

+Dermopapillary.

-Horny.

-Reticular.

-Clear (stratum lucidum epidermidis).

-Basal.

?

In an electronic micrograph of skin epidermis among the cells of cubic form dendritic cells are detected. In their cytoplasm Golgi apparatus is well-developed, there are a lot of ribosomes and melanosomes. Name these cells.

+Melanocytes.

-Keratinocytes.

-Cells of Langerhans.

-Merkel's cells.

-Mast cells.

?

Terminal secretory parts of apocrine sudoriferous glands contain myoepithelial cells. What is the function of these cells?

+Contractive.

-Secretory.

-Protective.

-Regenerative.

-Supportive.

?

A patient with an open fracture of a forefinger has appealed to a traumatology center. First medical aid is given. Which of the injured tissues regenerates the most quickly?

+Epidermis.

-Connective.

-Striated muscular.

-Bone.

-E. Nerve.

?

In medicolegal practice identification of personality is periodically necessary. The method of dactyloscopy is used for this purpose. Structure peculiarities of what layer define the individual skin pattern?

+Papillary derma layer.

-Reticular derma layer.

-Epidermis.

-Epidermis and derma.

-Epidermis, derma, and hypoderm.

?

A 12-year-old patient has white spots without a pigment on skin. Spots have appeared after the age of 10, constantly increase in size. The absence of what cells of skin led to such formations appearance?

+Melanocytes.

-Adipocytes.

-Fibrocytes.

-Plasma cell.

-Mast cell.

?

A child has abraded skin of the palm when falling down. What epithelium was damaged?

+Stratified keratinized.

-Stratified non-keratinized.

-Simple low-columnar.

-Transitional.

-Simple squamous.

?

A woman has got allergic dermatitis of hands after industrial contact with chromium compounds. What cells of skin were mainly damaged by the disease?

+Mast cells.

-Plasma cells.

-Macrophages.

-Neutrophils.

-Lymphocytes.

?

The reticular layer of skin is damaged after a trauma. This layer will recover with the help of a cell population. Name this cell population.

+Fibroblastic.

-Macrophagic.

-Lymphoblastic.

-Neuroblasts.

-Erythroblastic.

?

Some layers are absent on a limited area of epidermis after a trauma. Only germinative layer is preserved. Name the cells, which will become the main source of its regeneration.

+Layer of basal cells.

-Layer of spinosum cells.

-Layer of granulosum cells.

-Layer of spinous and granular cells of undisturbed area.

-Clear layer cells of undisturbed area.

?

In skin biopsy material in epidermis cells with processes containing deep-brown granules in cytoplasm have been detected. What cells are these?

+Melanocytes.

-Intraepidermal macrophages.

-Keratinocytes.

-Merkel's cells.

-Lymphocytes.

?

A patient complains of dryness of head skin, itching, fragility and loss of hair. After examination he was diagnosed with seborrhea. Disturbed activity of which cells caused this condition?

+Cells of sebaceous glands.

-Adipocytes.

-Cells of sudoriferous glands.

-Epithelial cells.

-Melanocytes.

?

A sensitive neural ganglion consists of roundish neurocytes with one extension that divides into axon and dendrite at some distance from the perikaryon. What are these cells called?

+Pseudounipolar.

-Unipolar.

-Bipolar.

-Multipolar.

-Apolar.

?

A specimen, dyed by the method of silver impregnation, is being investigated. Pyramidal cells of different size are seen in this specimen. Short processes come off their tips and lateral surfaces; one long process comes off the base of the cells. Name the specimen.

+Cerebral cortex.

-Spiral organ of inner ear.

-Retina of the eye.

-Cortex of the cerebellum.

-Spinal ganglion.

?

A patient with poliomyelitis has the damage of the spinal cord and the dysfunction of skeletal muscles. It may be explained by the destruction of some neurons. Name these neurons.

+Motor.

-Pseudounipolar.

-Associative.

-Pseudounipolar and associative.

-Associative and motor.

?

During an experiment the dorsal roots of the spinal cord of an animal have been cut. What changes will be observed in the innervation zone?

+Sensitivity loss.

-Increase in muscle tone.

-Loss of motor functions.

-Sensitivity loss and loss of motor functions.

-Decrease in muscle tone.

?

In a histological specimen an organ of nervous system is presented, which consists of grey and white substances. Grey substance is located on the periphery. Neurons form three layers in it: molecular, ganglionic, and granular. What organ is this?

+Cerebellum.

-Spinal cord.

-Pons cerebelli.

-Cerebral cortex.

-Medulla oblongata.

?

Alcohol intoxication, as a rule, is accompanied by the coordination of movements disorder and imbalance caused by the damage of cerebellum structural elements. The function of what cells of cerebellum is affected first of all?

+Purkinje's.

-Basket.

-Betz.

-Stellate.

-Granulosa.

?

A part of the central nervous system has layer-by-layer allocation of neurocytes, among which there are cells of such forms: stellate, fusiform, horizontal, pyramidal. What part of the CNS has this structure?

+Cortex of large hemispheres.

-Cerebellum.

-Hypothalamus.

-Spinal cord.

-Medulla oblongata.

?

During spinal puncture a neurologist punctuates dura mater. Which tissue forms it?

+Dense connective tissue.

-Loose connective tissue.

-Smooth muscle tissue.

-Mucous connective tissue.

-Cartilaginous tissue.

?

A middle-aged man went to a foreign country because he had been offered a job there. However he had been unemployed for quite a long time. What endocrine glands were exhausted most of all in this man?

+Adrenal glands.

-Substernal glands.

-Seminal glands.

-Parathyroid glands.

-Thyroid glands.

?

An endocrinal gland with parenchyma consisting of epithelium and neural tissue is under morphological examination. Epithelial trabecules have two types of cells: chromophilic and chromophobic. Identify this organ:

+Hypophysis.

-Parathyroid gland.

-Adrenal gland.

-Hypothalamus.

-Thyroid gland.

?

A patient complains of hydruria (7 liters per day) and polydipsia. Examination reveals no disorders of carbohydrate metabolism. These abnormalities might be caused by the dysfunction of the following endocrine gland:

+Neurohypophysis.

-Adrenal cortex.

-Islets of Langerhans (pancreatic islets).

-Adenohypophysis.

-Adrenal medulla.

?

Roentgenological examination of skull base bones revealed enlargement of sellar cavity, thinning of anterior clinoid processes, destruction of different parts, destruction of different parts of sella turcica. Such bone destruction might be caused by a tumour of the following endocrine gland:

+Hypophysis.

-Epiphysis.

-Thymus gland.

-Adrenal glands.

-Thyroid gland.

?

An aged man had raise of arterial pressure under a stress. It was caused by activation of:

+Sympathoadrenal system.

-Hypophysis function.

-Functions of adrenal cortex.

-Parasympathetic nucleus of vagus.

-Functions of thyroid gland.

?

Examination of a patient revealed overgrowth of facial bones and soft tissue, tongue enlargement, wide interdental spaces in the enlarged dental arch. What changes of the hormonal secretion are the most likely?

+Hypersecretion of the somatotropic hormone.

-Hyposecretion of thyroxin.

-Hypersecretion of insulin.

-Hyposecretion of the somatotropic hormone.

-Hyposecretion of insulin.

?

A patient has been given high doses of hydrocortisone for a long time. This caused atrophy of one of the adrenal cortex zones. Which zone is it?

+Fascial.

-Glomerular.

-Reticular.

-Glomerular and reticular.



?

An experimental animal excretes a lot of urine (polyuria) and has severe thirst (polydipsia). Urine does not contain sugar. With the function infringement of what cells is it connected?

- +Neurosecretory cells of hypothalamus.
- Follicular endocrine cells of thyroid gland.
- Parathyrocytes.
- Endocrine cells of glomerular zone of adrenal gland.
- Endocrine cells of medullary substance of adrenal gland.

?

A girl is diagnosed with adrenogenital syndrome (pseudohermaphroditism). This pathology was caused by hypersecretion of the following adrenal hormone:

- +Androgen.
- Aldosterone.
- Estrogen.
- Adrenalin.
- Cortisol.

?

A 32-year-old patient consulted a doctor about the absence of lactation after parturition. Such disorder might be explained by the deficit of the following hormone:

- +Prolactin.
- Vasopressin.
- Glucagon.
- Somatotropin.
- Thyrocalcitonin.

?

A patient with 7 years' history of hypothyroidism has thyroid hormone deficiency detected. What cells of adeno-hypophysis are changed?

- +Thyrotropocytes.
- Gonadotropocytes.
- Corticotropocytes.

-Somatotropocytes.

-Lactotropocytes.

?

A histological specimen presents a parenchymal organ, which has a cortex and medulla. The cortex consists of epithelioid cells with blood capillaries between them; the cells form three zones. The medulla consists of chromaffinocytes and venous sinusoids. Which organ has these morphological features?

+Adrenal gland.

-Kidney.

-Lymph node.

-Thymus.

-Thyroid.

?

