**LIST OF QUESTIONS THE INTERMEDIATE EXAM 2**

**UNIT 1. MUSCLE TISSUES**

1. Origin and classification of muscle tissues.

2. Description of smooth muscle. Spreading, shape and size of muscle cells, peculiarities of their structure.

3. Description of skeletal and cardiac muscle.

4. Structural principles of muscle fiber contraction.

5. Structure of skeletal muscle as an organ.

6. Functional and morphologic differences between skeletal and cardiac muscle tissues.

7. Cardiac muscle tissue.

**UNIT 2. NERVE TISSUE. NEURONS AND NEUROGLIA**

1. General description of nerve tissue. Its development and functions.

2. Morphological and functional classifications of neurons.

3. Neuron structure. Peculiar features.

4. Classification and description of neuroglia.

5. Structure, functions and location of ependymal cells.

6. Astrocytes. Their types, structure and functions.

7. Oligodendrocytes. Their structure, functions and location.

8. Structure and functions of microglia.

**UNIT 3. NERVE FIBERS AND TERMINALS**

1. Myelinated and unmyelinated nerve fibers. The peculiar features of their structure and functions. Process of myelinization.

2. Degeneration and regeneration of nerve fibers.

3. Receptor nerve endings: their classification, structure and functions.

4. Effector nerve endings: their classification, structure and functions.

5. Synapses: types, structure and mechanisms of transmission.

**UNIT 4. NERVE. SPINAL GANGLION. SPINAL CORD. AUTONOMIC NERVOUS SYSTEM**

1. Types of organs on the plan of structure.

2. Structural and functional unit of organ.

3. Structure of the peripheral nerve.

4. Origin and development of spinal cord and spinal ganglion.

5. Structure of spinal ganglion. Morphologic and functional description of neurocytes and neuroglia.

6. Structure of spinal cord. Spinal cord nuclei, their disposition and functional significance.

7. Morphologic and functional description of neurocytes and neuroglia of spinal cord.

8. Structure of the peripheral and central parts of the nervous system. Autonomic nerve ganglion.

9. Reflex arches of somatic and autonomic parts of the nervous system, their difference.

10. Local reflex arches. Their significance.

**UNIT 5. BRAIN**

1. Embryonal development of the brain.

2. Brain stem. Description of its parts.

3. Structure and functional significance of the cerebellum.

4. The morphological and functional characteristics of neurocytes and neuroglia of the cerebellar cortex.

5. Afferent nerve fibers of cerebellum.

6. Structure of the cerebral hemisphere cortex, its cyto- and myeloarchitecture.

7. Structure of blood-brain barrier.

**UNIT 6. ORGANS OF SENSES - I. OLFACTORY ORGAN. ORGAN OF VISION (EYE)**

1. Notion of analyzers. Sense organs. Classification.

2. Structure of olfactory organ. Cytophysiology of reception.

3. The sources and dynamics of the development of eye.

4. Eyeball structure. Structure and functions of sclera and cornea.

5. Structure of choroid, ciliary body and iris.

6. Structure of retina. Its neuronal composition and layers. Structure of retina in the region of fovea centralis and blind spot.

7. Structure of lens.

8. Dioptrical and accommodation apparatus of the eye.

9. Mechanism of light perception. Vision analyzer.

**UNIT 7. SENSE ORGANS. GUSTATORY ORGAN (ORGAN OF TASTE). EAR (ORGAN OF HEARING AND EQUILIBRIUM)**

1. Structure of gustatory organ.

2. Origin and development of ear.

3. Structure of external and middle ear.

4. Structure of cochlear part of internal ear. Membranous labyrinth.

5 Organ of Corti, It’s structure and histophysiology.

6. Structure of vestibular part of internal ear.

7. Similar and differential features of the receptor apparatus of hearing and equilibrium organ.

**UNIT 8. CARDIOVASCULAR SYSTEM. ARTERIES. MICROVESSELS. UNIT 1 VEINS. LYMPHATIC VESSELS. HEART.**

1. Classification of vessels.

2. Classification and structure of arteries.

3. Microvessels. Structure of arterioles.

4. Structure and functional significance of blood capillaries. Classification and organ features.

5. Structure of venules.

6. Types and structure of arteriovenous anastomosis.

7. Vein structure and classification.

8. Classification and structure of lymphatic vessels.

9. Development and structure of the cardiac wall.

10. Endocardium structure. Heart valves.

11. Myocardium structure.

12. Heart impulse-conducting system.

13. Microscopic, ultramicroscopic and metabolic features of contractile and conducting cardiac myocytes. Features of regeneration.

14. Blood supply and heart innervation.