

№	krok 2007
Topic	cytology
Task	Microscopic analysis of human heart cells revealed some oval organelles, their tunic being formed by two membranes: the external one is smooth, and the internal one forms crista. Biochemical analysis determined the presence of ATPsynthetase enzyme. What organelles were analysed?
Correct answer	Mitochondrions
B	Lysosomes
C	Ribosomes
D	Endoplasmic reticulum
E	Centrosomes
№	krok 2007
Topic	embryology
Task	Examination of a pregnant woman who has been taking alcohol revealed iturbed anlage of ectoderma during the fetal life. What derivatives of this leaf have defects?
Correct answer	Neural tube
B	Kidneys
C	Bowels epithelium
D	Liver
E	Sexual glands
№	krok 2007
Topic	nervous system
Task	A patient had a trauma that led to the injury of front spinal roots. Denote the damaged structures:
Correct answer	Axons of motoneurons and lateral horn neurons
B	Central processes of spinal ganglion neurons
C	Peripheral processes of spinal ganglion neurons
D	Axons of lateral horn neurons
E	Axons of motoneurons
№	krok 2007
Topic	respiratory system
Task	A patient with an acute rhinitis has hyperemia and excessive mucus formation in nasal cavity. What epithelial cells of mucous membrane have the intensified activity?

Correct answer	Goblet cells
B	Ciliated cells
C	Microvillous cells
D	Basal cells
E	Endocrine cells
№	krok 2007
Topic	cardiovascular system
Task	Morphological examination revealed in histological specimen of biopsy material an irregular-shaped vessel. Its middle membrane is formed by bundles of smooth myocytes and layers of connective tissue. What type of vessel is it?
Correct answer	Vein of muscular type
B	Artery of muscular type
C	Lymphatic vessel
D	Venule
E	Arteriole
№	krok 2007
Topic	cytology
Task	An electronic micrograph presents a cell that has no nucleole and nuclear membrane. Chromosomes have free position, centrioles migrate to the poles. What phase of cell cycle is it typical for?
Correct answer	Prophase
B	Anaphase
C	Metaphase
D	Telophase
E	Interphase
№	krok 2007
Topic	bone tissue
Task	The symptoms of regeneration process (callus) on the place of fracture were revealed in the histologic specimen of tubular bone. What tissue forms this structure?
Correct answer	Fibrous bone tissue
B	Loose connective tissue
C	Reticular tissue
D	Epithelial tissue

E	Lamellar bone tissue
№	krok 2007
Topic	connective tissue
Task	A chemical burn of esophagus caused it's local constriction as a result of scar formation. What cells of loose connective tissue take part in scar formation?
Correct answer	Mature specialized fibroblasts
B	Immature nonspecialized fibroblasts
C	Fibrocytes
D	Miofibroblasts
E	Fibroclasts
№	krok 2007
Topic	female reproductive system
Task	A woman has hyperemic ovary, increased permeability of hematofollicular barrier with the following development of edema, infiltration of follicle wall by segmentonuclear leukocytes. The follicle volume is large, its wall is thinneWhat period of sexual cycle do these presentations correspond with?
Correct answer	Preovulatory stage
B	Ovulation
C	Menstrual period
D	Postmenstrual period
E	Period of relative rest
№	krok 2007
Topic	respiratory system
Task	Premature infants have syndrome of respiratory failure. Failure of what aerohematic barriere component underlies this pathology?
Correct answer	Surfactant
B	Capillary endothelium
C	Basal membrane of endothelium
D	Basal membrane of alveolocytes
E	Alveolocytes
№	krok 2007
Topic	digestive system

Task	Histological examination in the area of neck of fundus gland reveals small cells that have high nuclear-cytoplasmatic ratio and basophilic cytoplasm. Name the function of these cells:
Correct answer	Regeneration of glandular epithelium
B	Protective
C	Endocrine
D	Secretion of chlorine ions
E	Pepsinogen secretion
№	krok 2007
Topic	teeth and tooth development
Task	Histological examination of trasverse enamel slice revealed linear banding in form of concentric circles that is pointing at an angle to the dentinoenamel junction. Name these structures:
Correct answer	Retsius' lines
B	Hunter-Schreger's lines
C	Enamel plates
D	Enamel fascicles
E	Enamel spindles
№	krok 2007
Topic	embryology
Task	Microspecimen of a child'sfinger skin reveals subnormal development of epidermis. What embryonic leaf was damaged in course of development?
Correct answer	Ectoderm
B	Mesoderm
C	Entoderm
D	Mesenchyma
E	Ectomesenchyma
№	krok 2007
Topic	organs of hematopoiesis
Task	The influence of negative factors upon an organism results in the thymus change that is accompanied by mass loss of thymocytes, their drive out to the peripheral organs, proliferation of epithelioreticulocytes. How is this phenomemon called?
Correct answer	Accidental thymus involution
B	Age thymus involution

C	Thymus hypotrophy
D	Thymus dystrophy
E	Thymus atrophy
№	krok 2007
Topic	oral cavity
Task	Histological specimen of an oral cavity organ shows that anterior surface is lined with multilayerflat non-keratinizing epithelium and posterior surface - with multirow ciliated epithelium. What organ is it?
Correct answer	Soft palate
B	Gum
C	Hard palate
D	Lip
E	Cheek
№	krok 2007, 2008, 2010
Topic	teeth and tooth development
Task	Examination of a 42 year old patient who suffers from parodontosis revealed roundish calcified formations 2-3 mm in diameter in coronal pulp. Name these formations:
Correct answer	Denticles
B	Interglobular spaces
C	Sclerosed (transparent) dentin
D	Dead dentin
E	Intertubular dentin
№	krok 2007
Topic	urinary system
Task	Electron micrograph of a kidney fragment presents an afferent arteriole with big cells under endothelium. These cells contain secretory granules. Name this type of cells:
Correct answer	Juxtglomerular
B	Mesangial
C	Smooth muscular
D	Juxtavasular
E	Interstitial
№	krok 2007

Topic	oral cavity
Task	A child damaged the lateral surface of his tongue. What lingual papillas are most likely to be damaged?
Correct answer	Foliate
B	Conic
C	Vallate
D	Filiform
E	Fungiform
№	krok 2007
Topic	urinary system
Task	In a histological specimen of adrenal cortex there are petite polygonal cells that form roundish clusters and contain some lipidic inclusions. What part of adrenal is presented in this histological specimen?
Correct answer	Glomerular zone
B	Intermedial zone
C	Fasciolar zone
D	Reticular zone
E	-
№	krok 2007
Topic	embryology
Task	Implantation process has two stages: adhesion and invasion. Morphological manifestation of blastocyte adhesion is:
Correct answer	Attachment of blastocyte to the endometrium
B	Destruction of endometrium epithelium
C	Destruction of connective tissue of endometrium
D	Destruction of endometrium vessels
E	Formation of lacunes
№	krok 2007
Topic	blood
Task	A man lost consciousness in a car with running engine where he had been waiting for a friend for a long time. What hemoglobin compaund can be found in the blood of the patient?
Correct answer	Carboxyhemoglobin
B	Deoxyhemoglobin
C	Carbhemoglobin

D	Methemoglobin
E	Oxyhemoglobin
№	krok 2007, 2008
Topic	salivary glands
Task	What substance makes saliva viscous and mucous, has protective function, protects mucous membrane of oral cavity from mechanical damage?
Correct answer	Mucin
B	Glucose
C	Kallikrein
D	Amylase
E	Lysozyme
№	krok 2008, 2010, 2012
Topic	female reproductive system
Task	A 35 y.o. patient diagnosed with sterility came to gynaecological department for diagnostic biopsy of endometrium. Microscopic examination revealed that mucous membrane is edematous, uterine glands are convoluted and filled with thick secreta. Such changes in the endometrium are caused by excess of the following hormon:
Correct answer	Progesterone
B	Estrogen
C	Testosterone
D	Somatotropin
E	ACTH
№	krok 2008
Topic	bone tissue
Task	Examination of a histological specimen of tubular bone revealed signs of regeneration process (callus). What tissue is this structured formed of?
Correct answer	Rough fibrous osseous
B	Loose connective
C	Reticular
D	Epithelial
E	Lamellar osseous
№	krok 2008

Topic	organs of hematopoiesis
Task	Medullary substance of a hemopoietic organ's lobule in a histological specimen is lighter coloured and contains epithelial bodies. What organ are these morphological properties typical for?
Correct answer	Thymus
B	Lymph node
C	Spleen
D	Liver
E	Kidney
№	krok 2008
Topic	digestive system
Task	Histological examination in the area of cervix of a fundic gland reveals small cells that have high nuclear-cytoplasmic ratio and basophilic cytoplasm. What is the function of these cells?
Correct answer	Regeneration of glandular epithelium
B	Protective
C	Endocrinal
D	Secretion of chlorine ions
E	Pepsinogen secretion
№	krok 2008
Topic	blood
Task	Recovery of an organism from an infectious disease is accompanied by neutralization of antigens by specific antibodies. What cells produce them?
Correct answer	Plasmocytes
B	Fibroblasts
C	Tissue basophils
D	Eosinophils
E	T-lymphocytes
№	krok 2008
Topic	embryology
Task	During embryogenesis trophoblast develops into an organ rudiment that has endocrinal function. What rudiment is it?
Correct answer	Villous chorion
B	Amnion

C	Yolk sac
D	Allantois
E	Umbilical cord
№	krok 2008
Topic	cytology
Task	An electronic microphotography represents a cell without nucleoli and nuclear membrane. Chromosomes are loosely scattered, centrioles migrate to the poles. What phase of cell cycle is it?
Correct answer	Prophase
B	Anaphase
C	Metaphase
D	Telophase
E	Interphase
№	krok 2008
Topic	respiratory system
Task	An electronic microphotography represents a cell of neural origin that is a component of mucous membrane epithelium. Distal part of its peripheral process has a clavate thickening with 10- 12 cilia sprouting from it. What cell is it?
Correct answer	Olfactory
B	Bipolar neuron of spinal ganglion
C	Sensory epithelial cells of a gustatory organ
D	Rod cell of retina
E	Cone cell
№	krok 2008
Topic	cytology
Task	Electron microscopic study of a cell revealed roundish bubbles confined by a membrane and containing a lot of various hydrolytic enzymes. It is known that these organellas provide intracellular digestion and protective functions. These elements are:
Correct answer	Lysosomes
B	Centrosomes
C	Endoplasmic reticulum
D	Ribosomes
E	Mitochondria
№	krok 2008

Topic	urinary system
Task	A microphotography represents a fragment of cortical substance of a kidney. This fragment contains thick spot cells and juxtaglomerular cells with big secretory granules. What kidney structure is represented?
Correct answer	Juxtaglomerular apparatus
B	Renal corpuscle
C	Filtering barrier
D	Prostaglandin apparatus
E	Choroid glomus
№	krok 2008, 2012
Topic	skin
Task	An embryo has signs of disturbed process of dorsal mesoderm segmentation and somite generation. What part of skin is most likely to have developmental abnormalities?
Correct answer	Derma
B	Hair
C	Sebaceous glands
D	Epidermis
E	Sudoriferous glands
№	krok 2008
Topic	teeth and tooth development
Task	During tooth development periodontium preserves remains of embryonic epithelium (Hertwig's epithelial root sheath) that are called Malassez's epithelial rests. They can be source of cyst or tumour development in the area of tooth radix. What cells form Hertwig's epithelial root sheath?
Correct answer	Cells of enamel organ
B	Mesenchymal cells
C	Pulpocytes
D	Odontoblasts
E	Cementoblasts
№	krok 2008
Topic	cardiovascular system
Task	Liver specimen contains intralobular capillaries that have broad irregular lumen. The greatest part of the capillary has no basal membrane. What type of capillaries is it?

