BDS FIRST PROFESSIONAL EXAMINATION 2007

ANATOMY

Model Paper (SEQs)

Total No. of SEQs: 15
Total Marks: 45 **Time 2 hours 15 min.**
Note: 3 Marks for each question.

Q.1 Define anatomical position of the human body. 1½
What is the median plane? 1½

Topic Specification: General Anatomy

KEY:

Anatomical Position: 1½

The anatomical position of the human body is defined as the position of the body in the erect standing posture with the eyes looking forwards to the horizon, the upper limbs hanging by the sides with the palms of the hands directed forwards, and the feet are together with toes pointing forwards.

Median Plane: 1½

Median plane is a vertical plane that divides the right and left sides of the body lengthwise along the midline into externally symmetrical sections. This is also called Midsagittal Plane.

Reference: General Anatomy by Laiq Hussain Siddiqui, 2nd Edition
Chapter # 2.

BDS FIRST PROFESSIONAL EXAMINATION 2007
ANATOMY
Model Paper (SEQs)

Q.2 What is morula? How blastocyst is formed? 1½,1½

Topic Specification: General Embryology

KEY:

Morula: 1½

Once the zygote has reached the two-cell stage, it undergoes a series of mitotic divisions, increasing the number of cells. After the third cleavage stage the cells maximize their contact with each other, forming a compact ball of cells, a process known as compaction. Approximately three days after fertilization, cells of the compacted embryo divide again to form a 16-cells mulberry-shaped mass called Morula.

Blastocyst Formation: 1½

About the time the morula enters the uterine cavity, fluid begins to penetrate through the zona pellucida into the intercellular spaces of the inner cell mass. Gradually the intercellular spaces become confluent and finally a single cavity, the blastocele forms. At this stage, the embryo is called a Blastocyst.

Reference: Langman's Medical Embryology 9th Edition Chapter # 2.

BDS FIRST PROFESSIONAL EXAMINATION 2007
ANATOMY
Model Paper (SEQs)

Q.3 What are pharyngeal arches? Enumerate the derivatives of the third pharyngeal arch. 1 ½ ,1 ½

Topic Specification: Special Embryology of Head and Neck.

KEY:

Pharyngeal Arches:

Pharyngeal arches are sausage-shaped swellings which appear in the future neck region of the embryo during the 4th and 5th weeks of development. Each pharyngeal arch consists of a core of mesenchymal tissue covered on the outer side by surface ectoderm and on the inner side by epithelium of endodermal origin. 1½

Derivatives of the 3rd Pharyngeal Arch:

1. Greater horn of the hyoid bone. ½
2. Lower part of the body of the hyoid bone. ½
3. Stylopharyngeus muscle. ½

Reference: Langman's Medical Embryology 9th Edition Chapter # 15.

BDS FIRST PROFESSIONAL EXAMINATION 2007
ANATOMY
Model Paper (SEQs)

Q.4 Name the cells found in the loose areolar connective tissue. What are the distinguishing features of the plasma cells? 1, 2

Topic Specification: General Histology

KEY:

Cells Found in the Loose Areolar C.T: 1

1. Fibroblasts.
2. Histiocytes.
3. Plasma cells.
4. Mast cells.
5. Fat cells.
6. Wandering cells.

Distinguishing Features of a Plasma Cell:

1. Large ovoid cell having basophilic cytoplasm due to abundance of rough endoplasmic reticulum. ½
2. There is a characteristic unstained area near the nucleus. This region contains the Golgi apparatus and centrioles. ½
3. The nucleus is spherical in shape and eccentric in position. ½
4. Within the nucleus, chromatin occurs as coarse granules arranged in a regular manner against the nuclear membrane due to which the nucleus exhibits a cart-wheel appearance. ½

Reference: Medical Histology by Laiq Hussain Siddiqui, 4th Edition Chapter # 5.

BDS FIRST PROFESSIONAL EXAMINATION 2007
ANATOMY
Model Paper (SEQs)

Q.5 Name different parts of a typical neuron? Give two examples of a multipolar neuron? 2,1

Topic Specification: General Histology

KEY:

Parts of a Typical Neuron:

1. Cell Body or soma containing the nucleus and cytoplasm. 1
2. Cell Processes which are of two types: 1
   a) Axon, and
   b) Dendrites.