In a histological specimen of adrenal glands, the cortical substance one can see small polygonal cells forming round clusters and containing a small quantity of lipidic inclusions. What part of adrenal glands is represented in the specimen?

+Zona glomerulosa.

-Intermediate zone.

-Zona fasciculata.

-Zona reticularis.

-Medullary substance.

?

A 40-year-old man is observed by an endocrinologist: he has a functional insufficiency of adrenal glands cortical substance, which declares itself by the decrease of aldosterone quantity in blood. The function of what cortex cells is disturbed?

+Cells of zona glomerulosa.

-Cells of zona fasciculata.

-Cells of zona reticularis.

-Cells of sudanophobic zone.

-Cells of X-zone.

?

In a histological specimen of adrenal glands one can see large cells of cubic form located in the form of cords and containing a lot of lipidic inclusions. What part of adrenal glands is represented in the specimen?

+Zona fasciculata.

-Zona glomerulosa.

-Intermediate zone.

-Zona reticularis.

-Medullary substance.

?

A 25-year-old woman in a month after delivery appealed to a doctor with complaint of milk quantity decline. The lack of which hormone causes such condition?

+Prolactin.

-Adrenocorticotropin.

-Somatostatin.

-Insulin.

-Glucagon.

?

Aldosterone is known to regulate sodium content in organism. Which cells of adrenal glands secrete this hormone?

+Cells of zona glomerulosa.

-Epinephrocytes.

-Cells of zona reticularis.

-Cells of zona fasciculata.

-Norepinephrocytes.

?

Acromegaly of a patient in an endocrinological department is diagnosed. The hyperfunction of what hypophysis cells caused this disease?

+Somatotropocytes.

-Gonadotropocytes.

-Chromophobocytes.

-Lactotropocytes.

-Thyrotropocytes.

?

A 30-year-old woman against the background of sex hormones deficiency has an increased quantity of follicle-stimulating hormone. What cells synthesize this hormone?

+Gonadotropocytes.

-Thyrotropocytes.

-Corticotropocytes.

-Somatotropocytes.

-Lactotropocytes.

?

Parents of a 10 y. o. boy consulted a doctor about extension of hair-covering, growth of beard and moustache, low voice. Intensified secretion of which hormone must be assumed?

+Of testosterone.

-Of estrogen.

-Of somatotropin.

-Of cortisol.

-Of progesterone.

?

There are round structures of different size in the histological specimen of an endocrine gland. These structures' wall is formed of one layer of epithelial cells on basic membrane, inside they contain homogeneous non-cellular mass. What gland is this?

+Thyroid gland.

-Adrenal gland, cortical substance.

-Parathyroid gland.

-Anterior lobe of pituitary gland.

-Posterior lobe of pituitary gland.

?

A 30-year-old patient has hyper-function of thyroid gland. What form do the thyrocytes of follicles have?

+Columnar.

-Polygonal.

-Squamous.

-Spindle-shaped.

-Cuboidal.

?

A 42-year-old patient has spasms after the resection of the thyroid gland. Relief has come after the introduction of calcium preparations. Function infringement of what endocrine glands has caused this condition?

+Parathyroid glands.

-Adrenal glands.

-Ovaries.

-Hypophysis.

-Epiphysis.

?

In a histological specimen of endocrine gland epithelial cords containing chromophilic (acidophilic and basophilic) and chromophobic cells are detected. What organ is presented in the preparation?

+Adenohypophysis.

-Adrenal gland.

-Neurohypophysis.

-Thyroid gland.

-Epiphysis.

?

A 2-year-old child experienced convulsions because of lowering calcium ions concentration in the blood plasma. Function of what structure is decreased?

+Parathyroid glands.

-Adrenalin cortex.

-Thymus.

-Pineal gland.

-Hypophysis.

?

On some diseases it is observed aldosteronism with hypertension and edema due to sodium retention in the organism. What organ of the internal secretion is affected on aldosteronism?

+Adrenal glands.

-Ovaries.

-Hypophysis.

-Testicle.

-Pancreas.

?

User of oral contraceptives with sex hormones inhibits secretion of the hypophysiae hormones. Secretion of which of the indicated hormones is inhibited while using oral contraceptives with sex hormones?

+Follicle-stimulations.

-Thyrotropic.

-Somatotropic.

-Oxytocin.

-Vasopressin.

?

A 40-year-old woman has weak birth activity caused by the weakness of myometrium contractile ability. What hormonal preparation is it necessary to introduce to help her?

+Oxytocin.

-Hydrocortisone.

-Dexamethasone.

-Aldosterone.

-Prednisolone.

?

A man after 1,5 litre blood loss has suddenly reduced diuresis. The increased secretion of what hormone caused such diuresis alteration?

+Vasopressin.

-Corticotropin.

-Cortisol.

-Parathormone.

-Natriuretic.

?

A 15-year-old girl has a chemical burn of the superior surface of tongue. What epithelium is damaged?

- +Stratified non-keratinized.
- Simple low columnar.
- Simple pseudostratified ciliated.
- Transitional.
- Simple squamous.

?

The reason of some diseases of an oral cavity is connected with structural peculiarities of its mucous membrane. What morphological attributes characterize these features?

- +No muscularis mucosa, stratified squamous epithelium.
- Well developed muscularis, no mucosa.
- Transitional epithelium, no submucosa.
- Transitional epithelium, no muscularis mucosa.
- Simple columnar ciliated epithelium.

?

A 2-year-old child has got intestinal dysbacteriosis, which results in hemorrhagic syndrome. What is the most likely cause of hemorrhage of the child?

- +Vitamin K insufficiency.
- Activation of tissue thromboplastin.
- PP hypovitaminosis.
- Fibrinogen deficiency.
- Hypocalcemia.

?

When the pH level of the stomach lumen decreases to less than 3, the antrum of the stomach releases peptide that acts in paracrine fashion to inhibit gastrin release. This peptide is:

- +GIF.
- Acetylcholine.
- Gastrin-releasing peptide (GRP).
- Somatostatin.

-Vasoactive intestinal peptide (VIP).

?

A patient ill with chronic gastritis went for endogastric pH-metry that allowed to reveal decreased acidity of gastric juice. It is indicative of diminished function of the following cells:

+Parietal exocrinocytes.

-Chief exocrinocytes.

-Endocrinocytes.

-Cervical cells.

-Accessory cells.

?

Examination of a 43-year-old patient has shown that protein products are digested badly in the stomach. Gastric juice analysis has shown low activity. The function of what cells of stomach is damaged in this case?

+Parietal exocrine cells.

-Principal (chief) exocrine cells.

-Mucous cells.

-Endocrine cells.

-Neck mucous cells.

?

A viral infection has damaged cells that form walls of bile capillaries. This stimulated conditions for inflow of bile into the blood of sinusoidal capillaries. What cells are damaged?

+Hepatocytes.

-Endotheliocytes.

-Kupffer's cells.

-Ito cells.

-Pit-cells.

?

A salivary gland histological specimen is being examined. In the specimen protein, mixed and mucous terminal departments are detected. What organ is being examined?

+Sublingual salivary gland.

-Parotid salivary gland.



-Submandibular salivary gland.

-Lip salivary gland.

-Salivary gland of cheek.

?

By some reasons at the age of 5 months a processes of destruction of Hertvig epithelial sheath around a tooth were infringed. What tissue won't develop because of this?

+Cement.

-Dental papilla.

-Dental sacculle.

-Pulp.

-Enamel.

?

By some reasons the activity of cells in the peripheral part of pulp is temporarily blocked. What tissue of the tooth is under the threat of physiological regeneration deficiency?

+Dentin.

-Enamel.

-Pulp.

-Cellular cement.

-Acellular cement.

?

In the first histological tooth specimen acellular cement is detected, in the second - cellular. What part of tooth is the second preparation made of?

+Root apex.

-Dental cervix.

-Upper part of the tooth under the gum.

-Crown of tooth.

-Border between crown and root.

?

A student was wrong when he said that enamel is descended from mesenchyme cells. What is the correct answer?

+Epithelial cells of the internal layer of enamel organ.

-Cells of stellate reticulum of enamel organ.

-Cells of epithelial cervix of enamel organ.

-Cells of Hertvig epithelial sheath.

-Epithelial cells of the external layer of enamel organ.

?

During embryogenesis the formation of the anterior part of primary gut was disturbed. What is the possible localization of development anomalies?

+Organs of oral cavity.

-Stomach.

-Liver.

-Pancreas.

-Jejunum.

?

Disorder in the secretory activity of odontoblasts took place during mantle dentin formation in a milk tooth. Formation of what fibers will be changed?

+Radial Korf collagen fibers.

-Reticular.

-Elastic.

-Tangential Ebner collagen fibers.

-Nerve.

?

In a histological specimen of the lower jaw forming dentin is detected. Collagen fibers synthesized by odontoblasts are thin and perpendicular to dentinal tubules. What fibers are being formed in dentin?

+Tangential.

-Radial.

-Parallel.

-Sharpey.

-Perforated.

?

