

**MANIPAL UNIVERSITY**  
**MBBS PHASE I STAGE I DEGREE EXAMINATION – AUGUST 2014**

**SUBJECT: ANATOMY – I (ESSAY)**

Saturday, August 16, 2014

Time: 09:00 – 11:00 Hrs.

Max. Marks: 60

1. With the help of a neat labelled diagram, describe the microscopic anatomy of the hyaline cartilage. Give two examples of hyaline cartilages in human body.  
(4+1 = 5 marks)
2. Name any FOUR openings/foramina at the norma basalis of the skull. Name the structures passing through each one of them.  
(1+4 = 5 marks)
3. Name the muscles supplied by the mandibular nerve. Mention the attachments of any ONE of them.  
(3+2 = 5 marks)
4. Write a note on Graafian follicle.  
(5 marks)
5. A 23 year old man had a sudden onset of severe chest pain waking him from sleep in the early hours of the morning. His echocardiography revealed severe impairment of left ventricular function and his coronary angiography showed proximal occlusion of a branch of one of the coronary arteries which lead to the infarction of the anterior part of the inter-ventricular septum.
  - 5A. Name the specific branch of the coronary artery occluded.
  - 5B. Name the coronary artery involved in this case, give its course and distribution.  
( $\frac{1}{2}+3\frac{1}{2}$  = 4 marks)
6. Explain the internal features of the chamber of heart that receives the coronary sinus.  
(4 marks)
7. Describe the features of the lateral wall of nasal cavity.  
(4 marks)
8. Write a note on lesser omentum.  
(4 marks)
9. Mention the relations, arterial supply and lymphatic drainage of the anal canal.  
(2+1+1 = 4 marks)

10. A patient complained of pain around the tip of the right ninth costal cartilage, right shoulder and also near the lower angle of the right scapula.

10A. Name the organ that is affected in this patient and mention its parts.

10B. Explain why the pain was felt at those three regions.

(2+2 = 4 marks)

11. Name the pathway carrying fine touch sensation from the great toe. Draw and explain that pathway from the receptors to the cerebral cortex.

(4 marks)

12. Describe the floor of fourth ventricle with the help of a diagram.

(4 marks)

13. Explain the thyroid gland under the following headings:

13A. Relations of its lobe

13B. Arterial supply

13C. Development

(2+1+1 = 4 marks)

14. A 22-year-old male was admitted to the hospital with testicular pain. Physical examination revealed a swollen and inflamed left testis. CT scan revealed abnormal accumulation of fluid in the cavity of one of the layers/coverings of the testis.

14A. Name the coverings of the testis.

14B. Where is the fluid accumulated in this case?

14C. Mention the venous drainage and lymphatic drainage of left testis.

(1+1+2 = 4 marks)

**MANIPAL UNIVERSITY****MBBS PHASE I STAGE I DEGREE EXAMINATION – AUGUST 2014****SUBJECT: ANATOMY – II (MCQs)**

Saturday, August 16, 2014

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 upper limb**

101. Carpal bones are examples for irregular bones
102. First dorsal interosseous muscle is a bipennate muscle
103. Glenohumeral joint is a simple synovial joint
104. Shaft of the humerus consists of compact bone
105. Tendon of the long head of biceps contains collagen fibres

### **About the hip joint**

106. Its lunate articular surface is covered by synovial membrane
107. Iliofemoral ligament is related to the anterior part of its capsule
108. Ligament of head of the femur is an intra-capsular structure
109. Its acetabular labrum is made up of hyaline cartilage
110. It is a multi-axial joint

### **About the knee joint**

111. Its inferior articular surface is formed by tibia and fibula
112. When there is anterior cruciate ligament injury, tibia gets displaced forwards
113. It is supplied by the genicular branches derived from tibial, common peroneal, femoral and obturator nerves
114. Lateral part of the patellar articular surface on femur is larger than that of the medial pat <sup>post</sup>
115. It is unlocked by popliteus muscle at the end of flexion

### **The placenta**

116. Has a fetal portion formed by chorion frondosum
117. Has a maternal portion formed by chorionic plate
118. The maternal blood circulates in it through blood vessels in the villi
119. Has a fetal surface, which is covered by amnion
120. Has cotyledons

### **The muscles attached to the humerus include**

121. Pectoralis minor
122. Brachialis
123. Palmaris longus
124. Triceps brachii
125. Pronator quadratus

### **Regarding the muscles of the hand**

126. Adductor pollicis is supplied by the median nerve
127. Opponens pollicis takes origin from the hook of hamate and pisiform bones
128. Opponens digiti minimi is supplied by the ulnar nerve
129. All the lumbricals are supplied by ulnar nerve
130. Flexor digiti minimi flexes the proximal phalanx of the thumb

### **Among the muscles of the lower limb**

131. Rectus femoris is inserted to the pubic tubercle
132. Superior gemellus is supplied by the nerve to quadratus femoris
133. Piriformis passes through the greater sciatic foramen
134. Gluteus minimus is an abductor of the hip joint
135. Gluteus medius is inserted into the greater trochanter of the femur