Correct answer	Sinusoid
B	Visceral
C	Somatic
D	Precapillaries
E	Postcapillaries
№	krok 2008
Topic	teeth and tooth development
Task	After anlage of primary teeth at the beginning of the fifth month of embryogenesis some factors disturbed growth ability of dental plate behind the mentioned anlagen. What serious consequence is possible?
Correct answer	Permanent teeth won't be anlagen
B	Formation of Hertwig's epithelial root sheath will be disturbed
C	Cervix of enamel organ won't disintegrate
D	Formation of mouth vestibule will be disturbed
E	Dentin of primary teeth won't be formed
№	krok 2008
Topic	respiratory system
Task	Study of a tubular organ revealed that its median membrane consists of solid hyaline rings. What epithelium lines mucous membrane of this organ?
Correct answer	Multinuclear prismatic ciliated
B	Monostratal prismatic glandular
C	Monostratal prismatic with a border
D	Multistratal squamous nonkeratinizing
E	Monostratal cubical
№	krok 2008
Topic	salivary glands
Task	Examination of a microspecimen made of an unknown organ revealed some acini that contained 10-15 cone cells with basophilic cytoplasm, round nucleus and well developed granular endoplasmic reticulum. An acinus is surrounded by a basal membrane with myoepithelial cells localized in its splitting. What organ is the slice made of?
Correct answer	Parotid gland
B	Pancreas
C	Lungs

D	Sublingual gland
E	Liver
№	krok 2008
Topic	teeth and tooth development
Task	Examination of a tooth slice of a 42 y.o. man revealed on the dentinalenamel border some solid linear fusiform structures as long as 1/3 of enamel depth. What structures were revealed?
Correct answer	Enamel spindles
B	Denticles
C	Enamel fascicles
D	"Dead"tracts
E	Carious damage
№	krok 2009
Topic	female reproductive system
Task	A 35 year old female patient diagnosed with infertility underwent diagnostic biopsy of endometrium. Microscopical examination revealed that its mucous membrane was edematic, uterine glands were convoluted and filled with thick secretion. Such changes of endometrium are caused by excess of the following hormone:
Correct answer	Progesterone
B	Estrogen
C	Testosterone
D	Somatotropin
E	ACTH
№	krok 2009
Topic	organs of hematopoiesis
Task	Influence of unfavourable factors upon the organism causes change of thymus accompanied by mass loss of thymocytes, their displacement to the peripheral organs, proliferation of epithelioreticulocytes. What phenomenon is it?
Correct answer	Accidental thymus involution
B	Age thymus involution
C	Thymus hypotrophy
D	Thymus dystrophy
E	Thymus atrophy
№	krok 2009

Topic	teeth and tooth development
Task	Examination of a patient revealed abnormal development of enamel. This is caused by damage of the following structural elements of dental germ:
Correct answer	Internal enamel epithelium of enamel organ
B	External enamel epithelium of enamel organ
C	Intermediate layer of enamel organ
D	Pulp of enamel organ
E	Cervix of enamel organ
№	krok 2009
Topic	oral cavity
Task	A histological specimen of an oral cavity organ demonstrates that the organ's anterior surface is lined with multilayer squamous nonkeratinous epithelium, and its posterior surface - with multiserial ciliated epithelium. What organ is it?
Correct answer	Soft palate
B	Gingiva
C	Hard palate
D	Lip
E	Cheek
№	krok 2009, 2010
Topic	embryology
Task	Examination of uterine cavity revealed an embryonated ovum that wasn't attached to the endometrium. The embryo is at the following stage of development:
Correct answer	Blastocyst
B	Zygote
C	Morula
D	Gastrula
E	Neurula
№	krok 2009
Topic	bone tissue
Task	A histological specimen presents the tissue that contains cells having no processes and a few tens of nuclei each. One of cell surfaces has a corrugated zone that provides secretion of hydrolytic elements. What tissue is it?
Correct answer	Osseous tissue

B	Cartilaginous tissue
C	Epithelial tissue
D	Nerve tissue
E	Muscular tissue
№	krok 2009
Topic	endocrine system
Task	Microscopic study of an endocrine gland revealed that its parenchyma consisted of follicular structures. Their wall was formed by monolayer cubic epithelium, and their cavity was filled up with oxyphilic substance. What hormon is secreted by this gland?
Correct answer	Thyroxin
B	Aldosterone
C	Cortisol
D	Parathyrin
E	Oxytocin
№	krok 2009
Topic	urinary system
Task	Electron-microscope investigation of cortical substance of a kidney reveals some structures lined with prismatic epithelium that normally has brush border and deep plicae of plasmolemma in its basal part. There is a big number of mitochondrions between these plicae. These structures belong to the following part of a nephron:
Correct answer	Proximal tubule
B	Distal convoluted tubule
C	Henle's loop
D	Renal corpuscle
E	Distal straight tubule
№	krok 2009
Topic	cardiovascular system
Task	Intralobular capillaries of a liver specimen have wide irregular lumen. Basal membrane is absent in the major part of the capillary. What type of capillaries is it?
Correct answer	Sinusoid
B	Visceral
C	Somatic
D	Precapillaries

E	Postcapillaries
№	krok 2009
Topic	salivary glands
Task	A microspecimen of parotid gland presents secretory acines with serous cells that synthesize mostly enzymes. According to the chemical composition classification, the parotid gland relates to the following glands:
Correct answer	Serous
B	Mucous
C	Seromucous
D	Enzymatic
E	-
№	krok 2009, 2010
Topic	connective tissue
Task	A specimen of connective tissue of derma was stained with Sudan III and hematoxylin. There are clusters of big polygonal cells that turned orange. Their nuclei are flattened and located on periphery. What tissue is it?
Correct answer	White adipose
B	Brown adipose
C	Reticular connective
D	Hyaline cartilaginous
E	Lamellar osseous
№	krok 2009
Topic	respiratory system
Task	Examination of a tubular organ revealed that its middle membrane consisted of solid hyaline rings. What epithelium lines mucous membrane of this organ?
Correct answer	Multinuclear prismatic ciliated
B	Monolayer prismatic glanduous
C	Monolayer prismatic with a limbus
D	Multilayer squamous nonkeratinous
E	Monolayer cubic
№	krok 2009
Topic	organs of hematopoiesis

Task	A histological specimen presents an organ that has both cortical and medullary substance. Cortical substance consists of an external zone that contains lymph nodules as well as of a paracortical zone. Medullary substance contains medullary cords, sinuses and trabecules. What organ possesses these morphological signs?
Correct answer	Lymph node
B	Spleen
C	Kidney
D	Thymus
E	Adrenal glands
№	krok 2009
Topic	teeth and tooth development
Task	A histological specimen presents a developed tooth that has a coating resistant to acids, but it can be found only on the lateral surfaces of the tooth. What coating is meant?
Correct answer	Cuticle
B	Dentine
C	Enamel pellicle
D	Enamel
E	Cement
№	krok 2009, 2010
Topic	nervous tissue
Task	A sensory nerve ganglion consists of roundish neurocytes with one process that divides into axon and dendrite at a certain distance from perikaryon. What are such cells called?
Correct answer	Pseudounipolar
B	Unipolar
C	Bipolar
D	Multipolar
E	Apolar
№	krok 2009
Topic	teeth and tooth development
Task	Histological study of an extirpated pulp revealed some cylindrical cells in its peripheral layer. What are these cells called?
Correct answer	Odontoblasts
B	Fibroblasts

C	Monocytes
D	Ameloblasts
E	Myofibroblasts
№	krok 2010
Topic	teeth and tooth development
Task	A histological specimen presenting a tooth slice shows that the intercellular dentin substance contains collagen fibers being tangential to the dentinoenamel junction and perpendicular to the dentinal tubules (Ebner's fibers). This dentin layer is called:
Correct answer	Parapulpal dentin
B	Mantle dentin
C	Granular layer
D	Interglobular dentin
E	Secondary dentin
№	krok 2010
Topic	blood
Task	Blood analysis of a 16-year-old girl suffering from the autoimmune inflammation of thyroid gland revealed multiple plasmatic cells. Such increase in plasmocyte number is caused by proliferation and differentiation of the following blood cells:
Correct answer	B-lymphocytes
B	T-helpers
C	Tissue basophils
D	T-killers
E	T-supressors
№	krok 2010
Topic	digestive system
Task	A patient underwent gastroscopy that revealed insufficient amount of mucus covering the mucous membrane. This phenomenon is caused by the dysfunction of the following cells of stomach wall:
Correct answer	Cells of prismatic glandular epithelium
B	Parietal cells of gastric glands
C	Principal exocrinocytes of gastric glands
D	Cervical cells of gastric glands
E	Endocrinocytes
№	krok 2010, 2011, 2012

Topic	blood
Task	During postembryonal haemopoiesis in the red bone marrow the cells of one of the cellular differons demonstrate a gradual decrease in cytoplasmic basophilia as well as an increase in oxyphilia, the nucleus is being forced out. Such morphological changes are typical for the following haemopoiesis type:
Correct answer	Erythropoiesis
B	Lymphopoiesis
C	Neutrophil cytopoiesis
D	Eosinophil cytopoiesis
E	Basophil cytopoiesis
№	krok 2010
Topic	teeth and tooth development
Task	Underdevelopment of which parts of facial skeleton in the embryonal period is the reason for such a malformation as cleft palate?
Correct answer	Palatine processes
B	Frontal processes
C	Frontal and maxillary processes
D	Mandibular processes
E	Mandibular and palatine processes
№	krok 2010
Topic	cardiovascular system
Task	Obliterating atherosclerosis causes changes in the vessels of the lower extremities. A histological specimen of such a vessel evidently presents both internal and external elastic membranes, middle membrane contains a lot of myocytes. What vessel is affected in case of this disease?
Correct answer	Artery of muscular type
B	Artery of elastic type
C	Artery of mixed type
D	Vein with strongly developed muscles
E	Lymph node
№	krok 2010
Topic	organ of vision
Task	A histological specimen of an eyeball shows a structure in form of a convexoconvex formation connected with the ciliary body by the fibers of ciliary zonule and covered with a transparent capsule. Specify this structure:

Correct answer	Crystalline lens
B	Vitreous body
C	Ciliary body
D	Cornea
E	Sclera
№	krok 2010, 2012
Topic	nervous system
Task	As a result of a trauma a patient has damaged frontal spinal roots. What structures are likely to be affected?
Correct answer	Axons of the motoneurons and axons of the lateral horn neurons
B	Central processes of the sensory neurons of the spinal ganglions
C	Peripheral processes of the sensory neurons of the spinal ganglions
D	Axons of the lateral horn neurons
E	Dendrites of the spinal ganglion neurons
№	krok 2010
Topic	salivary glads
Task	A histological specimen of a mandibular gland shows an excretory duct. Mucous membrane of the duct is lined with cubic epithelium whose cells have weakly developed organelles. What excretory duct is it?
Correct answer	Intercalated
B	Striated
C	Interlobular
D	Common excretory
E	-
№	krok 2010
Topic	epithelium
Task	A scheme shows an exocrinous gland with an unbranched excretory duct into which only one terminal part in form of a saccule opens. In compliance with the morphological classification of exocrinous glands, such gland is called as follows:
Correct answer	Simple unbranched alveolar
B	Complex branched alveolar
C	Simple branched tubular
D	Complex unbranched alveolar
E	Complex unbranched alveolar-tubular