There are disordered areas of dentin tubules and collagen fibrils in prepulpal dentin of a decalcified tooth of an adult patient. Name this kind of dentin.

+Secondary.

-Primary.

-Tertiary.

-Sclerosed.

-Dead tracts.

?

In a histological specimen there is a section of a jaw of a 2-month-old human embryo with a damaged enamel epithelial organ. What histological part of the tooth will not develop?

+Enamel.

-Pulp.

-Cement.

-Periodontium.

-Dentin.

?

During embryogenesis superficial mesenchimal cells of dental papilla were damaged. To the failure of what dental structure formation can this lead?

+Dentin.

-Enamel.

-Cement.

-Periodontium.

-Enamel cuticle.

?

Internal cells of dental sacculle were damaged during dental morphogenesis. The formation of what structures will be damaged?

+Cement.

-Enamel.

-Dentin.

-Pulp.

-Periodontium.

?

Examination of a patient has shown deficient pulp development. What embryonal source has been affected?

+Mesenchyme.

-Ectoderm.

-Endoderm.

-Epithelium of oral cavity.

-Dorsal mesoderm.

?

In a histological specimen of the lower jaw sagittal section of a 3.5-month-old human embryo an epithelial enamel organ surrounded by compactly placed mesenchimal cells is observed. How is this mesenchimal formation called?

+Dental sacculle.

-Dental papilla.

-External enamel cells.

-Internal enamel cells.

-Pulp of enamel organ.

?

During oral cavity embryogenesis dental enamel development was damaged. What source of dental development was affected?

+Epithelium of oral cavity.

-Mesenchyme.

-Mesoderm.

-Dental sacculle.

-Dental papilla.

?

Dentin having been formed, a process of inversion begins in cells - the movement of nucleus and organelles. What cells are involved in this process?

+Enameloblasts.

-Odontoblasts.

-Preodontoblasts.

-Cementoblasts.

-Cementocytes.

?

Undeveloped periodontium was detected during microscopic examination of biopsy material. To what source of dental development does this infringement belong?

+Dental sacculi.

-Dental papilla.

-Dental plate.

-Preenameloblasts.

-Enameloblasts.

?

There is the change of teeth at the 6-8 year-old children: deciduous are replaced by permanent. What embryonic tissues are the sources of formation of permanent teeth tissues?

+Ectodermal epithelium of a tooth plate and mesenchyme.

-I, II brachial arches.

-Entodermal epithelium and mesoderm.

-Entodermal epithelium of a tooth plate and mesenchyme.

-Mesodermal epithelium and mesenchyme.

?

There are 3 zones in a histological specimen of an oral cavity organ: adipose, mucous, fibrous. What organ is this?

+Hard palate.

-Gum.

-Soft palate.

-Lip.

-Cheek.

?

In a histological specimen an organ of oral cavity is observed. It consists of 3 parts - dermal, intermediate, and mucous, the base being formed of striated muscle tissue. What organ is it?

+Lip.

-Gum.

-Hard palate.

-Soft palate.

-Cheek.

?

In a histological specimen of an oral cavity organ it can be seen that the anterior surface is lined with stratified squamous non-keratinized epithelium, the posterior surface - with pseudostratified ciliary epithelium. What organ is it?

+Soft palate.

-Gum.

-Hard palate.

-Lip.

-Cheek.

?

A sick child has white scurf on the tongue. What papillae have caused this?

+Filiform papilla.

-Circumvallate papilla.

-Foliate papilla.

-Fungiform papilla.

-Leaflike papilla.

?

During the act of swallowing milk runs through an infant's nose, the child chokes, breathes heavily. During examination a surgeon detected a congenital defect - cleft palate. What development anomalies lead to this pathology?

+Nonunion of palatine processes.

-Disorder of union of middle nasal process with maxillary one.

-Nonunion of mandible processes.

-Nonunion of lateral tongue tubercles.

-Disorder of development of frontal process.

?

Experimentally the external layer of a dental sacculle was destroyed in an embryo's dental germ. Name the structure that will not develop in future.

+Periodontium.

-Enamel.

-Dentin.

-Cement.

-Pulp.

?

A 42-year-old patient suffers from parodontosis. Round calcified formations of 2-3 mm in diameter are found in the crown part of pulp. What structures are these?

+Denticles.

-Interglobular cavities.

-Sclerosed dentin.

-Dead dentin.

-Intertubular dentin.

?

A child complains of toothache. A dentist diagnosed carious damage of enamel. Quantity of what mineral substances decreases in the site of carious damage?

+Phosphorus, fluorine, calcium.

-Sodium, calcium, potassium.

-Potassium, phosphorus, fluorine.

-Magnesium, fluorine, calcium.

-Phosphorus, magnesium, potassium.

?

In a histological specimen there is presented a transverse section of the wall of a hollow organ, whose mucous membrane is covered with stratified squamous non-keratinized epithelium. What organ is this?

+Esophagus.

-Duodenum.

-Colon.

-Uterus.

-Vermiform appendix.

?

In a histologic specimen in the submucosal base of small intestine terminal parts of serous glands are located. What part of the intestine is presented in the specimen?

+Duodenum.

-Colon.

-Jejunum.

-Ileum.

-Appendix.

?

During histological examination of the stomach it was found out that glands contained very small amount of parietal cell or they were totally absent. Mucosa membrane of what part of the stomach was studied?

+Pyloric part

-Cardia

-Body of the stomach

-Fundus of the stomach

?

In a histological specimen of a small intestine wall at the bottom of crypts there have been found clustered cells. In the apical part of the cells there are large acidophilic secretory granules; cytoplasm is basophilic-colored. What cells are these?

+Panett.

-Columnar without bordering.

-Endocrine.

-Goblet.

-Columnar with bordering.

?

In a histological specimen an organ parenchyma is presented by lobules of hexahedral prism form consisting of anastomosing plates with sinusoidal capillaries. The capillaries are lying between the plates and are radially converging to the central vein. What anatomic organ has such morphological structure?



+Liver.

-Pancreas.

-Thymus.

-Spleen.

-Lymph node.

?

Ultramicroscopical examination of "dark" hepatocyte population in the cell cytoplasm detected a developed granular endoplasmic reticulum. What function has this organelle in these cell?

+Synthesis of blood plasma proteins.

-Carbohydrate synthesis.

-Calcium ion depositing.

-Bile production.

-Deintoxicative function.

?

Because of present gallstone in the common bile duct, a patient has no bile excretion into duodenum. What disorder can it cause?

+Lipids digestion.

-Carbohydrates absorption.

-Proteins absorption.

-Proteins digestion.

-Carbohydrates digestion.

?

A child of the first year of life has disorders of mother's milk suction. With activity disorder of what gastric proper glands cells is it connected?

+Principal exocrine cells.

-Parietal exocrine cells.

-Neck mucous cells.

-Additional mucous cells.

-Endocrine cells.

?

In an electronic microgram of duodenal epithelium a cell with electro-dense granules on the basal pole is clearly seen. What cell is this?

+Endocrine cells.

-Columnar with microvilli.

-Parietal exocrine cells.

-Goblet cell.

-Undifferentiated.

?

Intragastric pH-metry of a patient with chronic gastritis was performed. The procedure detected the reduction of gastric juice acidity. What cells function is lowered?

+Parietal exocrine cells.

-Principal exocrine cells.

-Endocrine cells.

-Neck mucous cells.

-Additional cells.

?

The process of epithelium cornification is detected during the morphological analysis of the mucous coat of esophagus biopsy material. What epithelium covers the mucous coat of esophagus?

+Stratified squamous non-keratinized.

-Simple squamous.

-Simple pseudostratified ciliary.

-Simple columnar.

-Stratified squamous keratinized.

?

Significant infringement of the regeneration process of the small intestine mucous membrane epithelial layer of a cancer patient is detected by means of morphological research after ray therapeutics. What epithelial layer cells are damaged?

+Columnar non-border epithelial cells.

-Columnar epithelial cells with microvilli.

-Goblet exocrine cells.

-Endocrine cells.

-Exocrine cells with acidophilic granularity.

?

The rate of small intestine epithelium renovation of a patient is reduced. With the damage of what cells is it connected?

+Columnar non-border epithelial cells.

-Paneth's.

-Columnar epithelial cells with microvilli.

-Goblet.

-Endocrine cells.

?

After the ray therapeutics of the stomach cancer a 48-year-old patient has malignant anemia developed caused by the damage of the cells producing antianemic factor. What gastric glands cells are damaged?

+Parietal exocrine cells.

-Principal exocrine cells.

-Neck mucous cells.

-Endocrine cells.

-Additional mucous cells.

?

An infectiologist has detected an acute enterocolitis syndrome with infringement of the processes of breakdown and absorption of nutritive materials of a patient. Due to the damage of what intestinal epithelium cells is such disorder observed?

+Columnar epitheliocytes with microvilli.

-Non-microvilli epitheliocytes.

-Goblet cells.

-Cells with an acidophile granule.

-Endocryocytes.

?

