

**First Professional MBBS Degree Supplementary (SAY) Examinations
October 2024****Human Anatomy Paper I****Upper Limb, Head & Neck, Neuroanatomy including General Embryology, General Histology and Genetics****Time: 3 Hours****Total Marks: 100**

- Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers
- Indicate the question number correctly for the answer in the margin space
- Answer all parts of a single question together • Leave sufficient space between answers
- Draw table/diagrams/flow charts wherever necessary

1. Multiple Choice Questions**(1x20=20)****The Answers to MCQ questions (Q.No. i to Q.No. xx) shall be written continuously on the first two writing sheets (ie Page No. 3 & 4) only****Questions i-v are single response type questions**

- Which of the following fixative is commonly used to preserve a cadaver
a) Methanol b) Glycerine c) Toluidine blue d) Formalin
- Red nucleus is present in:
a) Midbrain at the level of superior colliculus b) Midbrain at the level of inferior colliculus
c) Pons at the level of facial colliculus d) Medulla oblongata at the level of pyramidal decussation
- Mitochondrial DNA in humans is:
a) Exclusively inherited maternally b) Exclusively inherited paternally
c) Inherited both paternally and maternally d) Not inherited
- The following muscle is supplied by the glossopharyngeal nerve
a) Stylopharyngeus b) Palatopharyngeus c) Salpingopharyngeus d) Superior constrictor
- All three germ layers are present in:
a) Urachus b) Tympanic membrane c) Cornea d) Heart

Question vi-x are case scenario-based questions:

A 36 year-old male after a weekend party came home and slept off seated on a chair, with his right arm over the back of the chair all through the night. Next day he experienced difficulty in some movements of his wrist and fingers of right limb and sensory disturbances over a small area in the lateral part of dorsum of right hand.

- Which group of muscles most typically become weakened in this condition
a) Dorsal interossei b) Extensors of wrist c) Flexors of wrist d) Palmar interossei
- Which is the nerve likely to be compressed here
a) Median b) Radial c) Musculocutaneous d) Ulnar
- Name the part of brachial plexus that gives origin to the nerve that is likely to be compressed in this patient
a) Upper trunk b) Medial cord c) Lateral cord d) Posterior cord
- All the following form boundaries of spiral groove of humerus EXCEPT:
a) Shaft of humerus b) Anconeus c) Medial head of triceps d) Lateral head of triceps
- All the following are branches of the involved nerve EXCEPT
a) Upper lateral cutaneous nerve of arm b) Lower lateral cutaneous nerve of arm
c) Posterior cutaneous nerve of arm d) Posterior cutaneous nerve of forearm

Question numbers xi-xv consists of two statements - Assertion (A) and Reason (R).**Answer these questions by selecting the appropriate options given below.**

- A) Examination of breast in a case of breast carcinoma reveals peau d'orange appearance of skin
R) Retraction of pits of hair follicles beneath edematous skin following blockage of lymphatics draining the skin.
a) Both A and R are true, and R is the reason for A c) A is correct but R is incorrect
b) Both A and R are true, and R is not the reason for A d) A is incorrect but R is correct
- A) Taste from the circumvallate papilla of tongue is carried by the chorda tympani nerve
R) Circumvallate papilla is located in the anterior two third of dorsal surface of tongue
a) Both A and R are true, and R is the reason for A c) A is correct but R is incorrect
b) Both A and R are true, and R is not the reason for A d) A is incorrect but R is correct
- A) Muscles of mastication are innervated by facial nerve
R) Muscles of mastication develop from mesoderm of 1st pharyngeal arch.
a) Both A and R are true, and R is the reason for A c) A is correct but R is incorrect
~~b) Both A and R are true, and R is not the reason for A d) A is incorrect but R is correct~~

(PTO)



- xiv. A) Scalp wounds are painful but heal quickly.
 R) Scalp is richly supplied by sensory nerves and is highly vascular.
 a) Both A and R are true, and R is the reason for A
 b) Both A and R are true, and R is not the reason for A
 c) A is correct but R is incorrect
 d) A is incorrect but R is correct
- xv. A) Third ventricle is bounded on either side by thalamus and hypothalamus
 R) Third ventricle develops from the cavity of mesencephalon
 a) Both A and R are true, and R is the reason for A
 b) Both A and R are true, and R is not the reason for A
 c) A is correct but R is incorrect
 d) A is incorrect but R is correct

Question numbers xvi-xx are multiple response type questions. Read the statements & mark the answers appropriately.