№	krok 2010, 2011,2012
Topic	urinary system
Task	Microscopic examination of a parenchymatous organ revealed that its epithelial cords formed glomerular, fasci cular and reticular zones. The central part of the organ was presented by accumulations of chromaffin cells. Specify this organ:
Correct answer	Adrenal gland
B	Thyroid gland
C	Epiphysis
D	Liver
E	Hypophysis
№	krok 2010,2011,2012
Topic	teeth and tooth development
Task	In the process of tooth tissue histogenesis dentin wasn't formed in time for some reasons.What process of further histogenesis will be delayed or will not take place at all?
Correct answer	Enamel formation
B	Pulp formation
C	Predentinal space formation
D	Cellular cement formation
E	Acellular cement formation
№	krok 2011, 2012
Topic	CYTOLOGY
Task	Sdudying the mitotic cycle phases of an onion root the researchers revealed a cell with chromosomes lying in equatorial plane in form of a star. What phase of mitosis is it?
Correct answer	Metaphase
B	Prophase
C	Anaphase
D	Telophase
E	Interphase
№	krok 2011
Topic	embryology
Task	An embryo has a disturbed development of blood-vascular system caused by a teratogenic factor. This disturbance occurred in the following germ layer:

Correct answer	Mesoderm
B	Entoderm
C	Exoderm
D	Ento- and mesoderm
E	Ento- and ectoderm
№	krok 2011
Topic	CARTILAGE
Task	Elderly people often complain of joint pain that can be associated with age-related changes of tissue covering the joint surface. What tissue is it?
Correct answer	Hyaline cartilage
B	Bone tissue
C	Connective tissue proper
D	Epithelial
E	Elastic cartilage
№	krok 2011
Topic	Sensory Organs
Task	An electronic microphotography of a sense organ shows some hair cells with short microvilli - stereocilia - located on their apical surface and a polar kinocilium. What sense organ are these cells typical for?
Correct answer	Organ of equilibrium
B	Organ of vision
C	Olfactory organ
D	Acoustic organ
E	Gustatory organ
№	krok 2011
Topic	cartilage
Task	A patient with a serious trauma of his upper extremity has an impaired regeneration of cartilaginous tissue as a result of a damage done to poorly differentiated cells of cartilage lineage. What cells has been damaged?
Correct answer	The cells of the internal perichondrium
B	The cells of the external perichondrium
C	The cells constituting isogenic groups
D	The cells of the young cartilage

E	The cells coming from the blood vessels
№	krok 2011
Topic	Integumentary System
Task	An electronic microphotography shows epidermis with some dendritic cells among common cubic cells. These cells have a well-developed Golgi complex, a lot of ribosomes and melanosomes. These cells are called:
Correct answer	Melanocytes
B	Keratinocytes
C	Langerhans' cells
D	Merkel's cells
E	Tissue basophils
№	krok 2011
Topic	Teeth
Task	Histological study of two different tooth specimens revealed acellular and cellular cement, respectively. The second specimen comes from the following tooth part:
Correct answer	Root apex
B	Dental cervix
C	Superior subgingival part
D	Tooth crown
E	The border between root and crown
№	krok 2011
Topic	MALE REPRODUCTIVE SYSTEM
Task	A married couple complains of inability to have children. Examination revealed that the husband had his spermatogenic epithelium of a testicle damaged, which caused absence of spermatozoons in his sperm and infertility as a result. Which part of testicle was damaged?
Correct answer	Convolutated seminiferous tubules
B	Straight seminiferous tubules
C	Network of testis
D	Epididymis ducts
E	Efferent ducts
№	krok 2011
Topic	ORAL CAVITY

Task	A histological specimen of an oral cavity organ represents three zones: adipose, glandular and fibrous. Specify this organ:
Correct answer	Hard palate
B	Gum
C	Soft palate
D	Lip
E	Cheek
№	krok 2011
Topic	TEETH
Task	An embryo had its external layer of dental sacculle experimentally destroyed. What dental structure won't have any further development?
Correct answer	Periodontium
B	Enamel
C	Dentin
D	Cement
E	Pulp
№	krok 2011
Topic	URINARY SYSTEM
Task	An electronic microphotography shows a renal corpuscle with dendritic cells between the capillaries of choroid glomus. Their cytoplasm contains a large number of filaments. Specify these cells:
Correct answer	Mesangial
B	Adventitional
C	Juxtglomerular
D	Juxtavascular
E	Fibroblasts
№	krok 2011
Topic	CARDIOVASCULAR SYSTEM
Task	2012Obliterating atherosclerosis causes changes in the vessels of the lower extremities. A histological specimen of such a vessel evidently presents both internal and external elastic membranes, middle membrane contains a lot of myocytes. What vessel is affected in case of this disease?
Correct answer	Artery of muscular type
B	Artery of elastic type

C	Artery of mixed type
D	Vein with strongly developed muscles
E	Lymph node
№	krok 2011
Topic	CONNECTIVE TISSUE
Task	An inflammation is characterized by the dilatation of blood capillaries in the region of injury, reduced circulation, increased permeability of vessel walls. What cells play the main part in the development of these changes?
Correct answer	Tissue basophils
B	Fibroblasts
C	Plasmocytes
D	Eosinophils
E	Macrophages
№	krok 2011
Topic	EMBRYOLOGY
Task	A histological specimen shows an extraembryonic organ in form of a vesicle linked to the entodermal canal. Its wall is lined with epithelium, exteriorly it is made up by connective tissue. In the early stages of embryogenesis this organ has hematopoietic function. Name this organ:
Correct answer	Vitelline sac
B	Allantois
C	Amnion
D	Umbilical cord
E	Placenta
№	krok 2011
Topic	topic Cytology
Task	A cell with vitamin E deficit had been affected by ionizing radiation. This induced an intensified release of hydrolytic enzymes into the cytoplasm and thus a complete destruction of intracellular structures - autolysis. What organelles caused this phenomenon?
Correct answer	Lysosomes
B	Endoplasmic reticulum
C	Golgi complex
D	Microbodies
E	Mitochondrions

№	krok 2012
Topic	connective tissue
Task	Wound healing is accompanied by the development of a connective tissue cicatrice which is formed on the site of the tissue defect. What cells are responsible for this process?
Correct answer	Fibroblasts
B	Macrophages
C	Fibrocytes
D	Mastocytes
E	Melanocytes
№	krok 2012
Topic	digestive system
Task	An electron microphotograph of duodenal epithelium clearly shows a cell with electron-dense granules in the basal pole. What cell is it?
Correct answer	Endocrine
B	Prismatic with a limbus
C	Poorly differentiated
D	Goblet
E	Parietal
№	krok 2012
Topic	Digestive system
Task	Gastroscopy of a patient revealed lack of mucus coating the mucous membrane. This may be caused by the dysfunction of the following cells of gastric wall:
Correct answer	Cells of prismatic glandular epithelium
B	Parietal cells of gastric glands
C	Main exocrinocytes
D	Cervical cells
E	Endocrinocytes
№	krok 2012, 2015
Topic	embryology
Task	As a result of a development anomaly a newborn has malformation of major salivary glands. This anomaly is caused by the damage of the following embryonal structure:

Correct answer	Ectoderm
B	Splanchnotom
C	Somites
D	Entoderm
E	Mesenchyme
№	krok 2012
Topic	embryology
Task	Microspecimen of a child's finger skin reveals subnormal development of epidermis. What embryonic leaf was damaged in course of development?
Correct answer	Ectoderm
B	Mesoderm
C	Entoderm
D	Mesenchyma
E	Ectomesenchyma
№	krok 2012
Topic	SALIVARY GLANDS
Task	A histological specimen shows terminal secretory parts of glands made by conic cells with basophilic cytoplasm and a roundish nucleus in the centre. Specify the type of terminal secretory parts by the type of secretion:
Correct answer	Serous
B	Sebaceous
C	Combined
D	Mucous
E	Seromucous
№	krok 2012
Topic	TEETH AND TOOTH DEVELOPMENT
Task	An electron microphotograph of an enamel organ shows a prismatic cell with developed granular endoplasmatic reticulum and Golgi complex. The apical part of the cell has Tomes process containing secretory granules and small vesicles. Specify the cell:
Correct answer	Secretory active enameloblast
B	Pre-enameloblast
C	External cell of an enamel organ
D	Cell of enamel organ pulp

E	Cell of intermediate layer of enamel organ
№	krok 2012
Topic	FEMALE REPRODUCTIVE SYSTEM
Task	A histological specimen of ovary cortex shows a follicle with a large cavity. The first-order ovocyte is located in the region of cumulus oophorus, it is surrounded by transparent zone and radiate crown. Specify the type of follicle:
Correct answer	Tertiary
B	Secondary
C	Primary
D	Atertiary
E	Primordial
№	krok 2012, 2016
Topic	URINARY SYSTEM
Task	A histological specimen of kidney shows a structure consisting of a glomerulus of fenestrated capillaries and a bilayer epithelial capsule. Specify this structure:
Correct answer	Renal corpuscle
B	Proximal tubule
C	Distal tubule
D	Henle's loop
E	Receiving tube
№	krok 2013
Topic	ORAL CAVITY
Task	A histological specimen represents an organ made up of skeletal crossstriated muscle tissue. The organ has cutaneous, intermediate, and mucosal sections. The skin of the organ is stratified squamous keratinizing epithelium passing into nonkeratinizing epithelium in the mucosal section. Specify this organ:
Correct answer	Lip
B	Hard palate
C	Cheek
D	Gum
E	Tongue
№	krok 2013
Topic	TEETH AND TOOTH DEVELOPMENT

Task	During the formation of mantle dentin the synthetic activity of odontoblasts was disturbed, which will have an effect on the formation of the following fibers:
Correct answer	Radial collagen Korff's fibers
B	Tangential collagen Ebner's fibers
C	Reticular
D	Elastic
E	Nerve
№	krok 2013
Topic	TEETH AND TOOTH DEVELOPMENT
Task	Histological specimen of a decalcified tooth represents richly vascularized loose fibrous connective tissue containing a variety of cells. Pyriiform odontoblasts of this region are arranged in several rows. What kind of dental structure is it?
Correct answer	Coronal pulp
B	Root pulp
C	Periodontium
D	Mantle dentin
E	Vasodentin
№	krok 2013
Topic	EMBRYOLOGY
Task	During gastrulation the Hensen's node remained underdeveloped in the embryo. Which axial organ will slow down its development?
Correct answer	Chord
B	Neural crests
C	Neural groove
D	Neural tube
E	Mantle layer of the neural tube
№	krok 2013
Topic	ORGANS OF HEMATOPOIESIS
Task	An examination of a 26-year-old patient involved histological analysis of bone marrow punctate which revealed a significant decrease in the number of megakaryocytes. At the same time the following blood corpuscles should be decreased in number:
Correct answer	Platelets
B	Erythrocytes
C	Eosinophils

D	Neutrophils
E	B-lymphocytes
№	krok 2013
Topic	ePITHELIAL TISSUE
Task	In course of an experiment an animal had its cornea injureWhat cells will provide the regeneration of stratified epithelium?
Correct answer	Basal epithelium cells
B	Cells of proper substance of cornea
C	Cells of the prickle-cell layer of corneal epithelium
D	Basal membrane cells
E	Squamous cells
№	krok 2013
Topic	EMBRYOLOGY
Task	At a certain stage of development of a human embryo one can observe formation of a cavity in its structure, small light blastomeres on the periphery and large dark blastomeres at one of the poles. The embryo at this stage of development is called:
Correct answer	Blastocyst
B	Morula
C	Zygote
D	Gastrula
E	Blastodisk
№	krok 2013
Topic	cardiovascular system
Task	A specimen of the pia mater shows a vessel with no middle membrane in its wall, its outer membrane adheres to the surrounding tissues, the inner membrane is made up of the basal membrane and endothelium. Specify this vessel:
Correct answer	Fibrous vein
B	Muscular vein with weakly developed muscular elements
C	Muscular artery
D	Arteriola
E	Mixed artery
№	krok 2013
Topic	Female reproductive system