A 45-year-old patient is hospitalized with the complaint of pain in the stomach. Gastroscopy has detected small ulcers in the area of gastric fundus. The function impairment of what cells of the mucous coat of stomach became a reason for the mucous coat damage?

+Cells of superficial epithelium with mucous secretion.

-Parietal cells of stomach glands that secrete chlorides and ions of hydrogen.

-Principal (chief) exocrine cells that secrete pepsinogen.

-Endocrine cells which secrete somatostatin.

-Endocrine cells which secrete serotonin.

?

In a histological specimen of a glandular organ only serous terminal parts are detected. In interlobular connective tissue a duct is seen, lined with two-layer or stratified epithelium. What organ is this?

+Parotid salivary gland.

-Submandibular salivary gland.

-Pancreas.

-Sublingual salivary gland.

-Liver.

?

A microspecimen of the submandibular salivary gland shows some basket-shaped cells concentrated around the acines and excretory ducts. These cells surround bases of the serous cells and are called myoepitheliocytes. These cells relate to the following tissue:

+Muscular tissue.

-Neural tissue.

-Epithelial tissue.

-Loose fibrous connective tissue.

-Special connective tissue.

?

The B cells of endocrine portion of pancreas are selectively damaged by alloxan poisoning. How will it be reflected in blood plasma?

+The level of sugar decreases.

-The content of albumins decreases.

-The content of fibrinogen decreases.

-The content of globulins decreases.

-The content of sugar increases.

?

Some diseases of small intestine are connected with the functions damage of exocrine cells with acidophil granules. Where are these cells located?

- +At the bottom of intestinal glands.
- In the apical part of intestinal villi.
- On lateral surfaces of intestinal villi.
- In the place of villi transition into crypts.
- In the superior part of intestinal glands.

?

The proportion between epithelial cells of mucosa change in case of certain diseases of large intestine. What types of cells dominate in epithelium crypts of large intestine in normal condition?

- +Goblet cells.
- Columnar villous epithelial cells.
- Endocrine cells.
- With acidophil granules.
- Undifferentiated cells.

?

Proctoscopy has shown a tumor proceeding from the mucosa of the caudal part of rectum. Of what epithelium has this tumor formed?

- +Stratified squamous non-keratinized.
- Simple columnar glandular.
- Simple columnar with microvilli.
- Simple cuboidal.
- Transitional.

?

During the excrescence of connective tissue into the parenchyma of liver (fibrosis caused by chronic diseases) blood circulation disorder in classical lobules is observed. What is the direction of blood circulation in such lobules normally?

- +From periphery to centre.
- From centre to periphery.
- Around the lobule.
- From top to bottom.

-From bottom to top.

?

An electron microphotography of a fragment of proper gastric gland shows a big irregular round-shaped cell. There are a lot of intracellular tubules and mitochondria in the cytoplasm. Specify this cell:

+Parietal cell.

-Endocrine cell.

-Mucous cell.

-Undifferentiated cell.

-Principal cell.

?

During an experiment vagus branches that innervate heart are being stimulated. This has stopped conduction of excitement from the atria to the ventricles. The reason for it are electrophysical changes in the following structure:

+Atrioventricular node.

-Atria.

-Sinoatrial node.

-Ventricles.

-His' bundle.

?

In a red bone marrow specimen numerous capillaries are detected, through their wall mature blood elements enter blood circulation. What is the type of these capillaries?

+Sinusoidal.

-Fenestrated.

-Somatic.

-Visceral.

-Lymphatic.

?

Tunica intima of a vessel has been impregnated with argentic salt. As a result the cells with rugged, twisting edges have been detected. Name these cells.

+Endotheliocytes.

-Stellate cells.

-Myocytes.

-Fibroblasts.

-Adipocytes.

?

There are some tunics in the wall of blood vessels and heart. What tunic of the heart corresponds to a blood vessels wall according to its histogenesis and tissue structure?

+Endocardium.

-Myocardium.

-Pericardium.

-Epicardium.

-Epicardium and myocardium.

?

In a spleen specimen a blood vessel is detected. Its wall consists of basic membrane with endothelium, tunica media is absent, adventitia is grown together with connective tissue interlayers of spleen. What vessel is it?

+Vein of unmuscular type.

-Vein of muscular type with poor development of muscular elements.

-Artery of muscular type.

-Arteriole.

-Artery of elastic type.

?

An electronic micrograph of the myocardium shows cells of dendritic form containing a few organelles, but with a well-developed granular endoplasmic reticulum and secretory granules. Name these cells.

+Secretory cardiac cells.

-Ventricular cardiac cells.

-Pacemaker cells.

-Transitional atypical cells.

-Cells of His' fibers.

?

In a histological specimen of a blood vessel dyed with orcein there have been detected from 40 to 60 elastic fenestrated membranes in the tunica media. Name this blood vessel.

+Artery of elastic type.

-Artery of muscular type.

-Artery of mixed type.

-Vein of muscular type.

-Vein of unmuscular type.

?

Large quantity of exudate has been detected in the pericardial cavity of a patient with exudative pericarditis. Functional activity disorder of what cells caused this?

+Mesotheliocytes.

-Fibroblasts.

-Contractile cardiac cells.

-Conductive cardiac cells.

-Endotheliocytes.

?

An organ of cardiovascular system is built of cells connected with the help of intercalated disks. What organ is this?

+Heart.

-Vein of muscular type.

-Artery of mixed type.

-Artery of muscular type.

-Aorta.

?

Arterioles are playing an important role in supplying functional units of organs with blood. Which arteriole structures perform this function?

+Myocytes.

-External elastic membrane.

-Internal elastic membrane.

-Special cells of connective tissue.

-Endotheliocytes.

?



A capillary is characterized by fenestrated epithelium and porous basic membrane. What is the type of this capillary?

+Sinusoidal.

-Somatic.

-Visceral.

-Lymphatic.

-Lacunar.

?

Vessels walls have rather significant differences in the structure of the tunica media. What causes specific peculiarities of this tunica structure in different vessels?

+Hemodynamic conditions.

-Influence of endocrine system organs.

-Central nervous system regulation.

-Inductive influence of autonomic ganglions.

-High concentration of catecholamines in blood.

?

Large arteries stretch during systole and return to the start state during diastole to provide bloodstream stability. Which structural components of vessel wall explain this?

+Elastic fibres.

-Muscle fibres.

-Reticular fibres.

-Collagen fibres.

-Numerous fibroblasts.

?

A histological specimen presents an artery. One of the membranes of its wall has flat cells lying on the basal membran What type of cells is it?

+Endothelium.

-Macrophages.

-Mesothelium.

-Fibroblasts.

-Smooth myocytes.

?

An isolated cell of human heart automatically generates excitement impulses with frequency of 60 times per minute. This cell was taken from the following heart structure:

+Sinoatrial node.

-Atrium.

-Atrioventricular node.

-Ventricle.

-His' bundle.

?

A cardiac electric stimulator was implanted to a 75 year old man with heart rate of 40 bpm. Thereafter the heart rate rose up to 70 bpm. The electric stimulator has undertaken the function of the following heart part:

+Sinoatrial node.

-His' bundle branches.

-Atrioventricular node.

-Purkinje's fibers.

-His' bundle fibers.

?

Heart rate of a man permanently equals 40 beats pro minute. What is the pacemaker of the heart rhythm in this person?

+Atrioventricular node.

-Sinoatrial node.

-His' bundle.

-Purkinje's fibers.

-His' bundle branches.

?

Heart rate of a 30-year-old man under emotional stress reached 112 bpm. The reason for the heart rate increase is the altered condition of the following conducting system of heart:

+Sinoatrial node.

-Purkinje's fibers.

-His' bundle branches.

-Atrioventricular node.

-His' bundle.

?

Abnormalities of the development of the ventricle myocardium of a newborn child were diagnosed. The disturbance of which embryonic anlage development causes such pathology?

+Myoepicardial plate.

-Parietal splanchnopleure.

-Endoderm.

-Ectoderm.

-Mesenchyme.

?

In a heart specimen there are detected cells of squared shape, 80-120 micrometers in size, with a central nucleus and well-developed myofibrils connected with the help of intercalated disks. What function is connected with these cells?

+Heart contraction.

-Nerve impulses conduction.

-Endocrine.

-Protective.

-Regenerative.

?

In a heart wall histological specimen between endocardium and myocardium large cells with light cytoplasm and eccentrically located nucleus are detected. What cells of heart have these morphological features?

+Cells of Purkinje's fibers.

-Pacemaker cells.

-Contractile cardiac cells.

-Endocrine cells.

-Lipocytes.

?

Examination of an isolated cardiomyocyte revealed that it didn't generate excitation impulses automatically. This cardiomyocyte was obtained from:

+Purkinje's fibers.

-Atrioventricular node.

-Sinoatrial node.

-His'bundle.

-Ventricles.

?

Histological specimen presents a vessel the wall of which consists of endothelium, basal membrane and loose connective tissue. What type of vessel is it?

+Vein of non-muscular type.

-Vein muscular type.

-Artery.

-Hemocapillary.

