**Credit questions for the 1st semester in Histology, Cytology, Embryology for the first year students of Medical Faculty for International Students (specialty "Dentistry")** (утверждены на заседании кафедры от 20.11.2025, протокол №4)

1. The cell as a structural and functional unit of tissue. The overall plan of cell structure. Biological cell membranes, their structure, chemical composition and basic functions. Cell membrane.
2. Cytoplasm: general morphofunctional characteristics. Classification of organelles, their structure and function.
3. The interaction of cell structures in the process of metabolism. The reactive properties of the cells.
4. The cell nucleus, its importance in the cellular life, the main components of nucleus and their structural and functional characteristics.
5. Gametes: morphofunctional characteristics. Role of nucleus and cytoplasm in transmission and implementation of genetic information.
6. Stages of embryogenesis: fertilization, cleavage, their biological nature. The structure of the human blastula.
7. The meaning and characteristics of the process of gastrulation. Gastrulation in humans.
8. Extraembryonic (provisory) organs, their structure and function.
9. Feto-maternal communication. Implantation. Sources of formation, types and functions of human placenta.
10. Tissue as one of the levels of organization of living things. Definition. Classification of tissues. The concept of the cell populations. Stem cells and their properties. Extracellular matrix, non-cellular structures, syncytium.
11. Epithelial tissues: classification, general morphofunctional characteristics. Morphofunctional characteristics of simple epithelia.
12. Stratified epithelia: classification, morphofunctional characteristics. The physiological and reparative regeneration of the epithelial tissues.
13. Glandular epithelium. Classification of exocrine glands. Secretory cycle. Types of secretion.
14. Blood as a tissue. Plasma and formed elements. Blood count. The value of blood research in the diagnosis of diseases.
15. Hematopoiesis. The concept of stem cells and progenitor cells, features of embryonic and postembryonic hematopoiesis.
16. Red blood cells: their quantity, shape, size, structure, chemical composition, functions and lifespan. Erythropoiesis.
17. White blood cells: classification, leukogram. Monocytes: structure, quantity, functions and life expectancy. Monocytopoiesis.
18. Granular leukocytes (granulocytes): varieties, quantity, size, structure, functions, lifespan. Granulocytopoiesis.
19. Lymphocytes: their structural and functional varieties, quantity, size, structure, function, and life expectancy. Antigendependent and antigenindependent differentiation of lymphocytes.
20. Platelets (thrombocytes): structure, classification, quantity, functions and lifespan. Trombocytopoiesis.
21. Classification, sources of origin, general morphofunctional characteristics of connective tissues. Cells and extracellular matrix. Age-related changes and regeneration.

22. Loose irregular connective tissue: morphofunctional characteristics, cells and extracellular matrix. Relationships between blood cells and cells of loose connective tissue.

23. Dense fibrous connective tissue: classification, morphological and functional characteristics. Tendon structure.

24. Connective tissue with special properties: classification, morphological and functional characteristics.

25. Cartilaginous tissues: classification, general morphofunctional characteristics, development, regeneration.

26. Bone tissues: classification, general morphofunctional characteristics. Bone as an organ.

27. Development of bone tissues. Intramembranous and endochondral ossification. Bone tissue remodelling and regeneration.

28. Muscle tissues: classification, general morphofunctional characteristics. Smooth muscle tissue: a structural unit, contractile apparatus, regeneration.

29. Striated skeletal muscle tissue. Microscopic and ultramicroscopic structure of muscle fibers. Muscle fiber contraction. Regeneration. Muscle as an organ.

30. Striated cardiac muscle tissue. Sources of development. Types of cardiomyocytes.

31. Nervous tissue: general morphofunctional characteristics, sources of development. Neurons: classification, structure, regeneration.

32. Nerve fibers: morphofunctional characteristics, regeneration.

33. Nerve endings: morphological and functional classification, the principles of structure and function.

34. Interneuronal synapses: classification, structure, mechanism of nerve impulse transmission.

35. Neuroglia: classification, location and functional significance of various types of glial cells.

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