

FIRST YEAR FINAL EXAM QUESTIONS

I. Locomotory system

1. Bone as an organ. Structure of mature bone: osseous (bone) tissue, compact and spongy bone tissue. Types of bones. The skeleton - definition, function.
2. Development and growth of the bones. Histogenesis - types of bone formation. Factors, influencing bone formation. Increase of the bones in length and thickness - the growth cartilage, periosteum - structure.
3. Joints between bones. Solid joints.
4. Synovial joints (diarthroses) - the structure of the synovial joints: basic and additional elements. The classification of the synovial joints.
5. Vertebral column. Joints of the vertebral column. The vertebral column as a whole. Biomechanics.
6. Skeleton of the thorax. Joints of the thorax. The thorax as a whole. Biomechanics.
7. Joints between the vertebral column and the skull. Biomechanics.
8. Joints between the skull bones. Temporomandibular joint.
9. Joints of the shoulder girdle. Shoulder joint.
10. Elbow joint. Joints between the bones of the forearm.
11. Joints of the hand. Carpometacarpal joints. Metacarpophalangeal joints. Interphalangeal joints.
12. Joints of the pelvic girdle. The pelvic girdle as a whole. Biomechanics.
13. Hip joint.
14. Knee joint.
15. Joints between the leg bones. Ankle joint.
16. Joints of the foot - subtalar joint and talo-calcaneo-navicular joint. Joints of the foot with limited movement. Interphalangeal joints. Arches of the foot. Biomechanics.
17. Structure of skeletal muscle: auxiliary structures, classification of muscles, biomechanics.
18. Muscles of the shoulder girdle - groups, attachments, action, and nerve supply.
19. Muscles of the upper arm - groups, attachments, action, and nerve supply.
20. Muscles of the forearm - groups, attachments, action, and nerve supply..
21. Muscles of the hand - groups, attachments, action, and nerve supply.
22. Synovial sheaths of the hand. Flexor and extensor retinacula.
23. Muscles around the hip joint - groups, attachments, action, and nerve supply.
24. Muscles of the femoral region - groups, attachments, action and nerve supply.
25. Muscles of the leg - groups, attachments, action and nerve supply.
26. Muscles of the foot - groups, attachments, action and nerve supply.
27. Topography of the upper limb – lateral (quadrangular) and medial (triangular) axillary space, cubital fossa.
28. Topography of the lower limb - suprapiriform foramen, infrapiriform foramen, vascular and muscular lacuna, obturator and femoral canal.
29. Topography of the lower limb – Femoral triangle, adductor canal, popliteal fossa, cruropopliteus canal.
30. The superficial veins of the upper and lower limbs.
31. The axillary artery. Position, parts, branches. Anastomoses around the shoulder joint.
32. The arteries of the upper limb - the brachial artery, the radial artery and the ulnar artery. Their position and branches.

33. The external and internal iliac arteries. Position, branches. Anastomoses around the hip joint.
34. The arteries of the lower limb - the femoral artery, the popliteal artery, the anterior and posterior tibial arteries. Position and branches.
35. Brachial plexus. The formation, position. Branches of the supraclavicular branches.
36. Median and ulnar nerve. Origin, position, branches. Areas of sensory and motor innervation.
37. Radial, axillary and musculocutaneous nerve.
38. Lumbar plexus. Formation, position, branches.
39. Sacral and coccygeal plexus. Formation, position, branches.
40. Sciatic nerve. Origin, position, branches. Branches supplying skin and muscles.