### **About the pericardium**

136. It is situated in the posterior mediastinum of the thorax
137. It has a cavity between its fibrous and serous layers
138. Accumulation of fluid in the pericardial cavity can result in cardiac tamponade
139. Fibrous pericardium develops from endoderm
140. Its transverse sinus lies behind the right atrium

### **Tributaries of coronary sinus include**

141. Middle cardiac vein
142. Anterior cardiac vein
143. Posterior vein of left ventricle
144. Oblique vein of left atrium
145. Small cardiac vein

### **About the blood vessels of the head and neck**

146. Middle meningeal artery is related to the pterion
147. Common facial vein drains into the internal jugular vein
148. Lingual artery is a branch of external carotid artery
149. Subclavian and internal jugular veins join to form superior vena cava
150. Internal jugular vein lies medial to common carotid artery in the carotid sheath

### Regarding the pharynx

151. Pharyngeal tonsil is situated in the lateral wall of oropharynx
152. Pharyngeal recess is situated in the lateral wall of the nasopharynx
153. Its stylopharyngeus muscle is supplied by the pharyngeal plexus of nerves
154. External laryngeal nerve can get damaged while removing foreign bodies from its piriform fossa
155. The auditory tube connects the nasopharynx with the middle ear cavity

### About the roots of the lungs

156. Root of the right lung is related to the superior vena cava and right phrenic nerve
157. Root of the left lung is related to the azygos vein
158. Anterior most structure within the root of each lung is the bronchus
159. Vagus nerve is related to the posterior aspect of the root of the lung
160. Root of the right lung is related to the esophagus

### About the peritoneum

201. It is a serous membrane
202. It is lined by simple columnar epithelium
203. Peritoneal cavity communicates with the exterior in males
204. Its parietal layer is pain sensitive
205. Its visceral layer develops from somatopleuric layer of lateral plate mesoderm

### About the stomach

206. Its fundus is related to the spleen
207. Its posterior surface is related to the lesser sac of peritoneum
208. Its greater curvature is the commonest site of gastric ulcers
209. It is supplied by the gastric branches of vagus nerve
210. Its chief cells secrete mucous

### About the development of the gastrointestinal tract

211. Lining epithelium of duodenum develops from endoderm
212. Vermiform appendix develops from the caecal bud

213. Descending colon develops from the hindgut
214. Midgut herniates into umbilical cord during its development
215. 'Imperforate anus' is a condition in which the anal canal does not open to the exterior

### About the liver

216. Its right and left anatomical lobes are separated from each other inferiorly by fissure for ligamentum teres
217. Its bare area is related to the right kidney
218. Its porta hepatis transmits hepatic veins
219. Its hepatocytes develop from endoderm
220. Its caudate process forms the floor of epiploic foramen

### About the male urethra

221. Its membranous part is situated in the deep perineal pouch
222. Its spongy part receives the openings of ducts of bulbourethral glands
223. Its membranous part is the broadest and most dilatable part
224. It passes through the corpus cavernosum of the penis
225. In a condition called 'epispadias' the urethra opens on the ventral surface of the penis

### About the midbrain

226. In Weber's syndrome, its crus cerebri and oculomotor nerve are affected
227. Its dorsal tegmental decussation is formed by fibres from superior colliculi
228. Its substantia nigra is situated dorsal to crus cerebri
229. The trochlear nucleus is situated in its central grey matter
230. The decussation of superior cerebellar peduncle is seen at the level of its inferior colliculus

### About the pons

231. It gives attachment to the third cranial nerve
232. Basilar artery is related to its ventral surface
233. Its basilar part contains corticospinal fibres
234. It contains inferior olivary nucleus
235. It is connected to the cerebellum through the middle cerebellar peduncle

### **Association fibre bundles of cerebrum include**

- 236. Cingulum
- 237. Medial longitudinal fasciculus
- 238. Superior longitudinal fasciculus
- 239. Uncinate fasciculus
- 240. Central tegmental fasciculus

### **About the dural folds**

- 241. Anterior end of falx cerebri is attached to cribriform plate of ethmoid bone
- 242. Tentorium cerebelli is attached to the petrous part of the temporal bone
- 243. Falx cerebelli contains the occipital sinus
- 244. Inferior border of the falx cerebri contains straight sinus
- 245. Diaphragma sellae forms the floor of the hypophyseal fossa

### **Regarding the suprarenal gland**

- 246. Right suprarenal gland lies behind the abdominal aorta
- 247. It is surrounded by renal fascia
- 248. Right suprarenal vein drains into splenic vein
- 249. Anterior surface of the left suprarenal gland is related to the stomach
- 250. Its lymphatics drain into the lateral aortic nodes

### **About the scrotum**

- 251. It contains the epididymis
- 252. It is supplied by iliohypogastric nerve
- 253. It develops from genital tubercle
- 254. Its lymph drains into superficial inguinal nodes
- 255. It is filled with serous fluid in a condition called varicocele

### **About the uterus**

- 256. It develops from mesonephric duct
- 257. It communicates with the vagina through external os
- 258. Normally, it is retroflexed and retroverted
- 259. Anterior surface of its fundus is covered by peritoneum
- 260. Pelvic diaphragm is one of its main supports