Two Examples of Multipolar Neurons:

1. Pyramidal cells of the cerebral cortex. ½
2. Anterior horn cells of the spinal cord. ½

Reference: Medical Histology by Laiq Hussain Siddiqui, 4th Edition Chapter # 10.

BDS FIRST PROFESSIONAL EXAMINATION 2007
ANATOMY
Model Paper (SEQs)

Q.6 Name various layers forming the wall of the oesophagus. What type of epithelium lines the lumen of this organ? Name different types of glands found in the oesophagus. 1½,½,1

Topic Specification: Special Histology

KEY:

Layers of Oesophagus: 1½

1. Mucosa.
2. Submucosa.
3. Muscularis externa.
4. Adventitia / Serosa.

Epithelium Lining the Lumen of Oesophagus:

Stratified squamous non-keratinized epithelium. ½

Glands of Oesophagus:

1. Superficial or cardiac glands, present in the mucosa. ½
2. Deep or submucosal oesophageal glands present in the submucosa. ½

Reference: Medical Histology by Laiq Hussain Siddiqui, 4th Edition Chapter # 16.

BDS FIRST PROFESSIONAL EXAMINATION 2007
ANATOMY
Model Paper (SEQs)

Q.7 Give the boundaries of sub-occipital triangle. Name its contents. 1½,1½

Topic Specification: Gross Anatomy of Head and Neck.

KEY:

Boundaries of Sub-Occipital Triangle: 1½

Speromedially- Rectus capitus posterior major muscle.
Sperolaterally-Obliquus capitus superior muscle.
Inferior-Obliquus capitus inferior muscle.

Contents: 1½

1. Dorsal ramus of 1st cervical nerve.
2. Vertebral artery.
3. Posterior arch of atlas.
4. Suboccipital plexus of veins.

Reference: Cunningham's Manual of Practical Anatomy Vol. III, 15th Edition.

BDS FIRST PROFESSIONAL EXAMINATION 2007
ANATOMY
Model Paper (SEQs)

Q.8 What structures pass through the jugular foramen? Name the tributaries of internal jugular vein. 1½,1½

Topic Specification: Gross Anatomy of Head and Neck.

KEY:

Structures Passing Through the Jugular Foramen: 1½

1. Glossopharyngeal nerve.
2. Vagus nerve.
3. Accessory nerve.
4. Inferior petrosal sinus.
5. Terminal part of the sigmoid sinus which continues as the internal jugular vein.

Tributaries of Internal Jugular Vein: 1½

1. Inferior petrosal sinus.
2. Pharyngeal plexus of veins.
3. Facial vein.
4. Lingual vein.
5. Superior thyroid vein.
6. Middle thyroid vein.

Reference: Cunningham's Manual of Practical Anatomy Vol. III, 15th Edition.

BDS FIRST PROFESSIONAL EXAMINATION 2007
ANATOMY
Model Paper (SEQs)

Q.9 Name different layers of the deep cervical fascia. What are the relations of carotid sheath? 1,2

Topic Specification: Gross Anatomy of Head and Neck

KEY:

Layers of the Deep Cervical Fascia: 1

1. Investing layer.
2. Prevertebral fascia.
3. Pretracheal fascia.

Relations of Carotid Sheath: 2

Anteromedially-Thyroid gland invested in the pretracheal fascia.

Anterolaterally-Sternocleidomastoid muscle enveloped in the investing layer.

Posteriorly-Prevertebral muscles covered by prevertebral fascia; cervical sympathetic chain.

Reference: Cunningham's Manual of Practical Anatomy Vol. III, 15th Edition.

BDS FIRST PROFESSIONAL EXAMINATION 2007
ANATOMY
Model Paper (SEQs)

Q.10 Name different surfaces of the parotid gland. What are the relations of the anteromedial surface? 1,2

Topic Specification: Gross Anatomy of Head and Neck

KEY:

Surfaces of Parotid Gland: 1

1. Anteromedial surface.
2. Posteromedial surface.
3. Lateral surface.

Relations of Anteromedial Surface: (From lateral to medial) 2

1. Facial nerve.
2. External carotid artery.
3. Maxillary artery and maxillary vein.
4. Transverse facial artery.
5. Superficial temporal artery and vein.
6. Neck of the mandible.
7. Parotid duct.