Task	For an unknown reason the fertilization membrane of an embryo dissolved in the fallopian tube in the first critical period. What complication of pregnancy is possible in this case?
Correct answer	Embryo implantation into the Fallopian tube
B	Embryonic death
C	Invagination of the blastocyst wall
D	Return of blastocyst back to the ampullary portion of the tube
E	Formation of two blastocysts
№	krok 2013, 2015
Topic	Female reproductive system
Task	A female patient presents with the ovarian hyperaemia, increased permeability of the blood-follicle barrier with the development of edema, infiltration of the follicle wall with segmental leukocytes. The follicle is large in volume. Its wall is thickened. What period of the sex cycle is the described situation typical for?
Correct answer	Preovulatory stage
B	Ovulation
C	Menstrual period
D	Postmenstrual period
E	Period of relative rest
№	krok 2013, 2014
Topic	BONE TISSUE
Task	Calcification of the intercellular substance of bone tissue is accompanied by the deposition of hydroxyapatite crystals along the collagen fibers. This process requires the presence of alkaline phosphatase in the intercellular substance. What cell produces this enzyme?
Correct answer	Osteoblast
B	Osteocyte
C	Osteoclast
D	Chondroblast
E	Chondrocyte
№	krok 2013
Topic	NERVE SYSTEM
Task	A patient of neurological department has a sensitivity loss caused by the damage to pseudounipolar neurocytes. Pseudounipolar neurons are a kind of bipolar neurons and the only place of their localization in the human body is:

Correct answer	Spinal ganglions
B	Retina
C	Spiral ganglion
D	Intramural vegetative ganglia
E	Thalamic tubercle
№	krok 2013
Topic	CONNECTIVE TISSUE
Task	During allergic rhinitis (inflammation of the nasal mucosa) the number of basophils in the connective tissue of the mucosa increases, which is accompanied by a tissue edema. This phenomenon is associated with the following function of tissue basophils:
Correct answer	Histamine synthesis
B	Production of intercellular substance
C	Phagocytosis
D	Antibody formation
E	Heat production
№	krok 2013
Topic	eNDOCRINE SYSTEM
Task	The aim of the morphological study was to investigate an endocrine gland with parenchyma consisting of epithelium and neural tissue. In the epithelial trabeculae the study revealed two types of cells: chromophile and chromophobe. Identify this organ:
Correct answer	Pituitary gland
B	Adrenal gland
C	Hypothalamus
D	Thyroid gland
E	Parathyroid gland
№	krok 2013, 2016
Topic	TEETH AND TOOTH DEVELOPMENT
Task	A histological specimen of mandible of an embryo shows a tooth germ with the dental papilla made up of small stellate basophilic cells. What tissue forms this part of the tooth germ?
Correct answer	Mesenchyme
B	Epithelial
C	Reticular
D	Cartilaginous

E	Osseous
№	krok 2013
Topic	topic TEETH AND TOOTH DEVELOPMENT
Task	Histological specimen of mandible shows 10 tooth buds connected to the dental plate. Which element of tooth germ will develop out of them?
Correct answer	Enamel organ
B	Dental bulb
C	Dental sac
D	Enamel spindles
E	Enamel pearls
№	krok 2013, 2014
Topic	EPITHELIAL TISSUE
Task	Histological examination of a tissue sample revealed that the tissue had no blood vessels, and the cells were packed tightly together making layers. Specify this tissue:
Correct answer	Epithelial
B	Cartilaginous
C	Osseous
D	Nervous
E	Muscular
№	krok 2013, 2015
Topic	cONNECTIVE TISSUE
Task	Histological study of a microslide of human skin found only dense irregular connective tissue. Which layer of this organ was analysed?
Correct answer	Reticular dermis
B	Papillary dermis
C	Subcutaneous adipose tissue
D	Epidermis
E	Basal layer of epidermis
№	krok 2013
Topic	uRINARY SYSTEM
Task	Analysis of biopsy material of urinary bladder mucosa revealed a tumour of epithelial origin. What kind of epithelium was the source of this tumour?

Correct answer	Stratified transitional
B	Stratified squamous nonkeratinizing
C	Simple squamous
D	Multinucleated ciliated
E	Simple cubical
№	krok 2014
Topic	ORAL CAVITY
Task	A histological specimen represents a structure of the oral cavity, which is formed by bone tissue. It is covered by mucous membrane consisting of keratinizing stratified squamous epithelium. The structure has fatty, glandular and marginal zone. In all parts of the lamina propria the collagen fibers form thick bundles that penetrate deep into the periosteum. What kind of structure is it?
Correct answer	Hard palate
B	Gingiva
C	Lip
D	Cheek
E	Tongue
№	krok 2014, 2016
Topic	TEETH AND TOOTH DEVELOPMENT
Task	Study of the histological specimen of a baby's primary tooth revealed hypoplasia (underdevelopment) of enamel. This abnormality is caused by the disruptions in the activity of the following cells:
Correct answer	Inner enamel epithelium
B	Pulp cells of the enamel organ
C	Outer enamel epithelium
D	Cells of the stratum intermedium of the enamel organ
E	Odontoblasts
№	krok 2014
Topic	TEETH AND TOOTH DEVELOPMENT
Task	In the histological specimen of a tooth germ the outer surface of the enamel organ is uneven, the cells of the inner layer show the reversal of polarity (inversion). These changes precede the beginning of the following process:
Correct answer	Amelogenesis
B	Dentinogenesis
C	Pulp genesis

D	Cementogenesis
E	Periodont development
№	krok 2014, 2016
Topic	DIGESTIVE SYSTEM
Task	Proliferation of connective tissue in the parenchyma of liver (fibrosis) caused by chronic diseases is typically accompanied by an impairment of blood circulation in the classic lobules. What is the direction of blood flow in these lobules?
Correct answer	From the periphery to the center
B	From the center to the periphery
C	Around the lobule
D	From the top to the base
E	From the base to the top
№	krok 2014
Topic	DIGESTIVE SYSTEM
Task	The effect of some harmful factors caused focal damage to the gastric epithelium. What cells are responsible for its regeneration?
Correct answer	Cervical mucocytes of glands
B	Parietal exocrinocytes of glands
C	Principal exocrinocytes of glands
D	Endocrinocytes
E	Mucocytes of the gland body
№	krok 2014, 2015
Topic	NERVOUS SYSTEM
Task	Microscopic examination of a CNS body revealed the gray matter with three layers of neurons, namely molecular, ganglionic and granular layer. What are the neurons constituting the second layer?
Correct answer	Piriform
B	Basket
C	Small stellate
D	Large stellate
E	Granule cells
№	krok 2014
Topic	FEMALE SYSTEM

Task	In a specimen from the ovary stained with hematoxylin-eosin a follicle can be seen. The follicular epithelial cells are arranged in 1-2 layers and have cubic shape, around the oocyte the bright red membrane can be seen. Specify the follicle:
Correct answer	Primary
B	Primordial
C	Secondary
D	Mature
E	Atresial
№	krok 2014
Topic	cARDIOVASCULAR SYSTEM
Task	A histological specimen represents a blood vessel. Its inner tunica is composed of endothelium, subendothelium and internal elastic lamina. The middle tunica is rich in smooth muscle cells. What vessel is characterized by these morphological features?
Correct answer	Muscular artery
B	Elastic artery
C	Capillary
D	Amuscular vein
E	Muscular vein
№	krok 2014, 2015, 2016
Topic	EPITHELIUM
Task	A 36-year-old patient consulted an ophthalmologist about eye ache. The examination revealed the erosion of the cornea, that is the lack of superficial and spinous layers of the epithelium. What cells will provide regeneration of the damaged epithelium?
Correct answer	Cells of the stratum basale
B	Cells of the stratum corneum
C	Cells of the the stratum granulosum
D	Cells of the stratum lucidum
E	Cell of the stratum superficiale
№	krok 2014
Topic	ORGANS OF HEMATOPOIESIS
Task	A histological specimen represents the parenchyma composed of lymphoid tissue which forms the diffusely arranged lymph nodules with a central artery. What anatomic formation has the given morphological structure?
Correct answer	Spleen
B	Red bone marrow

C	Thymus
D	Tonsil
E	Lymph node
№	krok 2014
Topic	SKIN AND DERIVATES
Task	A 25-year-old patient got an injury as a result of which a portion of the nail plate was removed. What structures will be responsible for its restoration?
Correct answer	Nail matrix
B	Nail fold
C	Eponychium
D	Subungual space
E	Nail sinus
№	krok 2014
Topic	SALIVARY GLAND
Task	A histological specimen of submandibular salivary gland represents basket cells from which some processes radiate and embrace the secretory unit. Contraction of the processes of these cells helps in expelling secretions from the lumen of secretory units and moving them to the system of excretory ducts. Name these cells:
Correct answer	Myoepithelial cells
B	Serous cells
C	Mucocytes
D	Adipocytes
E	Epithelial cells
№	krok 2014
Topic	CYTOLOGY
Task	An animal had been intensively fed with carbohydrates. Histological examination of its liver revealed a significant number of glycogen granules. Glycogen relates to the following group of cell structures:
Correct answer	Trophic granules
B	Secretory granules
C	Excretory granules
D	Pigment granules
E	Special-purpose organelles

№	krok 2014
Topic	CYTOLOGY
Task	Examination of a 28-year-old patient with hepatocerebral degeneration revealed an impairment of ceruloplasmin synthesis. This defect is associated with the following organelles:
Correct answer	Granular endoplasmic reticulum
B	Smooth endoplasmic reticulum
C	Mitochondria
D	Lysosomes
E	Golgi complex
№	krok 2014
Topic	EMBRYOLOGY
Task	In the uterine cavity an embryo was found that was not attached to the endometrium. What stage of embryonal development is it?
Correct answer	Blastocyst
B	Zygote
C	Mulberry body
D	Neurula
E	Gastrula
№	krok 2014
Topic	CONNECTIVE TISSUE
Task	Loose fibrous connective tissue of salivary glands contains oval averaged sized cells which synthesize antibodies. The cells have round eccentric nucleus and "spoke-wheel" chromatin pattern made by small clumps of chromatin. What are these cells called?
Correct answer	Plasma cells
B	Adipocytes
C	Neutrophils
D	Fibroblasts
E	Macrophages
№	krok 2014, 2015, 2016
Topic	CYTOLOGY
Task	A 36-year-old patient underwent tooth extraction at a dental clinic. After two weeks the stratified squamous epithelium regenerated at this site. What organelles were involved in the restoration of the mucous membrane?
Correct answer	Ribosomes

B	Centrosomes
C	Postlysosomes
D	Smooth EPR
E	Mitochondria
№	krok 2014, 2015
Topic	RESPIRATORY SYSTEM
Task	A histological specimen represents an organ whose wall consists of the mucosa, submucosa, fibrocartilage and adventitious cartilage. The organ is lined by pseudostratified ciliary epithelium, the muscular layer of the mucosa is absent, the submucosa contains seromucous glands. Hyaline cartilage C-rings are present. What organ has the described morphological characteristics?
Correct answer	Trachea
B	Bronchiole
C	Secondary bronchus
D	Terminal bronchiole
E	Larynx
№	krok 2015
Topic	CYTOLOGY
Task	Nucleoli of nuclei have been damaged due to tissue culture nuclear irradiation. Regeneration of the following organelles becomes hampered in cytoplasm:
Correct answer	Ribosomes
B	Lysosomes
C	Endoplasmic reticulum
D	Microtubules
E	Golgi apparatus
№	krok 2015, 2016
Topic	ORGANS OF HEMATOPOIESIS
Task	A histological preparation shows organ, where lymphocytes form three types of lymphoid structures: lymph nodules, medullary cords and lymphatic sinuses. What organ is it?
Correct answer	Lymph node
B	Spleen
C	Thymus
D	Tonsil