-Lymphocapillary.

?

I.M.Sechenov called arterioles "the taps" of the cardiovascular system. What structural elements provide this function of arterioles?

+Circular myocytes.

-Longitudinal myocytes.

-Elastic fibres.

-Longitudinal muscle fibers.

-Collagen fibers.

?

A 40-year-old patient had myocardial infarction. Due to what morphological components has heart wall regeneration taken place?

+Proliferation of connective tissue cells.

-Intracellular regeneration of contractile cardiac cells.

-Proliferation of contractile cardiac cells.

-Proliferation of conducting cardiac cells.

-Proliferation of contractile and conducting cardiac cells.

?

In a histological specimen of a vessel internal and external elastic membranes are well-expressed; numerous myocytes are found in the tunica media. What vessel is this?

+Artery of muscular type.

-Artery of mixed type.

-Vein with strong development of muscles.

-Artery of elastic type.

-Extraorganic lymphatic vessel.

?

Examination of skin biopsy material has shown vessels in the structure of derma, which contain a thick layer of-smooth muscular cells in the tunica media. Name these vessels.

+Arteries of muscular type.

-Capillaries.

-Arterioles.

-Venules.

-Arteriovenous anastomoses.

?

In a histological specimen the vessels, which begin blindly, are detected. These vessels have a form of flattened endothelial tubes. They do not contain basic membrane and pericytes. Endothelium of these vessels is fixed by fixative fibers to collagen fibers of connecting tissue. What vessels are these?

+Lymphocapillaries.

-Hemocapillaries.

-Arterioles.

-Venules.

-Arteriovenous anastomosis.

?

In course of an experiment a big number of column cells of red bone marrow was in some way destructed. Regeneration of which cell populations in the loose connective tissue be inhibited?

+Of macrophags.

-Of pericytes.

-Of pigment cells.

-Of lipocytes.

-Of fibroblasts.

?

In a histological specimen parenchyma of an organ is represented by lymphoid tissue that forms lymph nodes; the latter are arranged in a diffuse manner and enclose a central artery. What anatomic formation has such morphological structure?

+Spleen.

-Tonsil.

-Lymph node.

-Red bone marrow.

-Thymus.

?

A histologic specimen of medulla substance of a hematopoietic organ lobule has a lighter stain and contains epithelial bodies. What organ has these morphologic characteristics?

+Thymus.

-Lymph node.

-Spleen.

-Liver.

-Kidney.

?

In a histological specimen a hematopoietic organ consisting of varying in shape lobules is being researched. Each lobule has cortical and medullary substance. Which organ has these morphologic characteristics?

+Thymus.

-Lymph node.

-Spleen.

-Tonsils.

-Vermiform appendix.

?

A teenager was irradiated with high radiation dose that resulted in serious damages of lymphoid system, lysis of many lymphocytes. Restoration of normal hemogram is possible due to the functioning of the following gland:

+Thymus.

-Adrenal.

-Pancreas.

-Liver.

-Thyroid.

?

Responding to the same antigen on recurring exposure specific antibodies are produced by lymphatic system cells. With the function of what cells is this phenomenon connected?

+B-memory cells.

-T-killers.

-T-suppressors.

-Macrophages.

-Dendritic cells.

?

Experimentally blood B-lymphocytes were labeled. Foreign protein was subcutaneously introduced to an animal. Which connective tissue cells will contain the label?

+Plasma cells.

-T-lymphocytes.

-Macrophages.

-Mast cells.

-Fibroblasts.

?

In a microscopic specimen is a bean-shaped organ which has cortical and medullar substance. Cortical substance is represented by separate spherical nodules 0.5-1 mm in diameter, medullar substance - by medullary cords. What organ is this?

+Lymph node.

-Kidney.

-Thymus.

-Adrenal gland.

-Spleen.

?

In the specimen of a lymph node histological section the enlargement of its paracortical zone is observed. The proliferation of which lymph node cells causes this process?

+T-lymphocytes.

-Waterside macrophages.

-Plasma cells.

-Macrophages.

-Reticulocytes.

?

Histological examination of a 35-year-old man's red bone marrow punctuate has shown considerable decrease of megakaryocytes quantity. What changes of peripheral blood accompany this?

+Thrombocytopenia.

-Leukocytosis.

-Thrombocytosis.

-Granulocytopenia.

-Leukopenia.

?

In the histological section of a lymph node of an experimental animal in medullary cords after antigen stimulation a plenty of cells of such morphology have been detected: intensively basophilic cytoplasm, eccentrically located nucleus with chromatin, which is located as wheel spokes with a light site of cytoplasm near it. What cells are these?

+Plasma cells.

-Macrophages.

-Fibroblasts.

-Adipocytes.

-Mast cells.

?

A student has to study two smears specimens. In one of them all visual field is covered by erythrocytes. In the other one there are blood elements of different maturity. What smears are these?



+Blood and a smear of human red bone marrow.

-Blood and lymph.

-Frog blood and human blood.

-Blood and a smear of yellow bone marrow.

-A smear of yellow and red bone marrow.

?

A student has two histological specimens; both contain organs with lymph nodules. In the first specimen follicles contain eccentrically located artery, in the second one there are follicles without arteries. What organs are these?

+The first - spleen, the second - lymph node.

-The first - red bone marrow, the second - spleen.

-The first - thymus, the second - spleen.

-The first - liver, the second - lymph node.

-The first - liver, the second - spleen.

?

A specimen of human red bone marrow contains giant cells clusters in close contact with sinusoidal capillaries. Name the blood elements, which differentiate from these cells.

+Thrombocytes.

-Erythrocytes.

-Leukocytes.

-Monocytes.

-Lymphocytes.

?

The punctate of hematopoietic organ parenchyma has been taken with the purpose of diagnostics. As a result, megakaryocytes have been found. What hematopoietic organ is this?

+Red bone marrow.

-Spleen.

-Thymus.

-Lymph node.

-Tonsil.

?

An electron microphotograph shows a macrophagis cells with erythrocytes at different stages of differentiation located along its processes. This is the cell of the following organ:

+Red bone marrow.

-Tonsil.

-Lymph node.

-Spleen.

-Thymus.

?

The quantity of epithelioreticulocytes and Hassall corpuscles in thymus lobules increases in case of infection diseases or intoxications. The area of medullary substance extends. How are these changes called?

+Accidental involution.

-Age involution.

-Status thymicolymphaticus.

-T-immunodeficiency.

-B-immunodeficiency.

?

Histological examination of a 40 y.o. man's thymus revealed decreased share of parenchymatous gland elements, increased share of adipose and loose connective tissue, its enrichment with thymus bodies. The organ's mass was unchanged. What phenomenon is it?

+Age involution.

-Dystrophy.

-Atrophy.

-Hypotrophy.

-Accidental involution.

?

Experimentally into the organism of a laboratory animal thymosin antibodies have been introduced. Differentiation of what cells will be affected first of all?

+T-lymphocytes.

-Monocytes.

-B-lymphocytes.

-Macrophages.

-Plasma cells.

?

A 27-year-old woman has dropped penicillin containing eye drops. In few minutes there appeared feeling of itching, burning of the skin, lips and eyelids edema, whistling cough, decreasing of BP. What antibodies take part in the development this allergic reaction?

+IgE and IgG.

-IgG and IgD.

-IgM and IgD.

-IgM and IgG.

-IgA and IgM.

?

A newborn child has an undeveloped thymus. What type of hemato-poiesis is damaged?

+Lymphopoiesis.

-Monocytopoiesis.

-Erythropoiesis.

-Granulocytopoiesis.

-Megakaryocytopoiesis.

?

It is known that plasma cells produce specific antibodies to this antigen. After antigen introduction the quantity of plasma cells is increasing. What cells differentiate into plasma cells?

+B-lymphocytes.

-T-lymphocytes.

-Neutrophils.

-Eosinophils.

-Basophils.

?

Developing blood cells of red bone marrow are located in the form of islets. Some of the islets are linked with macrophages. What blood elements are developing in these islets?

+Erythrocytes.

-Unmature T-and B-lymphocytes.

-Monocytes.

-Thrombocytes.

-Basophile granulocytes.

?

Clusters of spherical cells with large basophile nuclei and thin rim of cytoplasm are detected in a specimen of small intestine in lamina propria of mucous membrane. Majority of the clusters have a light central part containing fewer cells than the peripheral one. To what morphological structure do such clusters belong?

+Lymph nodule.

-Nerve nodule.

-Adipose cells.

-Blood vessels.

-Lymphatic vessels.

?

In a patient with clinical signs of immunodeficiency the number and functional activity of T- and B-lymphocytes are not changed. Defect with dysfunction of antigen-presentation to the immunocompetent cells was found during investigation on the molecule level. Defect of what cells is the most probable?

+Macrophages, B-lymphocytes.

-O-lymphocytes.

-NK-cells.

-T-lymphocytes, B-lymphocytes.

-Fibroblasts, T-lymphocytes, B-lymphocytes.

?

