

Reg. No.

MANIPAL UNIVERSITY

MBBS PHASE I STAGE I DEGREE EXAMINATION – AUGUST 2011

SUBJECT: ANATOMY – I (ESSAY)

Saturday, August 13, 2011

Time: 09:00 – 11:00 Hrs.

Max. Marks: 60

- ✍ Answer ALL questions. Write brief, relevant and legible answers.
 ✍ Draw diagram, flow charts wherever appropriate.

1. Classify the different types of cartilages in the body giving examples for each. Describe the structure of the type of cartilage that commonly covers the articular surfaces of long bones, with the help of a neat labeled diagram.

(1½+3½ = 5 marks)
- 2A. Describe the superior radioulnar joint.
- 2B. Name the movements and muscles producing each of these movements at this joint.
- 2C. Name the nerves supplying the muscles producing these movements.

(2+2+1 = 5 marks)
3. A 25-year-old man received a stab injury in the right gluteal region during a street brawl. Several days later he started walking with a lurching gait. When he was asked to stand on the right leg with the left foot off the ground, it was noticed that the left side of the pelvis sagged:
 - 3A. What is this clinical condition called?
 - 3B. Explain the attachments, nerve supply and actions of the muscles paralysed in this condition.

(1+4 = 5 marks)
- 4A. Describe the formation of the neural tube.
- 4B. Name the derivatives of the neural crest.

(3+2 = 5 marks)
5. An elderly patient presented with a pulsating swelling protruding from the upper margin of the sternum. On examination the tracheal tug was positive. The CT scan of the chest and aortic angiography showed localized dilatation of arch of the aorta.
 - 5A. Name the clinical condition and give the exact position of the arch of the aorta in the thorax.
 - 5B. Name its branches.
 - 5C. Mention the structures lying posteriorly and to the right of the arch of aorta.

(1+2+1 = 4 marks)
6. Describe the arterial supply to the heart.

(4 marks)

7. Name the paranasal air sinuses. Describe the largest of them.
(1+3 = 4 marks)
8. A 52 year old woman presented increasing lethargy, vomiting, weight loss and was jaundiced. On examination a well defined 10cm round mass was palpable below the liver, in the right upper quadrant. Radiological examination revealed the obstruction of duodenum and bile duct.
- 8A. Name the organ, the enlargement of which led to the above condition.
- 8B. Describe the relations and development of that organ.
(1+3 = 4 marks)
9. Describe the positions, blood supply and development of vermiform appendix.
(2+1+1 = 4 marks)
10. Describe the relations, capsules and development of right kidney.
(2+1+1 = 4 marks)
11. Describe the corpus callosum.
(4 marks)
12. Describe the cerebellar peduncles.
(4 marks)
13. Describe the relations, blood supply and development of left suprarenal gland.
(1½+1½+1 = 4 marks)
14. Describe the testis under the following headings:
- 14A. Name the coverings.
- 14B. Blood supply.
- 14C. Descent.
(1+2+1 = 4 marks)



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MBBS PHASE I STAGE I DEGREE EXAMINATION – AUGUST 2011

SUBJECT: ANATOMY – II (MCQs)

Saturday, August 13, 2011

Time: 11:30 – 12:30 Hrs.

Max. Marks: 120

INSTRUCTIONS

1. For each statement, select **T** (True) or **F** (False) as your choice.
2. Indicate your choice by darkening the appropriate circle in the answer sheet provided.
3. Use only HB or 2B pencils to darken the circle.
4. Leave blank for Don't Know response.
5. Scoring systems is as follows:
For every **Correct** response 1 mark is awarded
For every **Wrong** response 0.5 mark is deducted
For every **Don't Know** response No mark is deducted
6. Indicate your roll number (Registration Number) clearly and correctly.
7. Do not write anything in the question paper.
8. The true/false statements are numbered 101 to 160 and 201 to 260 (Total 120 statements).
9. This question paper contains **04 pages**. Please make sure that the question paper provided to you has all the pages.