E	Red bone marrow
№	krok 2015
Topic	DIGESTIVE SYSTEM
Task	An electron microphotograph of duodenal epithelium clearly shows a cell with electron-dense granules in the basal pole. What cell is it?
Correct answer	Endocrine
B	Prismatic with a limbus
C	Poorly differentiated
D	Goblet
E	Parietal
№	krok 2015
Topic	DIGESTIVE SYSTEM
Task	The effect of some harmful factors caused focal damage to the gastric epithelium. What cells are responsible for its regeneration?
Correct answer	Cervical mucocytes of glands
B	Parietal exocrinocytes of glands
C	Principal exocrinocytes of glands
D	Endocrinocytes
E	Mucocytes of the gland body
№	krok 2015
Topic	TEETH AND TOOTH DEVELOPMENT
Task	A histological preparation of lower jaw shows dentin being formed. Collagen fibers synthesized by odontoblasts are thin and situated perpendicular to dentinal tubules. What fibers are being produced in dentin?
Correct answer	Tangential fibers
B	Radial fibers
C	Parallel fibers
D	Sharpey's fibers
E	Perforating fibers
№	krok 2015
Topic	EMBRYOLOGY
Task	Normal implantation of human embryo is possible only if uterus endometrium undergoes certain changes, with the following type of endometrium cells increasing in number:

Correct answer	Decidual cells
B	Macrophages
C	Endotheliocytes
D	Fibroblasts
E	Neurons
№	krok 2015
Topic	CARDIOVASCULAR SYSTEM
Task	There is a large amount of effusion in the pericardial cavity of a patient with exudative pericarditis. What cells cause such a phenomenon when their functional activity is disrupted?
Correct answer	Mesotheliocytes
B	Fibroblasts
C	Working cardiac myocytes
D	Cardiac conduction cells
E	Endotheliocytes
№	krok 2015
Topic	CONNECTIVE TISSUE
Task	A 32-year-old patient has purulent wound in the lower third of forearm. Smear of purulent wound content has been made. What cells will be generally detected, if it is stained using Romanovsky-Giemsa stain?
Correct answer	Neutrophil
B	Eosinophil
C	Lymphocyte
D	Erythrocyte
E	Basocyte
№	krok 2015, 2016
Topic	NERVOUS TISSUE
Task	A histological preparation of cerebellum transverse section shows large number of multipolar neurons in the grey matter. What morphological feature allows to identify them as multipolar?
Correct answer	Number of cellular processes
B	Length of cellular processes
C	Shape of axon terminals
D	Shape of perikaryon

E	Cell size
№	krok 2015, 2016
Topic	CARTILAGE
Task	A connective tissue preparation stained with hematoxylin-eosin shows isogenous cell groups surrounded with basophilic intercellular substance. No fibrous structures detected. What type of connective tissue is it?
Correct answer	Hyaline cartilage tissue
B	Elastic cartilage tissue
C	Dense fibrous tissue
D	Loose fibrous tissue
E	Splenic bone tissue
№	krok 2015
Topic	ENDOCRINE SYSTEM
Task	A 36-year-old patient consulted demonstrates cortical and medullary substances divided with connective tissue layer. In the cortical substance parenchyma cells make up three zones: they form rounded clusters in the superficial zone, parallel strands in the middle one, and in the deep zone cell strands form net-like structure. What gland is it?
Correct answer	Adrenal
B	Thyroid
C	Hypophysis
D	Epiphysis
E	Hypothalamus
№	krok 2015
Topic	TEETH AND TOOTH DEVELOPMENT
Task	A histological preparation of multirrooted tooth reveals polygonal cells with processes in the root bifurcation area. What cells and what dental tissues are characterized by these morphologic features?
Correct answer	Cementocytes, cement
B	Odontoblasts, enamel
C	Enameloblasts, enamel
D	Fibroblasts, pulp
E	Cementocytes, dentine
№	krok 2015
Topic	DIGESTIVE SYSTEM

Task	A preparation of intestine reveals complex branching tubuloalveolar glands with their ends in submucous layer. What organ is it?
Correct answer	Duodenum
B	Jejunum
C	Ileum
D	Colon
E	Cecum
№	krok 2015
Topic	CONNECTIVE TISSUE
Task	An inflammatory process in tissues is characterised by hyperemia and edema. What leukocytes situated in connective tissue provide for vasodilatation and increased blood vessel capacity under these conditions?
Correct answer	Basocytes
B	Neutrophils
C	Eosinophils
D	T-lymphocytes
E	B-lymphocytes
№	krok 2016
Topic	TEETH AND TOOTH DEVELOPMENT
Task	On the longitudinal section of a tooth there are tubules visible in the dentin. What is inside these tubules?
Correct answer	Processes of odontoblasts
B	Processes of ameloblasts
C	Odontoblast bodies
D	Fibroblasts
E	Elastic fibers
№	krok 2016
Topic	TEETH AND TOOTH DEVELOPMENT
Task	During formation of mantle dentin in a deciduous tooth there occurred a disruption of odontoblast secretory activity. Such disruption will affect the formation of the following fibers:
Correct answer	Von Korff's radial collagen fibers
B	Reticular fibers
C	Elastic fibers
D	Ebner's tangential collagen fibers

E	Nerve fibers
№	krok 2016
Topic	CARDIOVASCULAR SYSTEM
Task	A microspecimen of heart shows rectangular cells from 50 to 120 micrometer large with central position of nucleus and developed myofibrils. The cells are connected by intercalated discs. These cells are responsible for the following function:
Correct answer	Function of heart contractions
B	Function of impulse conduction
C	Endocrine
D	Protective
E	Regeneratory
№	krok 2016
Topic	ORGANS OF HEMATOPOIESIS
Task	Histological investigation of a 40-year-old man's thymus revealed the following: decreased part of parenchymatous elements, increased part of adipose and loose connective tissues, high concentration of thymic bodies with total organ weight remaining the same. Name this phenomenon:
Correct answer	Age-related thymic involution
B	Accidental thymic involution
C	Thymic hypotrophy
D	Thymic dystrophy
E	Thymic atrophy
№	krok 2016
Topic	CARDIOVASCULAR SYSTEM
Task	A heart microslide demonstrates cells in the shape of pale chords, which have few myofibrilla, glycogen inclusions and eccentric nuclei. Name these cells:
Correct answer	Purkinje's fibers
B	Leading pacemaker cells
C	Leading transitional cells
D	Endocrine cells
E	Contractile cells
№	krok 2016
Topic	EMBRYOLOGY

Task	In the preparation of a 10-day-old human embryo there are 2 contacting sacs visible (amniotic and vitelline). Name the structure situated at the place of the contact:
Correct answer	Embryonic shield
B	Fundus of the amniotic sac
C	Fornix of the vitelline sac
D	Amniotic pedicle
E	Extraembryonic mesoderm
№	krok 2016
Topic	FEMALE SYSTEM
Task	A woman presents with ovarian hyperaemia, increased permeability of the blood-follicle barrier with development of edema, infiltration of the follicle wall with segmental leukocytes. The follicle is large in volume. Its wall is thickeneThe described situation is typical for the following period of the sex cycle:
Correct answer	Preovulatory stage
B	Ovulation
C	Menstrual period
D	Postmenstrual period
E	Period of relative rest
№	krok 2016
Topic	CYTOLOGY
Task	Cytochemical investigation has revealed high content of hydrolytic enzymes in cytoplasm. This phenomenon indicates high activity of the following organelles:
Correct answer	Lysosomes
B	Cytocentrum
C	Endoplasmic reticulum
D	Polysomes
E	Mitochondria
№	krok 2016
Topic	BLOOD
Task	A blood test was performed for a patient with allergic rhinitis. Blood smear stained after Romanowsky reveals large number of cells with the following structure: segmented nucleus consists of 2-3 segments; cytoplasm is filled with bright-pink oxyphil granularity; granules are large. Name these cells:

Correct answer	Eosinophils
B	Lymphocytes
C	Monocytes
D	Basocytes
E	Neutrophils
№	krok 2016
Topic	SKIN
Task	Histological preparation of skin demonstrates dense unformed connective tissue. What layer of this organ is formed by such tissue?
Correct answer	Reticular dermis
B	Epidermis
C	Papillary dermis
D	Hypodermis
E	Basal membrane
№	krok 2016
Topic	TEETH AND TOOTH DEVELOPMENT
Task	Specify the calcium-binding enamel protein, which plays a significant part in carious destruction of enamel, when its function is disrupted:
Correct answer	Amelogenin
B	Calmodulin
C	Osteocalcin
D	Calcitonin
E	Parotin
№	krok 2016
Topic	URINARY SYSTEM
Task	During microscopy of a renal biopsy material there are tubules revealed in the cortical substance. The tubules are approximately 60 micrometers in diameter; their wall consists of tall cuboidal epithelium with pronounced apical frame and basal folds. Name these structures:
Correct answer	Proximal tubules
B	Distal tubules
C	Capsule of renal corpuscle
D	Collection duct

E	Henle's loop
№	krok 2016
Topic	CYTOLOGY
Task	A diet must include fats. Fats perform plastic function in an organism due to their inclusion in:
Correct answer	Cell membranes
B	Cell ion channel
C	Cell ion pumps
D	Cell end-organs
E	Glycocalyx
№	krok 2016
Topic	CARDIOVASCULAR SYSTEM
Task	A patient with damaged muscles of the lower limbs has been delivered to a first-aid center. What cells enable reparative regeneration of muscle fibers and restoration of muscle function?
Correct answer	Myosatellitocytes
B	Adipocytes
C	Fibroblasts
D	Endotheliocytes
E	Plasmocytes
№	krok 2017
Topic	EMBRYOLOGY
Task	At a certain stage of human ontogenesis, physiological bond occurs between circulator systems of the mother and the 1
Correct answer	Placenta
B	Yolk sac
C	Amnion
D	Serous tunic
E	Allantois
№	krok 2017
Topic	SKIN
Task	In the skin biopsy material in the epidermis there are cells with processes and cytoplasm that contains dark brown granules. Name these cells:
Correct answer	Melanocytes

B	Intraepidermal macrophages
C	Keratinocytes
D	Merkel's cells
E	Lymphocytes
№	krok 2017
Topic	DIGESTIVE SYSTEM
Task	Gastroscopy of a patient revealed the lack of mucus in the coating of the mucous membrane. This can be caused by the dysfunction of which cells?
Correct answer	Cells of prismatic glandular epithelium
B	Parietal cells of gastric glands
C	Main exocrinocytes
D	Cervical cells
E	Endocrinocytes
№	krok 2017
Topic	NERVOUS SYSTEM
Task	Alcoholic intoxication is accompanied by disturbed motor coordination and equilibrium due to the damage caused to structural elements of the cerebellum. Functional disturbance of the following cells occurs in the first place: Histologic specimen demonstrates an oral cavity organ with mucosa covered with keratinized stratified squamous epithelium. Specify this organ or its part:
Correct answer	Pyriiform cells
B	Basket cells
C	Granule cells
D	Stellate cells
E	Fusiform cells
№	krok 2017
Topic	ORAL CAVITY
Task	Histologic specimen demonstrates an oral cavity organ with mucosa covered with keratinized stratified squamous epithelium. Specify this organ or its part:
Correct answer	Gum
B	Inferior surface of tongue
C	Labial mucosa
D	Uvula
E	Soft palate

№	krok 2017
Topic	MUSCLE TISSUE
Task	One of the coats of a hollow organ has anastomotic fibers with nuclei. The fibers consist of cells that form intercalated disks at the places of contact. What tissue forms this coat?
Correct answer	Cross-striated cardiac muscle
B	Cross-striated skeletal muscle
C	Unstriated muscle
D	Loose fibrous connective tissue
E	Dense irregular connective tissue
№	krok 2017
Topic	RESPIRATORY SYSTEM
Task	Premature babies often develop respiratory distress syndrome. This pathology is caused by the deficiency of a certain component of the blood-air barrier. Name this component:
Correct answer	Surfactant
B	Capillary endothelium
C	Endothelial basement membrane
D	Alveolar basement membrane
E	Alveolocytes
№	krok 2017
Topic	EPITHELIUM
Task	A 36-year-old patient consulted an ophthalmologist about eye ache. The examination revealed the erosion of the cornea, specifically, the lack of superficial and spinous layers of the epithelium. What cells will provide regeneration of the damaged epithelium?
Correct answer	Cells of stratum basale
B	Cells of stratum corneum
C	Cells of stratum granulosum
D	Cells of stratum lucidum
E	Cells of stratum superficiale
№	krok 2017
Topic	ORGANS OF HEMATOPEIESIS
Task	A doctor examined a patient, studied the patient's blood analyses and concluded that the peripheral organs of immunogenesis are damage What organs are the most likely to be affected?