In the microspecimen of red bone marrow there were revealed multiple capillares through the walls of which mature blood cells penetrated. What type of capillares is it?

+Sinusoidal.

-Fenestrational.

-Somatical.

-Visceral.

-Lymphatic.

?

A female patient underwent liver transplantation. 1,5 month after it her condition became worse because of reaction of transplant rejection. What factor of immune system plays the leading part in this reaction?

+T-killers.

-B-lymphocytes.

-T-helpers.

-Interleukin-1.

-Natural killers.

?

A patient with skin mycosis has disorder of cellular immunity. The most typical characteristic of it is reduction of the following index:

+T-lymphocytes.

-Immunoglobulin

-Immunoglobulin G.

-B-lymphocytes.

-Plasmocytes.

?

In the course of an experiment a vital coloring agent was introduced into a lymph node afferent vessel of an animal. In what cells of the lymph node will it be possible to detect it?

+Typical and waterside macrophages.

-Reticular endotheliocytes.

-B-lymphocytes.

-Plasma cells.

-T-lymphocytes.

?

A child has a congenital immunodeficiency. Cellular immunity is damaged, which results in frequent viral infections. What organ disorder is it most probably caused by?

+Thymus.

-Red bone marrow.

-Lymph nodes.

-Spleen.

-Palatine tonsil.

?

In a specimen of human red bone marrow smear among the cells of myeloid line and adipocytes there are stellate cells with oxyphilic cytoplasm, which contact with the help of their processes. What cells are these?

+Reticular cells.

-Fibroblasts.

-Macrophages.

-Dendritic cells.

-Osteocytes.

?

In lymph node biopsy material in medullary cords the focus of increased plasmocytogenesis is detected. Antigen-dependent stimulation of what cells caused the formation of this center?

+B-lymphocytes.

-T-lymphocytes.

-Macrophages.

-Dendritic cells.

-Interdigitative cells.

?

A 35 year old patient applied to a doctor with complaints about having intense rhinitis and loss of sense of smell for a week. Objectively: nasal cavity contains a lot of mucus that covers mucous membrane and blocks olfactory receptors. In what part of nasal cavity are there receptors situated?

+Superior nasal turbinate (concha)

-Median nasal turbinate (concha)

-Inferior nasal turbinate (concha)

-Common nasal meatus

-Vestibule of nose

?

A patient has appealed to an otolaryngologist with complaints of dryness in the nose which caused unpleasant sensations. Examination of nasal cavity mucosa has shown function infringements of mucous glands located in it. In what layer of nasal cavity mucosa are these glands located?

+Proper mucous plate.

-Epithelial plate.

-Muscle plate.

-Submucous layer.

-Fibrocartilaginous plate.

?

Work in the mines is known to be connected with the inhalation of a significant amount of coal dust. In what pulmonary cells is it possible to detect coal dust?

+In alveolar macrophages.

-In respiratory epithelial cells.

-In secretory epithelial cells.

-In endotheliocytes of capillaries.

-In the pericytes of capillaries.

?

Lung of premature infant is presented on electronic photomicrography of biopsy material. Collapse of the alveolar wall caused by the deficiency of surfactant was revealed. Dysfunction of what cells of the alveolar wall caused it?

+Alveocytes type II.

-Secretory cells.

-Alveolar macrophages.

-Fibroblasts.

-Alveocytes type I.

?

A boxer has disturbance in smell after a trauma of the nose. The damage of what cells may cause the loss of smell?

+Neurosensory.

-Supporting epithelial cells.

-Basal epithelial cells.

-Ciliary epithelial cells.

-Microvillous epithelial cells.

?

In lungs alveoli there are special cells, which carry out gas exchange and form the barrier between air and blood. Name these cells.

+Type I alveolocytes.

-Clara's cells.

-Alveolar macrophages.

-Type II alveolocytes.

-Microvillous epithelial cells.

?

In an electronic micrograph some structures have the form of opened vesicles, the internal surface of which is lined with simple epithelium. It contains respiratory and secretory cells. What structures are these?

+Alveoli.

-Bronchioles.

-Acini.

-Alveolar duct.

-Terminal bronchioles.

?

In the epithelium of airways there are cells with a cupola-shaped apical pole, on the surface of which microvilli are located. In the cell a welldeveloped synthetic device is detected, in the apical pole - secretory granules. What cell is this?

+Clara's.

-Goblet.

-Endocrine.

-Without bordering.

-Cambial.

?

Premature infants have a respiratory distress syndrome developed. The insufficiency of what airhematic barrier component underlies this pathology?



+Surfactant.

-Endothelium of capillaries.

-Basement membrane of endothelium.

-Basement membrane of alveolocytes.

-Alveolocytes.

?

Hyperemia and increased mucous formation in the nasal cavity of a patient with acute rhinitis are detected. The activity of what cells of mucous membrane epithelium is increased?

+Goblet.

-Ciliated.

-Microvillous.

-Basal.

-Endocrine.

?

Surfactant alveolar complex is known to be an important component of the airhematic barrier. This complex prevents alveoli from coalescence during expiration. What alveolar cells synthesize phospholipins that are used to form the complex?

+Alveolocytes of type II.

-Respiratory cells.

-Border epithelial cells.

-Alveolar macrophages.

-Endothelium of capillaries.

?

A child has inspired a button. This button was removed from the right primary bronchus with the help of a bronchoscope. What bronchial epithelium is the most likely to be damaged by the foreign body?

+Simple pseudostratified ciliated.

-Stratified non-keratinized.

-Simple low-columnar.

-Transitional.

-Simple squamous.

?

A lung of a premature infant is presented on electronic photomicrography of biopsy material. Collapse of the alveolar wall caused by the deficiency of surfactant was revealed. Disfunction of what cells of the alveolar wall caused it?

+Alveolar macrophages.

-Secretory cells.

-Alveocytes type II.

-Alveocytes type I.

-Fibroblasts.

?

After breathing with poisonous steams there is an increased quantity of slime in respiratory passages of a chemical production worker. What of respiratory tract epithelial cells participate in mucosa moistening?

+Langerhans cells.

-Endocrine cells.

-Fibroblasts.

-Intercalated.

-Goblet cells.

?

A 66-year-old man has a malignant epithelial tumor originating from a bronchus of medium calibre diagnosed. What epithelium is a source of this tumor development?

+Simple pseudostratified ciliated.

-Stratified non-keratinized.

-Stratified keratinized.

-Simple pseudostratified transitional.

-Simple columnar.

?

A benign epithelial tumor of trachea of a 56-year-old man is diagnosed. What epithelium is a source of this tumor development?

+Simple pseudostratified ciliated.

-Stratified non-keratinized.

-Stratified keratinized.

-Simple pseudostratified transitional.

-Simple columnar.

?

A benign epithelial tumor of visceral pleura of the right lung superior lobe of a 48-year-old man is diagnosed. What epithelium is a source of this tumor development?

+Simple squamous.

-Stratified non-keratinized.

-Simple pseudostratified ciliated.

-Transitional.

-Stratified keratinized.

?

A pathological process in bronchi resulted in epithelium desquamation. What cells will regenerate bronchial epithelium?

+Basal.

-Ciliate.

-Intercalary.

-Endocrinal.

-Goblet.

?

Electronic microphotography of pulmonary alveole's wall presents a big cell. Its cytoplasm has a lot of mitochondria, developed Golgi apparatus, osmiophil lamellated corpuscles. What is the main function of this cell?

+It produces surfactant.

-It absorbs microorganisms.

-It warms the air.

-It purifies the air.

-It is a component of blood-air barrier.

?

A patient was admitted to the hospital with an asphyxia attack provoked by a spasm of smooth muscles of the respiratory tracts. This attack was mainly caused by alterations in the following parts of the airways:

+Small bronchi.

-Respiratory part.

-Large bronchi.

-Median bronchi.

-Terminal bronchioles.

?

In a palatine tonsil histological specimen crypts are detected. Their epithelium is infiltrated by leukocytes. What epithelium is a part of this structure?

+Pseudostratified ciliated.

-Simple columnar.

-Stratified squamous non-keratinized.

-Stratified squamous keratinized.

-Stratified cuboidal.

?

Kidneys of a man under examination show increased resorption of calcium ions and decreased resorption of phosphate ions. What hormone causes this phenomenon?

+Parathormone.

-Thyrocalcitonin.

-Hormonal form D3.

-Aldosterone.

-Vasopressin.

?

Pyeloureterography X-ray photo showed a renal pelvis with minor calyces only (major calyces were absent). What form of urinary tracts of a kidney was revealed?

+Embryonal.

-Ampullar.

-Fetal.

-Mature.

?

The low specific gravity of the secondary urine (1002) was found out in the sick person. What is the most distant part of nephron where concentration of secondary urine takes place?

- +In the collecting duct.
- In the nephron's glomerulus.
- In proximal tubule of nephron.
- In ascending part of loop of Henle.
- In distal tubule of nephron.

?