II. Nervous system and sensory organs

1. Skull (cranium) - facial cranium and neurocranium (cranial skull). Calvaria (calva, vault). The skull of the newborn.
2. External surface of the base of the skull - elements, passing through the openings and canals.
3. Internal surface of the base of the skull - elements, passing through the openings and canals.
4. Lateral aspect of the skull: temporal, infratemporal, and pterygopalatine fossae. Walls, boundaries, communications and elements passing through them.
5. Orbit. Walls, communications, and elements passing through them.
6. Skeleton of the nasal cavity. Walls, communications and elements passing through them.
7. Spinal cord - position, shape, size, segments. Meninges and blood supply.
8. Spinal cord. Grey matter - arrangement and structure.
9. Spinal cord. The white matter - ascending (sensory) and descending (motor) tracts. Intersegmental tracts.
10. Brain - development, shape, size. Anatomical and ontogenetic division. Brainstem - new and old parts. The reticular formation.
11. Medulla oblongata - position, size, the external view (aspect), the internal structure.
12. Pons - position, parts, external view, internal structure.
13. Cerebellum - position, shape, size, parts. General arrangement - grey and white matter. Archi-, paleo-, and neo-cerebellum. Nuclei. Cerebellar peduncles.
14. Cerebellar cortex - structure. Afferent and efferent tracts.
15. The fourth ventricle. Rhomboid fossa. Cerebrospinal fluid - formation, circulation, and drainage.
16. Midbrain - position, parts. External view and internal structure.
17. Diencephalon - thalamus, epithalamus, metathalamus. Position, parts, external view, internal structure.
18. Diencephalon - hypothalamus, subthalamic area. Position, external view, internal structure.
19. Cerebrum (forebrain) - position, shape, lobes. Exterior of the cerebral hemispheres - sulci and gyri. Important functional areas of the cerebral cortex.
20. Cerebral cortex - structure. Variations in the structure.

21. Basal nuclei of the cerebrum.
22. White matter. Internal capsule.
23. Olfactory apparatus (rhinencephalon). Olfactory pathway.
24. Limbic system.
25. The third ventricle. The lateral ventricle. Cerebrospinal fluid - formation and circulation, and drainage.
26. The meninges of the brain. Blood supply of the brain.
27. Ascending pathways for general sensation.
28. Ascending pathways for proprioception.
29. Efferent pathways from the cerebral cortex (the pyramid system).
30. The extrapyramidal system.
31. Cranial nerves - number, names, groups. General principles of formation. Nuclei (motor, sensory, parasympathetic), ganglia.
32. Third, fourth, and sixth cranial nerves - nuclei, position, characteristics. Course of the nerve, branches, area of distribution.
33. Trigeminal nerve. Nuclei - position, characteristic. The ganglion of the nerve. The first branch of the nerve - course, branches, area of distribution.
34. Trigeminal nerve. Nuclei - position, characteristic. The ganglion of the nerve. The second branch of the nerve - course, branches, area of distribution.
35. Trigeminal nerve. Nuclei - position, characteristic. The ganglion of the nerve. The third branch of the nerve - course, branches, area of distribution.
36. Facial nerve. Nuclei - position, characteristic. The course, branches, area of distribution.
37. Glossopharyngeal nerve. Nuclei - position, characteristic. The course, branches, area of distribution.
38. Vagus nerve. Nuclei - position, characteristic. The course, branches, area of distribution.
39. Accessory nerve, hypoglossal nerve. Nuclei - position, characteristic. The course of the nerves, branches, area of distribution.
40. Spinal nerves - number, groups, formation. Functional analysis of the spinal nerves. The spinal ganglion.
41. Autonomic nervous system - definition, criteria for division into sympathetic and parasympathetic divisions. Reflex arch. Analysis of its neurons. Autonomic ganglia. Differences between the autonomic and somatic nervous system.
42. Sympathetic division of the autonomic nervous system - nuclei, sympathetic trunk, prevertebral ganglia, nerves.
43. Parasympathetic division of the autonomic nervous system. Cranial and sacral parasympathetic outflow - nuclei, ganglia, nerves.
44. Plexuses of the autonomic nervous system in the thorax, abdominal and pelvic cavities - formation, position, organs receive their fibers.
45. Organ of vision - general remarks. The eyeball - shape, position, size. Outer (fibrous) coat.
46. The eyeball - middle (vascular) coat - parts, description.
47. Retina. Visual pathway.
48. Refracting media of the eye - cornea, lens, vitreous body, aqueous humour.
49. Extraocular muscles. Eyelids. Lacrimal apparatus. Conjunctiva. Orbital fat.
50. External ear.
51. Middle ear.
52. Internal ear. The bony labyrinth.

53. Internal ear. The membranous labyrinth - cochlear part. Organ of Corti. Pathway of hearing.
54. Internal ear. The membranous labyrinth - vestibular part. Organ of equilibrium. Pathway of equilibrium.

Recommend Resources for study:

1. *Gray's Anatomy*
2. *Human Anatomy – Regional and applied by B.D.Chaurasia*
3. *Neuroanatomy by William DeMyer*