In the connective tissue:

101. Collagen fibers are branched
102. Elastic fibers are normally thicker than the collagen fibers
103. Fibroblasts produce the connective tissue fibers
104. Plasma cells are concerned with immune responses
105. Mast cells produce heparin

About the femur:

106. The neck of the femur is commonly fractured in the elderly individuals.
107. The blood supply to the upper end of the femur is derived mostly from superior and inferior gluteal arteries
108. The linea aspera gives attachment to all the adductor muscles.
109. The popliteus muscle takes origin from the popliteal surface of the femur
110. The lateral condyle gives attachment to the posterior cruciate ligament.

About the joints of the skull and vertebrae:

111. Majority of the joints between the bones of the skull are cartilaginous joints.
112. Flexion and extension occur at the atlanto-occipital joints.
113. The median atlantoaxial joint is plane synovial joint
114. The joints between the bodies of the vertebrae are secondary cartilaginous joints.
115. The joints between the articular processes of the vertebrae are plane synovial joints.

Regarding the muscles of mastication:

116. The temporalis muscle is attached to the coronoid process and anterior border of the ramus of mandible
117. The medial pterygoid takes origin from the medial pterygoid plate.
118. The lateral pterygoid takes origin from the greater wing of the sphenoid and lateral pterygoid plate.
119. All the muscles develop from the mesoderm of the 1st branchial arch.
120. The lateral pterygoids depress the mandible.

In the forearm:

121. Flexor carpi radialis and extensor carpi radialis longus and brevis abduct the wrist.
122. Brachioradialis and extensor carpi radialis longus take origin from the lateral supracondylar ridge of the humerus.
123. The flexor digitorum profundus is supplied by anterior and posterior interosseous nerves

124. The extensor pollicis longus and extensor indicis are attached to the posterior surface of radius.
125. Supinator is pierced by the posterior interosseous nerve.

In the gluteal region:

126. The gluteus maximus muscle is the chief extensor of the thigh
127. The nerve to quadratus femoris supplies the superior gemellus
128. Gluteus medius muscle is abductor of thigh
129. The superior gluteal nerve lies between the gluteus medius and maximus muscles.
130. The piriformis, gemelli and quadratus femoris are the medial rotators of the thigh.

Regarding the muscular and skeletal derivatives of the pharyngeal arches:

131. The lesser cornu and upper part of the body of hyoid bone develop from II pharyngeal arch.
132. All the ear ossicles are derivatives of I pharyngeal arch
133. All the muscles of the pharynx develop from the III pharyngeal arch.
134. Anterior belly of digastric and mylohyoid are derivatives of II pharyngeal arch.
135. Cricothyroid develops from the VI arch.

About the arteries of the lower limb:

136. The femoral artery normally gives medial and lateral circumflex femoral arteries.
137. The profunda femoris artery gives three perforating arteries which pierce the adductor magnus muscle.
138. The peroneal artery lies between tibialis posterior and flexor hallucis longus muscles in the back of the leg.
139. The dorsalis pedis artery joins the medial plantar artery and forms the plantar arch.
140. The pulsations of the posterior tibial artery can be felt behind the medial malleolus.

About the blood vessels in the thorax

141. Right superior intercostal vein ends in the azygos vein
142. Azygos vein arches over the root of left lung
143. Descending thoracic aorta gives posterior intercostal arteries to all the intercostal spaces
144. Left brachiocephalic vein crosses in front of arch of aorta
145. Internal thoracic artery gives superior epigastric branch

Anomalies in Fallot's tetralogy include

146. Patent foramen ovale
147. Hypertrophy of right ventricle
148. Overriding of aorta
149. Pulmonary stenosis
150. Patent ductus arteriosus

