Anatomy

2011

Paper - I **Full Marks - 50**

Use separate answer script for each group

Attempt all questions. Draw suitable diagrams wherever necessary.
The figures in the margin indicate full marks.

Group -A

a) A 50 year old man was brought to the Out Patient Department (OPD) with a complaint of a swelling at the midline of anterior abdominal wall over an operative scar. Swelling was diagnosed to be incisional hernia through rectus sheath.

i) Define the sheath. ii) Give its formations at different levels. iii) What are the contents of rectus sheath? Why is median incision not preferred over the anterior abdominal wall? 2+5+3+2

or

b) Following an automobile injury, a person lost his adductor movements of the leg. What is the nerve supplying the adductor groups of muscles of leg? Describe the nerve under the following heading :

i) Origin. ii) Branches. iii) Distribution. 3+4+5

Group - B

Answer *any two* of the following :—

a) A bus conductor having prominent veins in his legs during standing position. What are the superficial veins present in the leg? What are the origin, termination and tributaries of short saphenous vein? What is varicosity of leg veins? 2+4+1

b) Name the false ligaments of the liver. State within which mesogastrium, development of liver takes place and what are the remnants of it? Write from which part of the gut, liver bud develops? 4+1+1+1

c) Name the parts of the large intestine with their corresponding lengths in the adults. Describe the structure of the large gut with diagram. $2^1/_2 + 4^1/_2$

Group-C

Write notes on *any four* of the following :— 4x3

a) Down's syndrome. b) Deltoid ligament. c) Epiphysis.
d) Left Renal Vein. e) Epiploic foramen.

Group - D

Explain anatomically the following statements : 4x3

a) Cholecystitis causes pain in right shoulder.
b) Urinary fistula at the level of umbilicus in a new born baby.
c) Segment 2 and segment 6 of lung are the sites of lung abscess
d) Double Bar body in Klinefelter's syndrome.

2011 **Paper - II** **Full Marks - 50**

Use separate answer script for each group

Attempt all questions. Draw suitable diagrams wherever necessary. The figures in the margin indicate full marks.

Group - A

1. a) A child came to OPD with a complaint of injury to the external ear. On examination a perforation was found in the tympanic membrane. Discuss about the gross anatomy, arterial supply and nerve supply of the Tympanic membrane - and the External auditory canal. 3+1+2+3+1+2

or

b) A person gives history of inability to close his mouth immediately after yawning. What is the anatomical basis behind it? Describe the muscles and ligaments related to the anatomical site affected. 2+5+5

Group - B

2. Answer *any two* of the following :—

a) An old man presents with an ulcer along the margin of the tongue which was diagnosed as carcinoma of the tongue (Cancer). Which group of lymph nodes are likely to be enlarged? Discuss briefly the lymphatic drainage of the tongue. 2+5

b) A patient with increased intracranial tension presents with medial squint / strabismus. Explain the reason for medial squint. Give a brief account of anatomy of the structure involved. 2+5

c) A young patient presents with repeated vomiting and reflux on examination which was diagnosed as Diaphragmatic Hernia. Explain the condition from your knowledge of anatomy. Give the origin, insertion & nerve supply of the diaphragm. 2+5

Group - C

3. Write short notes on *any four* of the following :— 4x3

a) Oblique sinus, b) Thalamic Nuclei. c) Inlet of the Larynx. d) Development of the Soft Palate. (e) Spine of the Sphenoid.

Group - D

Write brief explanatory notes on the following statements using your knowledge of Anatomy / Embryology : 4x3

a) Superior Parathyroids are inferior in position.

b) Entry of foreign bodies is commoner to the right bronchus.

c) Transposition of great vessels.

d) An elderly female (38 years) gave birth to a baby who is examined to be having a rounded face, epicanthic folds and a characteristic single palmar (simian) crease in the palm. Explain the genetic cause of the event.

Physiology

2011 **Paper - I** **Full Marks - 50**

Use separate answer script for each group

Attempt all questions. Draw suitable diagrams wherever necessary. The figures in the margin indicate full marks.

Group - A

a) What is hemostasis? Name different coagulation factors required for coagulation and draw, a brief outline of the events of coagulation. Write in short the role of platelets in hemostasis. Justify the role of Aspirin for the prevention of stroke. 1+5+3+3

or

b) What is cardiac cycle? Describe with suitable diagram the pressure and volume changes in the left ventricle in different phases of cardiac cycle. Enumerate differences between 1st and 2nd heart sound. 2+6+4

Group - B

Answer *any two* of the following :—

a) Discuss the role of ATP? in the skeletal muscle contraction and relaxation. What is rigor mortis? 5+2

b) What is Marey's Law? What is its physiological basis? Name two conditions where it is not obeyed. 2+4+1

c) What is cardiac output? Describe one method for estimation of cardiac output. 2+5

Group - C

Write short notes on *any four* of the following : 4x3

a) CVS adjustments during exercise b) GLUT c) Asphyxia. d) 'Bile Salt, e) Standard leads in. ECG.