A histological specimen of a kidney shows a part of the distal tubule going between the afferent and efferent arteriole. The cells building the tubule wall have dense nuclei; basal membrane is absent. Such structural formation is called:

- +Macula densa.
- Juxtavascular cells.
- Mesangial cells.
- Juxtaglomerular cells.

?

In a specimen a dense network of capillaries located between two arterioles (rete mirabile) can be clearly seen. In what organ is it possible to find this network?

- +Kidney.
- Liver.
- Adrenal gland.
- Spleen.
- Retina.

?

Normally, during a laboratory examination of urine blood elements are not detected in it. What nephron structure interferes with their getting into primary urine?

- +Basement membrane of glomerular capillaries.
- Juxtavascular cells.
- Mesangial cells.
- Epithelium of the external leaf of glomerular capsule.

-Epithelium of Henle's loop.

?

Laboratory examination has shown subacid reaction of urine. What kidneys cells provide this reaction of urine?

+Secretory cells of gathering tubules.

-Juxtaglomerular cells of cortical nephrons.

-Juxtavascular cells of cortical nephrons.

-Cells of the dense macula of juxtaglomerular complex.

-Interstitial cells of stroma.

?

In a kidney specimen nephrons are detected on the border of cortical and medullary substance with identical diameter of afferent and efferent arterioles. What function will be damaged in case of their affection?

+Shunting of blood accompanied by intensive blood circulation.

-Synthesis of renin.

-Synthesis of prostaglandins.

-Synthesis of erythropoietin.

-Activity of sodium (Na<sup>+</sup>) receptor.

?

An electron micrograph of a kidney fragment presents an afferent arteriole. Under its endothelium some big cells can be seen that contain secretory granules. What type of cells is it?

+Juxtaglomerular.

-Interstitial.

-Mesangial.

-Juxtavascular.

-Smooth muscle cells.

?

In an electronic micrograph of a nephron part there are detected cells of cubic form, the apical surface of which contains brush border, and the basal - basal banding with mitochondria between invaginations of cytolemma. Name the department of nephron.

+Proximal tubule.

-Gathering tubule.

-Distal tubule.

-Thin tubule.

-Capsule of the glomerule.

?

Kidney endocrine complex cells are located under endothelium in the wall of afferent and efferent arterioles; in the cytoplasm these cells contain granules of renin, which assists the rise of blood pressure. What cells are these?

+Juxtaglomerular cells.

-Macula cells.

-Dense macula cells.

-Mesangial cells.

-Interstitial cells.

?

In urine analysis epithelial cells of the thin tubule of nephron are detected. With what epithelium is the wall of this nephron tubule covered?

+Simple squamous.

-Cuboidal.

-Cuboidal ciliated.

-Columnar.

-Columnar ciliated.

?

In a kidney histological specimen there has been presented a site of a distal tubule of nephron located between afferent and efferent arterioles. In the cells, which form the tubule wall, nuclei are thickened, basic membrane is absent. Name this structural formation.

+Dense macula cells.

-Macula cells.

-Mesangial cells.

-Juxtavascular cells.

-Juxtaglomerular cells.

?

Anlage of metanephros occurs during the second month of embryogenesis. What are the sources of its formation?

+Mesonephrogenic duct diverticulum, metanephrogenic tissue.

-Segment peduncles, nephrogenic tissue.

-Nephrogenic tissue.

-Mesonephrogenic duct.

-Segment peduncles.

?

Clinical examination of a 35-year-old female with renal disease has detected in the urine blood cells, fibrinogen, probably because of renal filter failure. Of what structures is this filter formed?

+Endothelium of glomerular capillaries, trilaminar basic membrane, podocytes.

-Trilaminar basic membrane.

-Endothelium of capillaries, basic membrane.

-Podocytes, basic membrane.

-Endothelium, podocytes.

?

Electron microscopy of a kidney has detected tubules lined with cuboidal epithelium. There are light and dark cells in the epithelium. Light cells have few organelles, cytoplasm forms folds. These cells provide reabsorption of water from primary urine into blood. Dark cells resemble parietal cells of stomach by structure and function. What tubules are presented?

+Connecting tubules.

-Proximal tubules.

-Distal tubules.

-Ascending tubules of Henle's loop.

-Descending tubules of Henle's loop.

?

Leached erythrocytes have been detected in a patient's urine analysis. What is the localization of the pathological process predetermining such changes?

+Filtration barrier.

-Proximal part of nephron.

-Gathering tubules.



-Distal part of nephron.

-Thin part of nephron.

?

Sugar is detected in the urine of a 30-year-old patient, its amount in blood being normal. What structure functional mechanisms of the kidney are violated?

+Reabsorption process in the proximal part of nephron.

-Filtration process.

-Reabsorption process in the distal part of nephron.

-Reabsorption process in the thin tubule.

-Reabsorption process in the distal part as a result of vasopressin secretion insufficiency.

?

Insufficient quantity of spermatozoa is detected during a seminal fluid analysis of a 25-year-old patient. What cells of male sex glands, dividing, provide a sufficient quantity of spermatozoa for fertilization?

+Spermatogones.

-Sustentocytes.

-Sustentacular cells.

-Sertoli cells.

-Leidig cells.

?

During pubescence the cells of male sexual glands begin to produce male sex hormone testosterone that calls forth secondary sexual characters. What cells of male sexual glands produce this hormone.

+Leidig cells.

-Supporting cells.

-Sustentocytes.

-Spermatozoa.

-Sertoli's cells.

?

Patient complains of frequent and difficult urination. Imperfection of what formation can cause it?

+Prostate.

-Bulb-uretic glands.

-Testicles.

-Testicle adnexa.

-Sperm bulbes.

?

A family couple complains of being infertile. Examination revealed that the man's spermatogenic epithelium of testicle has been affected, that led to the absence of spermatozoa in seminal fluid, and consequently to barrenness. What part of testicle has been damaged?

+Convolutated seminiferous tubules.

-Straight seminiferous tubules.

-Rete testis.

-Duct of epididymis.

-Efferent duct of testicle.

?

As a result of a mechanical injury of scrotum a patient has disorders of the network of testis epithelial lining. What epithelium is damaged?

+Simple cuboidal.

-Ciliated.

-Simple columnar.

-Double layer.

-Transitional.

?

The changes of nucleus and cytoplasm of spermatids are observed during one of the phases of spermatogenesis. These changes predetermine the formation of mature sex cells. What gametogenesis phase is meant?

+Formation.

-Maturation.

-Growth.

-Reproduction.

-Proliferation.

?

Anovular menstrual cycle of a female patient is detected. What process from the listed below does not take place?

+Rupture of follicle and outlet of ovocyte into abdominal cavity.

-Reconstruction of follicle after ovocyte's death.

-Reproduction of granular layer cells.

-Accumulation of lutein in follicular cells.

-Decrease of mature follicle volume.

?

Examination of an ovary specimen stained by hematoxylin-eosine revealed a follicle in which follicular epithelium consisted of 1-2 layers of cubic cells. There was also a bright red membrane around the ovocyt What follicle is it?

+Primary.

-Mature.

-Secondary.

-Atretic.

-Primordial.

?

The secretion of which hypophysial hormones will be inhibited after taking the oral contraceptives containing sex hormones?

+Gonadotropic hormone.

-Thyrotrophic hormone.

-Vasopressin.

-Ocytocin.

-Somatotrophic hormone.

?

Atretic bodies and developed yellow body are detected in an ovary specimen next to follicles of different order. To what phase of ovarian-menstrual cycle does such condition correspond?

+Premenstrual.

-Menstrual.

-Postmenstrual.

-Regenerative.

-Follicle growth.

?

Normal implantation of a human embryo is possible only in case of appropriate changes of endometrium. What cells of endometrium increase quantitatively in this case?

+Decidual cells.

-Fibroblasts.

-Neurons.

-Macrophages.

-Myocytes.

?

In a woman's blood a large quantity of estrogens has been found. What cells synthesize the basic quantity of estrogens?

+Interstitial and follicular cells of secondary follicles.

-Ovocytes.

-Follicular cells of primary follicles.

-Follicular cells of the primordial follicles.

-Follicular cells and ovocytes.

?

A female patient presents with endocrine dysfunction of follicular cells of the ovarian follicles resulting from an inflammation. The synthesis of the following hormone will be inhibited:

+Estrogen.

-Follistatine.

-Lutropin.

-Follicle stimulating hormone.

?

Low estrogens concentration and high concentration of progesterone are detected in the blood test of a nonpregnant 26-year-old woman. At what ovarian-menstrual cycle phase was the test done?

+Premenstrual (secretory).

-Menstrual.

-Postmenstrual (proliferative).

-Phase of desquamation.

-Phase of endometrium proliferation.

?

A patient was diagnosed with Bartholinitis (inflammation of greater vulvovaginal glands). In which organ of urogenital system are these glands localized?

+Large lips of pudendum.

-Small lips of pudendum.

-Uterus.

-Vagina.

-Clitoris.

?

The bleeding stop following a delivery is connected with the action of oxytocin on the wall of uterus. What tunica of the organ reacts to this action?

+Myometrium.