- xvi. Which of the following statement/s is /are true about notochord
 1) Forms the central axis of embryonic disc
 2) Develops between prochordal plate & primitive streak from Hensen's node
 3) It's remnants are seen in the form of annulus fibrosus of intervertebral discs
 4) Induces formation of neural tube
 a) 1, 2, 3
 b) 1, 3, 4
 c) 1, 2, 4
 d) 2, 3
- xvii. Which of the following statement/s is /are true about microscopic structure of palatine tonsil
 1) Mucous membrane is lined by stratified squamous non-keratinized epithelium.
 2) Mucous acini are present
 3) Hassall's corpuscles are seen in medulla
 4) Subcortical sinus is present
 a) 1, 2, 3
 b) 1, 3, 4
 c) 1, 2, 4
 d) 1, 2
- xviii. Which of the following statement/s is /are true about sesamoid bones
 1) They are bony nodules found in tendons or joint capsules
 2) They ossify before birth
 3) They have no periosteum
 4) They help to minimize friction
 a) 1, 2, 3
 b) 1, 3, 4
 c) 1, 2, 4
 d) 1, 2
- xix. Which of the following artery/arteries supply internal capsule
 1) Pontine arteries
 2) Anterior choroidal artery
 3) Middle cerebral artery
 4) Labyrinthine artery
 a) 1, 2, 3
 b) 1, 3, 4
 c) 2, 3
 d) 1, 2
- xx. Which of the following statement/s is /are true about carotid sheath
 1) Anteriorly related to ansa cervicalis.
 2) Posteriorly related to cervical sympathetic chain
 3) Extends from base of skull above to arch of aorta below
 4) Thin over common carotid artery to allow expansion during increased venous return
 a) 1, 2, 3
 b) 1, 2
 c) 1, 4
 d) 1, 2, 4

Long essays

(2x10=20)

2. A male patient was brought to emergency department with head injury following road traffic accident. On examination he was found to have black eye and pulsating exophthalmos on left side. On radiological examination fracture of body of sphenoid was noted.
 a) What is the anatomical basis of black eye and pulsating exophthalmos in this patient
 b) Name the dural venous sinus that is likely to be involved in this patient and describe its relations, tributaries and communications
 c) Classify dural venous sinuses (2+6+2)
3. Describe shoulder joint under the following headings:-
 a) Articular surfaces
 b) Structures stabilizing the joint
 c) Movements and muscles producing each movement
 d) Applied importance (1+5+3+1)

Short Essays:

(6x6=36)

4. Describe parts, relations, connections and clinical anatomy of basal ganglia. (1+2+1+2)
 5. Describe the structure of transitional epithelium with site of occurrence and its functional significance. (4+2)
 6. Describe the formation, fate and embryological significance of primitive streak. (4+1+1)
 7. With the help of pedigree charts describe the various modes of inheritance involving the sex chromosomes. Give suitable examples for each type.
 8. Explain the attachments, nerve supply and actions of extra ocular muscles of eyeball. (3+1+2)
 9. Describe the formation, termination, tributaries and clinical importance of external jugular vein. (1+1+2+)

Short Notes:

(6x4=24)

10. Compare and contrast the microscopic features of lymph node and spleen.
 11. Describe boundaries and contents of anatomical snuff box.
 12. Describe fertilization and its results.
 13. Anatomical basis of inability to close the right eye following surgery on right parotid gland.
 14. Describe briefly the process of cadaver maintenance in the Anatomy department.
 15. Draw a neat labelled diagram of medulla oblongata at the level of olive.