Group - D

Give the physiological explanation of the following : 4x3

a) In anaemic hypoxia Oxygen therapy is not of much help.

b) Increase in Pulmonary Ventilation continues even after exercise is over.

c) Brief period of straining causes tachycardia and rise in peripheral resistance.

d) In haemolytic jaundice urine is not high coloured.

2011

Paper - II **Full Marks - 50**

Use separate answer script for each group

Attempt all questions. Draw suitable diagrams wherever necessary. The figures in the margin indicate full marks.

Group - A

a) Define synapse. What is synaptic potential; give ionic basis for development of it with proper diagram and labeling. Write about important properties of synapse. 1+5+6

or

b) Name various layers of adrenal cortex and various hormones secreted by them. Write the effects of glucocorticoides. Describe cushing's syndrome. 2+7+3

Group - B

Answer *any two* of the following :—

a) Describe menstrual cycle with reference to hormonal changes. 7

b) Define polyuria. What are the causes of polyuria? Why polyuria occurs in diabetes insipidus? 2+2+3

5) What is muscle tone ? How is it regulated? 2+5

Group - C

Write short notes on *any four* of the following : 4x3

a) Paradoxical sleep.

b) Renal clearence

c) Acromegaly.

d) Renin.

e) *α*-wave in EEG

Group - D

Give the physiological explanation of the following : 4x3

a) Dissociated anaesthesia is seen in syringomyelia.

b) Sterility is more common in men working in hot surroundings.

b) Steroid therapy is always withdrawn gradually.

d) In Argyl Robertson pupil, light reflex is lost.

...is increased in hemolytic jaundice.

2011 **Paper - I** **Full Marks - 50**

Use separate answer script for each group

Attempt all questions. Draw suitable diagrams wherever necessary. The figures in the margin indicate full marks;

Group - A

1 a) What are isotopes? Discuss the role of radioisotopes as biochemical tracers, diagnostic and therapeutic tools. What is PET scan? 1+8+3

or

b) Describe the pepide bond. What are the different force that stabilize the protein structure at different levels of organization give an example to explain that 'primary structure determines the functional states of proteins'. 4+5+3

Group - B

Answer *any two* of the following :— 2x7

1. a) Write the synthesis, transport and degradation of catecholamines.

b) Describe the importance of enzyme active site in bringing about the enzymatic catalysis.

c) Describe the mitochondrial electron transport chain. How the inhibitors of electron transport chain differ from the uncouplers of oxidative phosphorylatipn?

Group - C

Write short notes on *any four* of the following :— 4x3

a) Secondary active transport. b) t-RNA

c) Glycosylated Haemoglobin. d) Prions. e) Isoenzymes.

Group - D

Explain the following statements : 4x3

a) Methotrexate is used for epticancer therapy.

b) Glucose and fructose form similar osazone crystals.

c) 2, 3 BPG helps in the delivery of O_2 in the tissues.

d) RNA can act as an enzyme.

2011 **Paper - II** **Full Marks - 50**

Use separate answer script for each group
Attempt all questions. Draw suitable diagrams wherever necessary.
The figures in the margin indicate full marks;

Group - A

1. (a) Describe the stage of initiation of translation process with the help of a diagram. State the mechanism of action of following antibiotics in the inhibition of translation, (i) Streptomycin (ii) erythromycin (iii) Chloramphenicol. 6+6

Or

(b) Write down the different typt of DNA damage. Explain the mechanism of following types of DNA repair in E.coli. (i) mismatch DNA repair (ii) Base excision repair (iii) Nucleotide excision repair. 6+(3x2)

Group - B

2. Answer *any two* of the following :—
   (a) Describe the multienzyme complex and various reactions involved in the oxidation of pyruvate to acetyl coenzyme A. 7
   (b) Illustrate the formation and metabolism of HDL. What is reverse cholesterol transport? How does this process lower the levels of LDL in plasma? 5+2
   (c) State the process of absorption of Vitamin B_{12}. Mention of role of Vitamin B_{12} in the cell metabolism. 3+4

Group - C

3. Write short notes on *any four* of the following :—
   a) Raport Leubering cycle b) RELF (Restriction Fragment Length Polymorphism) c) G-protein. d) Folate Trap.
   e) Monoclonal Antibody.

Group - D

4. Explain the following statements :— 4x3
   a) Regulation of messenger RNA stability provides a control mechanism of gene expression.
   b) Phototherapy (exposure to blue light) helps in the treatment of neonatal "physiological jaundice".
   c) Brown adipose tissue pormotes thermogenesis.
   d) Impairment of Pentose phosphate pathway leads to erythrocyte hemolysis.