Correct answer	Tonsils
B	Thymus
C	Kidneys
D	Red bone marrow
E	Yellow bone marrow
№	krok 2017
Topic	EMBRYOLOGY
Task	Gastrulation is the period of embryogenesis, when germinal layers are formed, resulting in three-layered structure of an embryo.
Correct answer	Delamination and immigration
B	Invagination
C	Epiboly
D	Immigration and invagination
E	Delamination and epiboly
№	krok 2017
Topic	EPITHELIUM
Task	A histological specimen shows terminal secretory parts of glands made of conical cells with basophilic cytoplasm and a roundish nucleus in the centre. Specify the type of terminal secretory parts by the type of secretion:
Correct answer	Serous
B	Sebaceous
C	Combined
D	Mucous
E	Seromucous
№	krok 2017
Topic	EPITHELIUM
Task	During investigation of skin epithelium it was determined, that it consists of several cellular layers. Epithelial cells of the external layer have no nuclei. What type of epithelium is it?
Correct answer	Keratinized stratified squamous epithelium
B	Non-keratinized stratified squamous epithelium
C	Transitional epithelium
D	Multirow ciliary epithelium

E	Multirow columnar epithelium
№	krok 2017
Topic	MALE SYSTEM
Task	Electron diffraction pattern of a spermatozoon clearly presents a sheathlike structure localized in the spermiocalypthrotheca and participating in dissolution of ovular membranes. Name this structure:
Correct answer	Acrosome
B	Centriole
C	Microtubules
D	Axoneme
E	Segmented columns
№	krok 2017
Topic	CYTOLOGY
Task	Micromanipulator was used to extract one of the two centrioles of centrosome (cell center) from hepatocyte (liver cell). What process will STOP OCCURRING in this cell?
Correct answer	Division
B	Energy exchange
C	Glycogen synthesis
D	Protein biosynthesis
E	Lipid synthesis
№	krok 2017
Topic	CYTOLOGY
Task	Cytochemical investigation revealed high content of hydrolytic enzymes in the cytoplasm. This phenomenon indicates the activity of the following organelles:
Correct answer	Lysosomes
B	Endoplasmic reticulum
C	Mitochondria
D	Polysomes
E	Cell center
№	krok 2017
Topic	EMBRYOLOGY

Task	A newborn boy has been diagnosed with hydrocephalus. Doctors consider it to be caused by teratogenic factors. What germ layers are affected by the teratogen?
Correct answer	Ectoderm
B	All embryo germ layers
C	Endoderm and mesoderm
D	Endoderm
E	Mesoderm
№	krok 2017
Topic	DIGESTIVE SYSTEM
Task	A specimen of intestine demonstrates complex branching tubuloalveolar glands with their ends embedded in the submucous layer. What organ is it?
Correct answer	Duodenum
B	Jejunum
C	Ileum
D	Colon
E	Cecum
№	krok 2017
Topic	FEMALE SYSTEM
Task	Microscopy of an oval cell, 150 micron in size, revealed the following: cytoplasm has yolk inclusions but no centrioles. Name this cell:
Correct answer	Oocyte
B	Leucocyte
C	Myocyte
D	Fibroblast
E	Macrophage
№	krok 2017
Topic	TEETH AND TOOTH DEVELOPMENT
Task	Histologic specimen of a tooth slice shows a tissue consisting of intercellular substance permeated with tubules, in which cellular processes of odontoblasts are situated. What tissue is presented in this histologic specimen?
Correct answer	Dentin
B	Enamel
C	Pulp

D	Cement
E	Periodontium
№	krok 2017
Topic	TEETH AND TOOTH DEVELOPMENT
Task	In the process of embryogenesis of dentomaxillary system there was an enamel disturbance detected. What source of tooth development is damaged in this case?
Correct answer	Oral cavity epithelium
B	Dental sacculle
C	Dental bulb
D	Mesenchyme
E	Mesoderm
№	krok 2017
Topic	EMBRYOLOGY
Task	During gastrulation an embryo proceeds from histiotrophic to hematotrophic nutrition. What provisory organ makes it possible at first?
Correct answer	Chorion
B	Trophoblast
C	Yolk sac
D	Amnion
E	Allantois
№	krok 2017
Topic	CYTOLOGY
Task	Histological investigation of renal biopsy material taken from a patient with tuberculosis has revealed chaotically located chromatin granules in the focus of caseous necrosis. These changes are the result of:
Correct answer	Karyorrhexis
B	Karyolysis
C	Karyopyknosis
D	Mitotic activity of nuclei
E	Apoptosis
№	krok 2017
Topic	ENDOCRINE SYSTEM

Task	A specimen presents an endocrine system organ covered with capsule made of connective tissue. Septa branch off from the capsule inwards and divide the organ into lobules. Each lobule consists of two cell types: neurosecretory pinealocytes (polygonal cells with processes) located in the center and gliocytes (astrocytes) located at the periphery. What organ is represented in this specimen?
Correct answer	Epiphysis
B	Pituitary gland
C	Hypothalamus
D	Thyroid gland
E	Adrenal medulla
№	krok 2017, 2016, 2015
Topic	CARTILAGE
Task	A connective tissue specimen stained with hematoxylineosin shows isogenous cell groups surrounded with basophilic intercellular substance. No fibrous structures are detected. What type of connective tissue is it?
Correct answer	Hyaline cartilage tissue
B	Elastic cartilage tissue
C	Dense fibrous tissue
D	Loose fibrous tissue
E	Splenic bone tissue
№	krok 2018
Topic	EMBRYOLOGY
Task	At a certain stage of human ontogenesis, physiological bond occurs between circulatory systems of the mother and the fetus. This function is being carried out by the following provisory organ:
Correct answer	Placenta
B	Yolk sac
C	Amnion
D	Serous tunic
E	Allantois
№	krok 2018
Topic	TEETH AND TOOTH DEVELOPMENT
Task	At the cemento-enamel junction there are non-calcified areas, through which infection often penetrates into the tooth. Name these structures:
Correct answer	Enamel tufts

B	Enamel prisms
C	Ameloblasts
D	Odontoblasts
E	Tomes' dentinal fiber
No	krok 2018
Topic	RESPIRATORY SYSTEM
Task	Microphotogram made with electron microscope shows alveolar cells that compose blood-air barrier. Name this cells:
Correct answer	Alveolar respiratory epithelial cells
B	Alveolar secretory epithelial cells
C	Alveolar macrophages
D	Clara cells (club cells)
E	Villous epithelial cells
No	krok 2018
Topic	EMBRYOLOGY
Task	During experiment, the myotome was destroyed in the rabbit fetus. This manipulation will result in malformation of the following structure:
Correct answer	Skeletal muscles
B	Axial skeleton
C	Dermal connective tissue
D	Smooth muscles
E	Serous membranes
No	krok 2018
Topic	URINARY SYSTEM
Task	Electronic microscopy of a kidney shows tubules paved with cuboidal epithelium. In the epithelium there are light and dark cells. The light cells contain few organelles; their cytoplasm forms folds. These cells provide reabsorption of water from primary urine into blood. The dark cells structurally and functionally resemble gastric parietal cells. What tubules are shown on the microslide?
Correct answer	Collecting tubules
B	Proximal tubules
C	Distal tubules
D	Ascending limb of loop of Henle
E	Descending limb of loop of Henle

№	krok 2018
Topic	DIGESTIVE SYSTEM
Task	Gastrosocopy of a patient revealed the lack of mucus in the coating of the mucous membran This can be caused by the dysfunction of the following cells of the gastric wall:
Correct answer	Cells of prismatic glandular epithelium
B	Parietal cells of gastric glands
C	Main exocrinocytes
D	Cervical cells
E	Endocrinocytes
№	krok 2018
Topic	FEMALE REPRODUCTIVE SYSTEM
Task	A slide mount of an ovary presents a rounded structure with glandular cells that contain lipid droplets. Name this structure:
Correct answer	Corpus luteum
B	Primordial ovarian follicle
C	Primary ovarian follicle
D	Mature ovarian follicle
E	Corpus albicans
№	krok 2018
Topic	SALIVARY GLANDS
Task	During acute inflammation of parotid gland, there is damage to the cells of secretory segments observe What cells are damaged in this case?
Correct answer	Serous cells, myoepithelial cells
B	Albuminous cells, serous cells, mucous cells
C	Serous cells, cells with basal striation, stellate cells
D	Seromucous cells
E	Brush-bordered epithelial cells, cells with basal striation
№	krok 2018
Topic	RESPIRATORY SYSTEM
Task	Anewbornfailedtotakehisfirst breath. Autopsy revealed that despite unobstructed airways the lungs of the newborn were unable to stretch. What is the most likely cause of this condition?
Correct answer	Absence of surfactant

B	Bronchial narrowing
C	Bronchial rupture
D	Pleural thickening
E	Alveolar enlargement
№	krok 2018
Topic	SKIN AND DERIVATES
Task	Holocrine secretion is characteristic of sebaceous glands. What structural components ensure renewal of the cells of these glands?
Correct answer	Germinative layer cells
B	Sebocytes
C	Myoepithelial cells
D	Stratified squamous epithelium of the excretory duct
E	Nonstratified cuboidal epithelium of the excretory duct
№	krok 2018
Topic	EPITHELIUM
Task	A histological specimen shows terminal secretory parts of glands made of conic cells with basophilic cytoplasm and a roundish nucleus in the centr Specify the type of terminal secretory parts by the type of secretion:
Correct answer	Serous
B	Sebaceous
C	Combined
D	Mucous
E	Seromucous
№	krok 2018
Topic	CONNECTIVE TISSUE
Task	Chronic inflammation of gingival resulted in excessive growth of connective tissue fibers. What cell elements are leading in the development of this condition?
Correct answer	Fibroblasts
B	Osteoblasts
C	Fibrocytes
D	Macrophages
E	Osteoclasts
№	krok 2018