-Endometrium.

-Perimetrium.

-Parametrium.

-Submucous layer.

?

A bleeding after a delivery may be stopped by hormones action on uterus structures. One component of uterus wall takes part in this process more than others. Name this component.

+Myometrium middle layer.

-Endometrium.

-Myometrium internal layer.

-Myometrium superficial layer.

-Perimetrium.

?

Histopathologic feature of endometrium has such typical signs: thickening, edema, sinuous glands with dilated lumen which secrete a big amount of mucus; mitoses in cells are not observed; there are decidual cells in stroma. What stage of menstrual cycle is described?

+Secretory (premenstrual).

- Menstrual.
- Regenerative.
- Proliferative.
- Relative rest.

?

Microscopic examination of endometrium biopsy material of a woman suffering from infertility has shown changes in endometrium construction caused by the influence of progesterone. Where is this hormone produced?

- +In corpus luteum of ovary.
- In follicles of ovary.
- In adenohypophysis.
- In neurohypophysis.
- In hypothalamus.

?

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

- +Triiodothyronine.
- Thyrocalcitonin.
- Glucagon.
- Aldosterone.
- Somatostatin.

?

After a case of sepsis a 27-year-old woman developed "bronzed" skin discoloration characteristic of Addison's disease. Hyperpigmentation mechanism in this case is based on increased secretion of:

- +Melanocyte-stimulating hormone
- Somatotropin.
- Gonadotropin.
- ?-lipotropin.
- Thyroid-stimulating hormone.

?

Protective function of saliva is based on several mechanisms, including the presence of enzyme that has bactericidal action and causes lysis of complex capsular polysaccharides of staphylococci and streptococci. Name this enzyme:

+Lysozyme.

-?-amylase.

-Oligo-1,6-glucosidase.

-Collagenase.

-?-glucuronidase.

?

An 18-year-old student presents with enlarged thyroid gland accompanied by accelerated metabolism and increased heart rate. These signs can be observed during hypersecretion of thyroxin. What organelles of thyroid cells are primarily responsible for hormone production and secretion?

+Golgi apparatus.

-Mitochondria.

-Ribosomes.

-Centrosomes.

-Lysosomes.

?

Microscopy of the puncture sample obtained from the inflammation focus of the patient with cutaneous abscess revealed numerous blood cells of different types. What cells are the first to transfer from vessels to tissues during inflammation?

+Neutrophils.

-Monocytes.

-Basocytes.

-Eosinophils.

-Lymphocytes

?

During the first year of life an infant presents with disturbed process of breast milk curdling. What cells of the proper gastric glands are functionally disturbed?

+Main exocrinocytes.

-Parietal exocrinocytes.

-Cervical mucous cells.

-Accessory mucous cells.

-Exocrinocytes.

?

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

+Antigen stimulation.

-Acquired deficiency of lymphoid tissue.

-Congenital deficiency of lymphoid tissue.

-Neoplastic aberration.

-Transplant rejection.

?

Due to prolonged stay in the mountains at the altitude of 3000 m above the sea level, a person developed increased oxygen capacity of blood, which was directly caused by intensified production of:

+Erythropoietins.

-Leukopoietins.

-Carbaminohemoglobin.

-Catecholamines.

-2,3-bisphosphoglycerate.

?

A microslide of the lung tissue sample taken from a patient with pneumonia shows damage to the cells that carry out respiratory function. What cells of the alveolar wall are damaged?

+Type 2 alveolar cells.

-Type 1 alveolar cells.

-Macrophages.

-Club cells.

-Lymphocytes.

?



Atria of a test animal were superdistended with blood, which resulted in decreased reabsorption of Na<sup>+</sup> and water in renal tubules. This can be explained by the effect of the following factor on the kidneys:

+Natriuretic hormone.

-Aldosterone.

-Renin.

-Angiotensin.

-Vasopressin.

?

A patient with clinical signs of a primary immunodeficiency has functionally disturbed mechanism of antigen-presentation to the immunocompetent cells. What cells are likely to have structural defects?

+Macrophages, monocytes

-T-lymphocyte.

-B-lymphocyte.

-Fibroblasts.

-O-lymphocytes.

?

The dorsal root of the spinal nerve of a test animal was severed. What changes will occur in the innervation area?

+Loss of sensitivity.

-Loss of motor function.

-Decreased muscle tone.

-Increased muscle tone.

-Loss of sensitivity and motor function.

?

A microslide of the skin sample taken from the finger of a child shows that epidermis is insufficiently developed. What germ layer was damaged in the process of embryo development?

+Ectoderm.

-Mesoderm.

-Endoderm.

-Mesenchyme.

-Ectomesenchyme.

?

During intensive physical exertion, one of the energy sources for the working muscles is glucose produced as the result of gluconeogenesis. This process is the most intensive in the following organ:

+Liver.

-Brain.

-Lungs.

-Muscles.

-Stomach.

?

Vestibular receptors of semicircular canals of a test animal have been destroyed. What reflexes will disappear as a result?

+Statokinetic reflex during movements with angular acceleration.

-Statokinetic reflex during movements with linear acceleration.

-Head-righting reflex.

-Body-righting reflex.

-Primary orienting reflex.

?

A hospital has received a 24-year-old man, who had received a penetrating wound to the eye, which has caused the vitreous body to run out. As the result of this, retinal detachment occurred. What retinal layer was tightly adherent to the vascular tunic of the eye and did not detach?

+Retinal pigment epithelium.

-Layer of rods and cones.

-Ganglion cell layer.

-Outer nuclear layer.

-Inner nuclear layer.

?

A patient has undergone surgical removal of the pylorus. Decreased secretion of the following hormone can be expected:

+Gastrin.

-Histamine.

-Secretin.

-Cholecystokinin.

-Gastric inhibitory polypeptide.

?

A 19-year-old young man was examined in the nephrology clinic. High calcium was detected in his secondary urine. What hormone is likely to cause such change, if it is produced in excess?

+Aldosterone.

-Oxytocin.

-Adrenaline.

-Glucagon.

-Testosterone.

?

Parenchyma of an organ is composed of pseudounipolar neurons localized under the capsule of connective tissue. Central place belongs to nerve fibers. Name this organ:

+Spinal ganglion.

-Sympathetic ganglion.

-Intramural ganglion.

-Nerve trunk.

-Spinal cord.

?

Genetic recombination is achieved via several mechanisms. One such mechanism is crossingover. It occurs at the following stage of prophase in the first meiotic division:

+Pachynema.

-Leptonema.

-Zygonema.

-Diplonema.

-Diakinesis.

?

In the life cycle of a cell during mitosis a natural change in the amount of genetic material occurs. The DNA doubles at the following stage:

+Interphase.

-Prophase.

-Metaphase.

-Anaphase.

-Telophase.

?

A 30-year-old woman first developed pain, swelling, and skin redness in the area of joints about a year ago. Provisional diagnosis is rheumatoid arthritis. One of the likely causes of this disease is change in the structure of the following connective tissue protein:

+Collagen.

-Mucin.

-Myosin.

-Ovalbumin.

-Troponin.

?

Histological specimen of the ovary shows large hollow structures. Primary oocyte within these structures is surrounded with transparent membrane and radiating crown and is situated in the cumulus oophorus, the wall is made of follicular cell layer and theca. What ovarian structure can be characterized by these morphological features?

+Mature (tertiary) follicle.

-Primordial follicle.

-Primary follicle.

-Corpus luteum.

-Corpus atreticum.

?

Histological specimen demonstrates a parenchymal organ with cortical and medullary substances. The cortical substance is composed of bands of epithelial cells with capillary blood vessels between them. The bands form three zones. The medullary substance consists of chromaffin cells and venous sinusoids. What organ can be characterized by these morphological features?

+Adrenal gland.

-Kidney.

-Lymph node.

-Thymus.

-Thyroid gland.

?

Investigation of an isolated cardiac myocyte determined that it does not generate excitation impulses automatically, which means this cardiac myocyte was obtained from the following cardiac structure:

+Ventricles.

-Sinoatrial node.

-Atrioventricular node.

-His' bundle.

-Purkinje's fibers.

?

Students study the stages of gametogenesis. They analyze a cell with haploid number of chromosomes, with each chromosome consisting of two chromatids. The chromosomes are located in the equatorial plane of the cell. Such situation is typical of the following stage of meiosis:

+Metaphase of the second division.

-Metaphase of the first division.

-Anaphase of the first division.

-Anaphase of the second division.

-Prophase of the first division.

?

A histological specimen shows significant amount of mucous connective tissue (Wharton's jelly), vessels, as well as residual yolk and allantois. Name this organ:

+Umbilical cord.

-Esophagus.

-Ureter.

-Urethra.

-Vermiform appendix.

?

Ionizing radiation or vitamin E deficiency affect the cell by increasing lysosome membrane permeability. What are the possible consequences of this pathology?

- +Partial or complete cell destruction.
- Intensive protein synthesis.
- Intensive energy production.
- Restoration of cytoplasmic membrane.
- Formation of maturation spindle.