In the larynx

151. Sinus lies between the vestibular folds
152. Posterior cricoarytenoid muscle abducts the vocal fold
153. Vestibule is supplied by internal laryngeal nerve
154. Thyrohyoid membrane is pierced by internal laryngeal nerve
155. Laryngeal inlet is lateral to aryepiglottic fold

Bones forming the lateral wall of the nose include

156. Maxilla
157. Perpendicular plate of ethmoid
158. Lacrimal
159. Zygomatic
160. Inferior nasal concha

About the peritoneum

201. Greater sac lies within the greater omentum
202. Lesser sac lies in front of lesser omentum
203. Roof of epiploic foramen is formed by caudate process
204. Gastrosplenic ligament is developed from dorsal mesogastrium
205. Falciform ligament contains the ligamentum teres

The oesophagus

206. Is lined by stratified epithelium
207. Lies in front of scalenus anterior muscle
208. Has a constriction where it is crossed by left principal bronchus
209. Contains mucous type of glands in the lamina propria
210. Pierces the diaphragm at the level of T12 vertebra

The rectum

211. Presents a sacral flexure the concavity of which is directed backwards
212. Is anteriorly separated from prostate by rectovesical pouch
213. Is related on each side to the ischioanal fossa
214. Is developed from endodermal cloaca in its upper part
215. Lies in front of the median sacral vessels

Regarding male urethra

216. Prostatic urethra receives the opening of ejaculatory ducts
217. Membranous urethra is lined by transitional epithelium
218. Penile urethra is in the corpus spongiosum
219. Ducts of bulbourethral glands open into membranous urethra
220. Supplied by the branches of internal pudendal artery

The palatine tonsil

221. Is developed from third pharyngeal pouch
222. Has crypts surrounded by lymphatic follicles
223. Is laterally related to paratonsillar vein
224. Is drained by lymphatics that end in jugulo-omohyoid lymph nodes
225. Contains the mucous acini.

Regarding the corpus striatum

226. Lentiform nucleus is laterally related to external capsule
227. Head of caudate nucleus is medially related to internal capsule
228. Efferents of globus pallidus synapse with red nucleus
229. Tail of caudate nucleus lies lateral to stria terminalis
230. Anterior choroidal artery supplies part of corpus striatum

The axillary nerve

231. Arises from the medial cord of brachial plexus
232. Descends behind the second part of axillary artery
233. Passes through the triangular space
234. Is related to the medial side of surgical neck of humerus
235. Injury leads to loss of abduction of shoulder joint

The tibial nerve

236. Crosses the popliteal artery from medial to lateral side
237. Descends on the tibialis posterior muscle
238. Divides into medial and lateral plantar nerves
239. Injury leads to foot drop
240. Descends on the medial side of posterior tibial artery throughout the leg

About the middle ear

- 241. It is developed from tubotympanic recess
- 242. Its mucous membrane is supplied by chorda tympani nerve
- 243. Medial wall gives attachment to stapes
- 244. Auditory tube opens into its posterior wall
- 245. Internal carotid artery runs behind it

About the pituitary gland

- 246. Adenohypophysis is neurectodermal in origin
- 247. Its tumor can lead to bitemporal hemianopia
- 248. Its posterior lobe produces oxytocin
- 249. Pituicytes are parenchymal cells of its posterior lobe
- 250. Hypothalamohypophyseal tract is mostly responsible for the functions of anterior lobe

The mammary gland

- 251. Extends vertically from the clavicle to the 8th rib
- 252. Has parenchyma developed from mesoderm
- 253. Is supplied by posterior intercostal arteries
- 254. Incisions should be transverse during its surgery
- 255. Produces milk under the influence of oxytocin

The seminal vesicle

- 256. Lies behind the base of urinary bladder
- 257. Is laterally related to vas deferens
- 258. Is developed from mesonephric duct
- 259. Has a duct that opens into the prostatic utricle
- 260. Is supplied by inferior vesical artery

