

**Rajiv Gandhi University of Health Sciences, Karnataka****MBBS Phase - I (CBME) Degree Examination - 08-Feb-2021****Time: Three Hours****Max. Marks: 100 Marks****ANATOMY – PAPER - I (RS-4)****Q.P. CODE: 1020****(QP contains two pages)**

Your answers should be specific to the questions asked

Draw neat, labeled diagrams wherever necessary

**LONG ESSAYS****2 x 10 = 20 Marks**

1. Describe a typical intercostal space under the following headings:  
a) Definition; b) Boundaries; c) Contents (1+2+4)  
Explain where a needle is inserted into the intercostal space to drain a pleural effusion and the anatomical basis for the same. Name the structures in order from the skin to the pleura that must be pierced in order to enter the pleural cavity (0.5+0.5+2)
2. Describe the larynx under the following headings:  
a) Cavity; b) Actions of the intrinsic muscles; c) Nerve supply (2+3+2)  
Explain the anatomical basis of injuries to the nerves supplying the larynx during thyroid surgeries. (3)

**SHORT ESSAYS****10 x 5 = 50 Marks**

3. Describe the origin, course, branches and termination of the musculocutaneous nerve. Explain why the motor distribution of the musculocutaneous nerve is affected in Erb's palsy. (0.5+2+1+0.5+1)
4. A 30-year-old cricketer felt moderate pain in the right shoulder for the last two weeks. The pain was severe enough to prevent him from bowling. He visited a sports medicine specialist who observed that maximum pain was felt in the mid-range of abduction. A diagnosis of rotator cuff tendinitis was made.
  - a. Describe the components of the rotator cuff.
  - b. Explain the functional importance of the rotator cuff.
  - c. Explain the anatomical basis for the maximum pain felt in the mid-range of abduction. (2+1+2)
5. Describe the movements of the scapula and the muscles causing them. Explain the anatomical basis of winging of the scapula. (2+2+1)
6. Describe the formation, course, termination and drainage areas of the thoracic duct. Explain how stab injuries to the left side of the neck can damage the thoracic duct. (0.5+1+0.5+2+1)
7. Describe the attachments, actions and nerve supply of the muscles of the soft palate. Explain the role of the soft palate in deglutition. (2+1+1+1)
8. Describe the movements that occur at the atlanto-occipital and median atlanto-axial joints and the muscles causing them. Explain the mechanism by which movements occur at the median atlanto-axial joint. (2+2+1)
9. Draw a neat, labelled diagram of the cross-section of the spinal cord at the mid-thoracic level. Explain the functional importance of the dorsal columns. (4+1)

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10. Describe the extent, gross features and relations of the hypothalamus. Explain the functional importance of the hypothalamic-hypophyseal portal system. (1+1+2+1)
11. Describe the development of the umbilical cord. Explain why the umbilical arteries carry deoxygenated blood and umbilical veins carry oxygenated blood. (4+1)
12. Compare and contrast the light microscopic features of serous and mucous acini.

**SHORT ANSWERS****10 x 3 = 30 Marks**

13. A 30-year-old lady had to get blood drawn for some routine blood tests. At the hospital lab, the technician selected a vein that ran across the roof of the cubital fossa for the collection of blood.  
a. Which vein did the technician select for drawing blood?  
b. Explain the anatomical basis for the selection of this vein. (1+2)
14. Describe the location, formation and termination of the coronary sinus. (1+1+1)
15. Describe the lymphatic drainage of the lungs.
16. Name six branches of the external carotid artery.
17. Name the bones that contribute to the lateral wall of the nasal cavity. Explain the functional importance of the turbinates. (2+1)
18. Describe the attachments and extensions of the pre-vertebral fascia. (2+1)
19. Describe the anatomical basis for performing a lumbar puncture at the L3/L4 interspinous level.
20. Describe the three types of anastomoses with suitable examples. (1.5+1.5)
21. Describe the components of the blood-brain barrier. Explain its functional importance. (1.5+1.5)
22. Draw a neat, labelled diagram of a blastocyst.

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