Topic	URINARY SYSTEM
Task	Histologic specimen of renal cortex shows renal corpuscle and renal tubules. It is known that reabsorption of substances occurs in the renal tubules. What nephron tissue takes part in this process?
Correct answer	Epithelial tissue
B	Connective tissue proper
C	Reticular tissue
D	Mucous tissue
E	Cartilaginous tissue
№	krok 2018
Topic	embryology
Task	At an early embryonic developmental stage during which its cells multiply, while its general volume remains practically unchanged. What developmental stage is it?
Correct answer	Cleavage
B	Neurulation
C	Organogenesis
D	Histogenesis
E	Gastrulation
№	krok 2018
Topic	CYTOLOGY
Task	Histologic specimen of endometrium demonstrates isolated epithelial cells with chromosomes that form a "plate" located in the equatorial plane of the cell. What stage of the cell cycle is it?
Correct answer	Metaphase
B	Interphase
C	Prophase
D	Anaphase
E	Telophase
№	krok 2018
Topic	NERVOUS SYSTEM
Task	Cells of sensory spinal ganglia are a part of reflex arcs. What type of neurons are these cells?
Correct answer	Pseudounipolar
B	Multipolar

C	Bipolar
D	Unipolar
E	-
№	krok 2018
Topic	MUSCLE TISSUE
Task	A patient with damaged muscles of the lower limbs has been delivered to a firstaid center. What cells enable reparative regeneration of muscle fibers and restoration of muscle function?
Correct answer	Myosatellitocytes
B	Adipocytes
C	Fibroblasts
D	Endotheliocytes
E	Plasmocytes
№	krok 2018
Topic	TEETH AND TOOTH DEVELOPMENT
Task	On tooth section in the area of the root apex there is a tissue consisting of cells with processes surrounded by mineralized intercellular substance. Name this tissue:
Correct answer	Cellular cement
B	Reticulofibrous bone tissue
C	Mantle dentin
D	Enamel
E	Periodontium
№	krok 2019
Topic	organs of hematopoiesis and immune defense
Task	Autopsy of a 7-year-old child, who died of uncompensated congenital heart disease, revealed increase in mass and volume of the thymus. On microscopy thymus structure is normal. What pathologic process had occurred in the thymus?
Correct answer	Accidental involution
B	Thymic dysplasia
C	Congenital thymomegaly
D	Thymic agenesis
E	Thymoma
№	krok 2019

Topic	tooth
Task	Longitudinal tooth section shows a tissue that makes up the tooth basis and consists of collagen fibers, mineralized matrix, and tubules that hold dentinal fibers. This tissue develops from:
Correct answer	Peripheral part of dental papilla
B	Internal cells of enamel organ
C	External cells of enamel organ
D	Dental sacculle
E	Intermediate cells of enamel organ
№	krok 2019
Topic	urinary system
Task	Electronic microscopy of a kidney shows tubules paved with cuboidal epithelium. In the epithelium there are light and dark cells. The light cells contain few organelles; their cytoplasm forms folds. These cells provide reabsorption of water from primary urine into blood. The dark cells structurally and functionally resemble gastric parietal cells. What tubules are shown on the microslide?
Correct answer	Collecting tubules
B	Descending limb of loop of Henle
C	Ascending limb of loop of Henle
D	Distal tubules
E	Proximal tubules
№	krok 2019
Topic	connective tissue
Task	Chronic inflammation of gingiva resulted in excessive growth of connective tissue fibers. What cell elements are leading in the development of this condition?
Correct answer	Fibroblasts
B	Fibrocytes
C	Macrophages
D	Osteoclasts
E	Osteoblasts
№	krok 2019
Topic	respiratory system
Task	Microphotogram made with electron microscope shows alveolar cells that compose blood-air barrier. Name this cells:
Correct answer	Alveolar secretory epithelial cells

B	Clara cells (club cells)
C	Alveolar respiratory epithelial cells
D	Villous epithelial cells
E	Alveolar macrophages
№	krok 2019
Topic	embryology
Task	At a certain stage of human ontogenesis, physiological bond occurs between circulatory systems of the mother and the fetus. This function is being carried out by the following provisory organ:
Correct answer	Placentae
B	Allantois
C	Serous tunic
D	Yolk sac
E	Amnion
№	krok 2019
Topic	cardiovascular system
Task	A microspecimen of heart shows rectangular cells from 50 to 120 micrometer in size with central position of nucleus and developed myofibrils. The cells are connected by intercalated discs. These cells are responsible for the following function:
Correct answer	Function of heart contractions
B	Regeneratory
C	Function of impulse conduction
D	Protective
E	Endocrine
№	krok 2019
Topic	oral cavity
Task	Oral examination reveals marked reddening of mucosa at the root of the tongue. What structure is involved in the inflammatory process?
Correct answer	Lingual tonsil
B	Tonsil of torus tubaris
C	Pharyngeal tonsil
D	Veil of palate
E	Palatine tonsil

№	krok 2019
Topic	tooth
Task	At the cementoenamel junction there are non-calcified areas, through which infection often penetrates into the tooth. Name these structures:
Correct answer	Enamel tufts
B	Odontoblasts-
C	Ameloblasts
D	Tomes' dentinal fiber
E	Enamel prisms
№	krok 2019
Topic	female reproductive system
Task	A slide mount of an ovary presents a rounded structure with glandular cells that contain lipid droplets. Name this structure:
Correct answer	<i>Corpus luteum</i>
B	Primordial ovarian follicle
C	<i>Corpus albicans</i>
D	Mature ovarian follicle
E	Primary ovarian follicle
№	krok 2019
Topic	tooth
Task	On tooth section in the area of the root apex there is a tissue consisting of cells with processes surrounded by mineralized intercellular substance. Name this tissue:
Correct answer	Cellular cement
B	Mantle dentin
C	Periodontium
D	Reticulofibrous bone tissue
E	Enamel
№	krok 2019
Topic	organs of hematopoiesis and immune defense
Task	Differentiation of B-lymphocytes into plasma cells leads to synthesis of immunoglobulins that ensure specific immune response of the body. Differentiation of B-lymphocytes takes place in the following organ of immune system:
Correct answer	Tonsils

B	Thymus
C	Red bone marrow
D	Thyroid gland
E	Liver'
№	krok 2019
Topic	cytology
Task	Histologic specimen of endometrium demonstrates isolated epithelial cells with chromosomes that form a "plate" located in the equatorial plane of the cell. What stage of the cell cycle is it?
Correct answer	Metaphase
B	Interphase
C	Telophase
D	Prophase
E	Anaphase
№	krok 2019
Topic	urinary system
Task	Histologic specimen of renal cortex shows renal corpuscle and renal tubules. It is known that reabsorption of substances occurs in the renal tubules. What nephron tissue takes part in this process?
Correct answer	Epithelial tissue
B	Mucous tissue
C	Reticular tissue
D	Connective tissue proper
E	Cartilaginous tissue
№	krok 2019
Topic	cytology
Task	A histological specimen shows terminal secretory parts of glands made of conic cells with basophilic cytoplasm and a roundish nucleus in the centre. Specify the type of terminal secretory parts by the type of secretion:
Correct answer	Combined
B	Sebaceous
C	Mucous
D	Serous
E	Seromucous

№	krok 2019
Topic	oral cavity
Task	Examination of histological specimen of oral mucosa reveals non-keratinized stratified squamous epithelium with lymphocyte infiltrations. What structure of oral cavity is the most likely to be represented by this mucosa specimen?
Correct answer	Tonsil
B	Gums
C	Hard palate
D	Lip
E	Cheek
№	krok 2019
Topic	nervous system
Task	Cells of sensory spinal ganglions are a part of reflex arches. What type of neurons are these cells?
Correct answer	Pseudounipolar
B	Unipolar
C	Bipolar
D	-
E	Multipolar
№	krok 2019
Topic	urinary system
Task	A woman presents with edemas. In her urine there is a large amount of protein excreted. What nephron segment is functionally disturbed in this case?
Correct answer	Proximal convoluted tubule
B	Ascending limb of loop of Henle
C	Descending limb of loop of Henle
D	Distal convoluted tubule
E	Renal corpuscle
№	krok 2019
Topic	embryology
Task	During experiment, the myotome was destroyed in the rabbit fetus. This manipulation will result in malformation of the following structure:
Correct answer	Skeletal muscles

B	Serous membranes
C	Smooth muscles
D	Axial skeleton
E	Dermal connective tissue
№	krok 2019
Topic	cytology
Task	Gastroscopy of a patient revealed the lack of mucus in the coating of the mucous membrane. This can be caused by the dysfunction of the following cells of the gastric wall:
Correct answer	Cells of prismatic glandular epithelium
B	Endocrinocytes
C	Parietal cells of gastric glands
D	Cervical cells
E	Main exocrinocytes
№	krok 2019
Topic	embryology
Task	A lancelet embryo is at the developmental stage during which its cells multiply, while its general volume remains practically unchanged. What developmental stage is it?
Correct answer	Cleavage
B	Histogenesis
C	Neurulation
D	Gastrulation
E	Organogenesis
№	krok 2020
Topic	CYTOLOGY
Task	In some hereditary diseases (e.g.Kearns-Sayre syndrome), mitochondrial destruction can be observed. What cellular processes can be disturbed in the result?
Correct answer	ATP synthesis
B	Lipid synthesis
C	Crossingover
D	Nuclear division
E	Protein synthesis

№	krok 2020
Topic	ORGAN OF VISION
Task	A teenager with impaired visual acuity came to an ophthalmologist. The doctor explained that this condition was caused by a spasm of accommodation. What component of an eyeball is a part of accommodation apparatus?
Correct answer	Ciliary muscle
B	Cornea
C	Retina
D	Sclera
E	Vitreous body
№	krok 2020
Topic	DIGESTIVE SYSTEM
Task	Mucus is known to always cover the epithelium of the nasal cavity proper. What cells of the mucosal epithelium in the nasal cavity synthesize mucus?
Correct answer	Goblet
B	Ciliated
C	–
D	Microvillous
E	Basal
№	krok 2020
Topic	NERVE TISSUE
Task	A histological specimen shows three neurons- pseudounipolar, bipolar and multipolar. How many axons will each of these cell have?
Correct answer	One
B	Two
C	Many
D	None
E	Three
№	krok 2020
Topic	NERVOUS SYSTEM
Task	A woman is diagnosed with a hemorrhage into the posterior horns of the spinal cord. What is their function?
Correct answer	Sensory
B	Motor

C	Parasympathetic
D	–
E	Sympathetic
№	krok 2020
Topic	CYTOLOGY
Task	On an electronic microphotograph of epithelial tissue a certain structure can be identified. The structure is located under the epithelial cells and shaped like a three-dimensional reticulum. Name this structure
Correct answer	Hemidesmosome
B	Cytollemma
C	Lamina propria
D	Basement membrane
E	Desmosome
№	krok 2020
Topic	BONE TISSUE
Task	An excessive bone tissue loss is often observed in older people, which indicates osteoporosis development. What bone tissue cells are activated, resulting in the development of this disease?
Correct answer	Osteoclasts
B	Macrophages
C	Osteocytes
D	Osteoblasts
E	Tissue basophils
№	krok 2020
Topic	EMBRYOLOGY
Task	Disturbed endoderm differentiation was detected in an embryo material. This process can lead to development changes in the following organs
Correct answer	Stomach
B	Heart
C	Aorta
D	Salivary gland
E	Kidneys
№	krok 2020

Topic	URINARY SYSTEM
Task	A urine sample was taken via a catheter from the urinary bladder of a 17-year old young man. Microscopy of the urine precipitate in this case can detect cells of the epithelium that lines the urinary bladder. What epithelium is it?
Correct answer	Transitional epithelium
B	Keratinized stratified epithelium
C	Non- stratified columnar epithelium
D	Non- stratified cuboidal epithelium
E	Non- Keratinized stratified epithelium
№	krok 2020
Topic	EMBRYOLOGY
Task	In the microslide of a human embryo obtained from a spontaneous miscarriage, an embryonic shield is visible and has two cellular layers: endoderm and ectoderm. This embryo was at the following developmental stage:
Correct answer	Gastrulation
B	Histogenesis
C	Organogenesis
D	Progenesis
E	Neurulation
№	krok 2020
Topic	CARDIOVASCULAR SYSTEM
Task	Microslide of a cardiac tissue shows rectangular cells with central location of the nucleus and well-developed myofibrils that are connected with Z-disks. These cells perform the following cardiac function:
Correct answer	Contraction
B	Impulse conduction
C	Endocrine
D	Protective
E	Regeneration
№	krok 2020
Topic	SKIN AND DERIVATES
Task	The investigation of the imprints obtained from the epidermal ridges on the fingers (dactiloscopy) is used by criminologists to identify people, as well as for diagnostics of a number of genetic anomalies, e.g., Down syndrome. What skin layer determines the uniqueness of the imprints?