Reference: Cunningham's Manual of Practical Anatomy Vol. III, 15th Edition.

BDS FIRST PROFESSIONAL EXAMINATION 2007
ANATOMY
Model Paper (SEQs)

Q.11 Name the ligaments of the temporomandibular joint. What muscles are responsible for its elevation? 1½,1½

Topic Specification: Gross Anatomy of Head and Neck

KEY:

Ligaments of Temporomandibular Joint: 1½

1. Lateral ligament.
2. Sphenomandibular ligament.
3. Stylomandibular ligament.

Muscles Responsible for Elevation of the Joint: 1½

1. Masseter.
2. Medial pterygoid.
3. Temporalis.

Reference: Cunningham's Manual of Practical Anatomy Vol. III, 15th Edition.

BDS FIRST PROFESSIONAL EXAMINATION 2007
ANATOMY
Model Paper (SEQs)

Q.12 Briefly describe the arterial supply and lymphatic drainage of thyroid gland? 1½,1½

Topic Specification: Gross Anatomy of Head and Neck

KEY:

Arterial Supply of the Thyroid Gland: 1½

1. Superior thyroid artery.
2. Inferior thyroid artery.
3. Thyroidea ima artery.

Lymphatic Drainage of the Thyroid Gland: 1½

1. Lymphatics from the superior pole pass to the anterosuperior group of deep cervical nodes.
2. Lymphatics from the inferior pole pass to the posteroinferior group of deep cervical nodes.
3. A few lymphatics also go to the pretracheal nodes.

Reference: Anatomy Regional and Applied by R. J Last 10th Edition

BDS FIRST PROFESSIONAL EXAMINATION 2007
ANATOMY
Model Paper (SEQs)

Q.13 How ansa cervicalis is formed? Name the muscles supplied by this nerve loop. 1½,1½

Topic Specification: Gross Anatomy of Head and Neck

KEY:

Formation of Ansa Cervicalis: 1½

Superior Root: contributed by the anterior primary ramus of the C_1 spinal nerve.

Inferior Root: contributed by the anterior primary rami of the C_2 & C_3 spinal nerves.

Muscles Supplied by this Loop: 1½

1. Sterohyoid.
2. Sterothyroid.
3. Omohyoid.

Reference: Cunningham's Manual of Practical Anatomy Vol. III, 15th Edition.

BDS FIRST PROFESSIONAL EXAMINATION 2007

ANATOMY

Model Paper (SEQs)

Q.14 Give the boundaries and the contents of the interpeduncular fossa of the brain. 1½,1½

Topic Specification: Gross Anatomy and Structures of Brain and Spinal Cord.

KEY:

Boundaries of the Interpeduncular Fossa: 1½

Anteriorly: Optic chiasma and optic tract.

Posteriorly: Crura cerebri and pons.

Contents of Interpeduncular Fossa: 1½

1. Occulomotor nerve.
2. Posterior perforated substance.
3. Mamillary bodies.
4. Tuber cinereum and infundibulum.

Reference: Cunnigham's Mannual of Practical Anatomy Vol. III, 15th Edition.

BDS FIRST PROFESSIONAL EXAMINATION 2007
ANATOMY
Model Paper (SEQs)

Q.15 Name the parts of the brain stem. What cranial nerves are attached to the middle part of the brain stem? 1½,1½

Topic Specification: Brain and Spinal Cord (Gross).

KEY:

Parts of Brain Stem: 1½

1. Midbrain.
2. Pons.
3. Medulla oblongata.

Nerves Attached to the Middle Part (Pons): 1½

1. Trigeminal nerve.
2. Abducent nerve.
3. Facial nerve.
4. Vestibulocochlear nerve.

Reference: Clinical Neuroantomy for Medical Students by Richard S. Snell, 6th Edition.