Correct answer	Papillary layer
B	Cornified layer
C	Basal layer
D	Translucent layer
E	Reticular layer
№	krok 2020
Topic	DIGESTIVE SYSTEM
Task	A topical anesthetic was applied to the tongue apex of an experiment participant. The resulting gustatory loss will make this person unable to feel the following taste:
Correct answer	Sweet
B	Sour and salty
C	Salty
D	Sour
E	Bitter
№	krok 2020
Topic	ENDOCRINE SYSTEM
Task	After examination, the signs of acromegaly were detected in a patient. What endocrine gland is involved in this pathological process?
Correct answer	Adenohypophysis
B	Adrenal gland
C	Pineal gland
D	Neurohypophysis
E	Thyroid gland
№	krok 2020
Topic	ORGANS OF HEMATOPOIESIS AND IMMUNE DEFENSE
Task	2 months after a kidney transplantation, the patient's condition deteriorated. Based on laboratory analysis, it was determined that transplant rejection started. What factor of the immune system plays the key role in the reaction of transplant rejection?
Correct answer	T killer cell
B	Interleukin 1
C	T helper 2 cell
D	B lymphocytes
E	Natural killer cell

№	krok 2020
Topic	TEETH
Task	Histologic specimen of a tooth slice shows a tissue consisting of intercellular substance permeated with tubules, in which cellular processes of odontoblasts are situated. What tissue is presented in this histologic specimen?
Correct answer	Dentin
B	Cement
C	Periodontium
D	Pulp
E	Enamel
№	krok 2021
Topic	cytology
Task	An electronic microphotograph of a cell shows two different protein-destroying organelles. Name them
Correct answer	Lysosomes and proteasomes
B	Peroxisomes and ribosomes
C	Ribosomes
D	Golgi complex and microtubules
E	Endoplasmic reticulum and microfilament
№	krok 2021
Topic	organ of olfactory
Task	After a nose trauma, a boxer developed an impaired sense of smell. What cells can cause a loss of smell, when damaged
Correct answer	Neurosensory epithelial cells
B	Microvillous epithelial cells
C	Basement epithelial cells
D	Supporting epithelial cells
E	Ciliary epithelial cells
№	krok 2021
Topic	organ of vision
Task	A teenager with impaired visual acuity came to an ophthalmologist. The doctor explained that this condition was caused by a spasm of accommodation
Correct answer	Ciliary muscle
B	Vitreous body
C	Retina

D	Cornea
E	Sclera
№	krok 2021
Topic	blood
Task	Dental implants were installed in a patient. Three weeks later, implant rejection occurred. What blood cells play the largest role in this pathological process
Correct answer	T lymphocytes
B	B lymphocyte
C	Immunoglobulins E
D	Immunoglobulins M
E	Plasmacytes
№	krok 2021
Topic	tooth
Task	A histology slide with a section of a dental crown shows a small number of radially positioned collagen fibers (Korff fibers) in the intercel
Correct answer	Mantle dentin
B	Interglobular dentin
C	Predentin
D	Parapulpal dentin
E	Granular layer
№	krok 2021
Topic	cardio-vascular system
Task	In the wall of a blood vessel there is a large number of elastic fibers in all the layers. The middle layer contains elastic fenestrated membranes. Such characteristics of the vessel wall structure are caused by the following factors
Correct answer	High blood pressure
B	Low blood pressure
C	Osmotic pressure
D	High blood flow velocity
E	Low blood flow velocity
№	krok 2021
Topic	bone tissue
Task	In the bone tissue there are large multinucleated cells with processes that contain numerous lysosome. Name these cells

Correct answer	Osteoclasts
B	Chondroblasts
C	Chondrocytes
D	Mesenchymal cells
E	Semi-stem osteogenic cells
№	krok 2021
Topic	embryology
Task	During microscopy of an embryo material, a yolk sac is visible in the microslide. What is the main function of this organ in the human body
Correct answer	Hemopoietic
B	Trophic
C	Excretory
D	Protective
E	Amniotic fluid production
№	krok 2021
Topic	tooth
Task	On tooth section in the area of the root apex there is a tissue consisting of cells with processes surrounded by mineralized intercellular substance. Name this tissue
Correct answer	Cellular cement
B	Reticulofibrous bone tissue
C	Periodontium
D	Mantle dentin
E	Enamel
№	krok 2021
Topic	epithelial tissue
Task	Histology of a tissue shows that it has no blood vessels and its cells tightly adhere to one another, forming layers. What tissue is it
Correct answer	Epithelial tissue
B	Muscle tissue
C	Nerve tissue
D	Bone tissue
E	Cartilaginous tissue

№	krok 2021
Topic	oral cavity
Task	Histologic examination of a biopsy specimen shows a structure of the oral cavity composed of the bone tissue, which is covered by stratified squamous non-keratinizing epithelium and lamina propria. The specimen has also minor mucous salivary glands. In all parts of the lamina propria the collagenous fibers form thick bundles that bind the mucosa to the periosteum. Based on these findings, which of the following structures is the most likely presented
Correct answer	Hard palate
B	Cheek
C	Soft palate
D	Tongue
E	Lip
№	krok 2021
Topic	organs of hematopoiesis
Task	A child has a congenital immunodeficiency. The cell-mediated immunity is affected, causing frequent viral infections. It is likely to be caused by a disorder of the following organ
Correct answer	Thymus gland
B	Spleen
C	Red bone marrow
D	Lymph nodes
E	Palatine tonsils
№1	krok 2022
Topic	cardiovascular system
Task	Histological microslide shows a section of a vessel that can be characterized by regular round shape. The vessel is gaping; its wall consists of 3 layers. The middle layer is fenestrated with 30-40. elastic membranes. What vessel is exhibited in the microslide?
Correct answer	Elastic artery
B	capillary
C	Muscular artery
D	Muscular vein
E	Mixed type artery
№2	krok 2022
Topic	blood

Task	Blood sample was obtained for analysis. 30% of erythrocytes in the sample are abnormally shaped. Name this phenomenon:
Correct answer	Pathological poikilocytosis
B	Physiological poikilocytosis
C	Anisocytosis
D	Microcytosis
E	Macrocytosis
№3	krok 2022
Topic	nervous system
Task	Microslide of a CNS organ impregnated with silver shows piriform cells. The cells are aligned in a row, 3-4 cellular processes branch off from the apices of the cells. These processes branch out further and form nearly two- dimensional layers. Name these cells:
Correct answer	Purkinje cells
B	Betz cells
C	Martinotti cells
D	Golgi cells
E	Dogiel cells
№4	krok 2022
Topic	salivary glands
Task	Secretory units of salivary glands are surrounded with specific contractile cells. Name these cells:
Correct answer	Myoepithelial cells
B	Adipocytes
C	Ciliated cells
D	Endotheliocytes
E	Pericytes
№5	krok 2022
Topic	skin
Task	Cells of basal layer of epidermis were damaged due to exposure to radiation. What function of epidermis will be impaired or inhibited first?
Correct answer	Regenerative
B	Absorption
C	Barrier
D	Dielectric

E	Protective
№6	krok 2022
Topic	tooth
Task	When studying chemical composition of a tooth tissue, it is determined that 95-97% of this tissue consists of mineral substances (hydroxyapatite, carbonate apatite, fluorapatite), 1-2% consists of organic compounds, and 3% consists of water. What type of dental tissue is it?
Correct answer	Enamel
B	Pulp
C	Periodontium
D	Cement
E	Dentin
№7	krok 2022
Topic	urinary system
Task	Basement membrane consisting of three layers is an important component of renal filtration barrier. Its electron- dense middle layer has specialized reticular structure. This membrane is located in:
Correct answer	Renal corpuscle
B	Proximal tubule
C	Distal straight tubule
D	Thin tubule
E	Capillaries of peritubular capillary network
№8	krok 2022
Topic	blood
Task	During analysis of a blood sample, the laboratory assistant additionally noted that this sample belongs to a female patient. Such conclusion can be made based on the structural characteristics of certain blood corpuscles. Name this type of corpuscles:
Correct answer	Neutrophils
B	Basocytes
C	Lymphocytes
D	Monocytes
E	Erythrocytes
№9	krok 2022
Topic	cytology

Task	A cell is an elementary living system that ensures proper structure, development, functioning, adaptation, procreation, and regeneration of the organism. Name the three main structural components of a cell:
Correct answer	Cell membrane (plasmalemma), cytoplasm, nucleus
B	Cytoplasm, organelles, nucleus
C	Glycocalyx, nucleus, organelles
D	Hyaloplasm, plasmalemma, nucleus
E	Cell membrane (plasmalemma), inclusions, organelles
№10	krok 2022
Topic	embryology
Task	In an experiment, the myotome was destroyed in a rabbit fetus. This manipulation will result in malformation of the following structure:
Correct answer	Skeletal muscles
B	Smooth muscles
C	Serous membranes
D	Axial skeleton
E	Dermal connective tissue
№11	krok 2022
Topic	organ of hearing
Task	Disturbed auditory function can be caused by changes in the structure of the receptor cells of spiral organ of Corti. What cells are affected in such cases?
Correct answer	Hair cells
B	Marginal cells
C	Supporting cells
D	Phalangeal cells
E	Pillars
№12	krok 2022
Topic	organ of vision
Task	A 14-year-old patient presents with disturbed twilight vision. What vitamin is deficient in the body of this patient?
Correct answer	<i>A</i>
B	<i>B-12</i>
C	B-6
D	B-x

E	C
№13	krok 2022
Topic	connective tissue
Task	Chronic inflammation of gingiva resulted in excessive growth of connective tissue fibers. What cell elements are leading in the development of this condition?
Correct answer	Fibroblasts
B	Osteoblasts
C	Osteoclasts
D	Fibrocytes
E	Macrophages
№14	krok 2022
Topic	digestive system
Task	Gastroscopy of a patient revealed insufficient amount of mucus in the coating of the mucous membrane. It can be caused by the dysfunction of the following cells of gastric wall:
Correct answer	Cells of prismatic glandular epithelium
B	Cervical cells
C	Parietal cells of gastric glands
D	Main exocrinocytes
E	Endocrinocytes
№15	krok 2022
Topic	respiratory system
Task	A newborn failed to take his first breath. Autopsy revealed that despite unobstructed airways the lungs of the newborn were unable to stretch. What is the most likely cause of this condition?
Correct answer	Absence of surfactant
B	Pleural thickening
C	Alveolar enlargement
D	Bronchial rupture
E	Bronchial narrowing

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

fetus. This function is being carried out by the following provisory organ:

Function of the following cells of gastric wall

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

embryo. What gastrulation mechanism is characteristic of a human embryo?

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

8a8c739dc61b679f52073e162e1c1fd62d808e46ba745cb05899c2a33e055213

ommodation. What component of an eyeball is a part of accommodation apparatus

ular substance of dentin. What layer of dentin is it