

Anatomy

**2009** **Paper - I** **Full Marks - 50**

Use separate answer script for each group  
Attempt all questions. Draw suitable labeled diagram whenever necessary. The figures in the margin indicate full marks

**Group A**

1. Answer any one of the following : 12x1

a) A child presents leakage of urine through umbilicus from urinary bladder. Using your anatomical knowledge explain the congenital anomaly with a note on development of urinary bladder. Give a brief account of features with relations, ligaments and nerve supply of the organ. 3+9

b) A young lady brought to the hospital emergency with acute pain in the lower abdomen and features of shock was diagnosed as a case of ruptured ectopic gestation. Mention the usual site of ectopic gestation. Discuss the gross anatomy, development and microanatomy of the organ involved. 2+10

**Group B**

2. Discuss briefly the following any two :— 7x2

a) A factory worker presents with acute pain and swelling of central part of palm of his right hand following infection of web-space between middle and ring fingers. Using your anatomical knowledge explain this complication. Write a brief note on the palmar space affected. 2+5

b) A child suffers from bilateral dislocation of hip joint. Mention the anatomical types of dislocation of hip. State the factors maintain the stability of hip joint. 2+5

c) After splenectomy operation due to rupture of spleen following intra-abdominal injury, a patient develops diabetes mellitus. Explain the reason from your anatomical knowledge. Discuss briefly the ligaments of spleen cut during operation. 2+5

**Group C** Ischial spine - 3x4

3. Write short notes on any four of the following :— 3x4

a) Carpal tunnel b) Ischial spine c) Hesselbach's triangle  
d) Porto-caval anastomosis e) Plasma cell

**Group D** 3x4

4. Explain anatomically/embryologically

a) A palpable nodule in axilla of an elderly lady should be properly cared.

\* b) Injury to the superior gluteal nerve shows positive Trendelenberg's sign. As Gluteus medius & minimus stabilizes the hip joint.

c) Pectinate line is an important land mark of anal canal.

d) Clavicle is a modified long bone.

2009

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) *HNB* *Palate & tongue.* A new born baby was found to have cleft palate with nasal regurgitation of milk during breast feeding. Explain the congenital defect from your knowledge of Anatomy with a brief note on development of soft palate. Give a brief account of muscles of soft palate with its movement during deglutition. 4+8

or

- HNB* (b) Following 'Stroke' a man suffers from Weber's syndrome with left sided hemiplagia and ptosis, lateral strabismus & dilatation of pupil of right eye. Using your anatomy knowledge explain Weber's syndrome and involvement of ocular muscles. Discuss briefly the extrinsic muscles of eye-ball. 4+8

**Group - B**

2. Answer any two of the following :—  
(a) *Since there is maxillary air cells/antenna* A child suffer from Fallot's Tetralogy. Mention anatomical features of this congenital anomaly. Write a brief note on development of Ventricular septum. 2+5  
(b) *HNB* *Pharyngo tympanic tube / PT tube* A boy presents discharge of pus through ear following recurrent infection in throat. Explain the clinical complication from your knowledge of Anatomy. Write a brief note on the structure connecting ear with throat. 2+5  
(c) *HNB* A man aged about 60 years suffers from cerebellar ataxia following vascular damage. Mention arterial supply and phylogentic subdivision of cerebellum. What do you mean by cerebellar ataxia from your knowledge of Anatomy?

**Group - C**

3. Write short notes on any four of the following :—  
(a) Respiratory epithelium (b) Motor neurons of spinal cord  
(c) Notochord (d) Superior cervical ganglion  
(e) Light microscopic structure of lymph node. 4+8

**Group - D**

4. Write brief explanatory notes on the following statements using knowledge of Anatomy Embryology : 4x3  
(a) Type of respiration in infants is abdominal, whereas thoracic in adult females and thomcc abdominal in adult males.  
(b) Lesions in pretectal nucleus of midbrain causes Argyll

Robertson's pupil.

- (c) Supranuclear type of Facial nerve lesion leads to motor loss of lower part of face.  
(d) Vocal cord is considered as water- shed line of larynx.

Physiology

**2009** **Paper - I** **Full Marks - 50**

Use separate answer script for each group  
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**Group-A**

1. a) Define Cardiac output and describe Fick's principle of measuring cardiac output. Describe the various factors regulating cardiac output. 2+6+4  
or  
b) Define and classify hypoxia. Mention the features of hypoxic hypoxia. What do you mean by acclimatization? 4+6+2

**Group - B**

2. Answer any two of the following :—

a) Define resting membrane Potential. How resting membrane Potential is generated? What is Donnan effect? 2+3+2  
b) What is principle of blood transfusion? Describe the hazards of blood transfusion. 3+4  
c) What are micelles? Describe the role of bile salts in fat absorption. 2+5

**Group - C**

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

a) Facilitated diffusion.  
b) Erythroblastosis foetalis.  
c) Gastrin.  
d) Erythrocyte Sedimentation rate.  
e) Enterohepatic circulation of bile.

**Group - D**

Give the physiological explanation of the following : 4x3

a) Relaxation of muscle is an active process.  
b) Coagulation disorders occur in liver diseases.  
c) Apnoea occurs after hyper ventilation.  
d) Cyanosis does not occur in Severe anaemia.

2009

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 functional subdivisions of cerebellum. Mention its connections. Enumerate the signs of cerebellar dysfunction. 8+4

or

- b) Describe various sites and mechanisms by which water is reabsorbed by the nephron. Why polyurea occurs in Diabetes insipidus? 3+7+2

**Group - B**

2. Answer any two of the following :—

- a) Trace the visual pathway up to occipital cortex.  
b) What is menstrual cycle? Explain the mechanism of menstrual cycle.  
c) List the hormones of calcium metabolism. Mention the features of tetany.

**Group-C**

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

- a) Alpha block.  
b) Organ of Corti.  
c) Sertoli cell.  
d) Dwarfism.  
e) Biological clock.

**Group - D**

4. Give the physiological explanation of the following : 4x3

- a) Near Point recedes with age.  
b) In hyperthyroid state  $B_1$  blockers are used.  
c) Touching and shaking an injured part can reduce pain sensation.  
d) In conductive deafness Weber test is lateralized to the diseased side.

Biochemistry

75

2009

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) Mention Michael is Menten equation. Draw Lin weaver Burk plot from it. Discuss the role of different plasma enzymes in diagnosis. 2+2+8

or

- b) Describe in brief the different structural lipids found in cell membrane and their functional importance. 12

**Group - B**

2. Answer any two of the following :—

- a) Describe the mechanism of absorption of amino acids from the gut. What is Hartnup's disease? 5+2

- b) What are free radicals? How do they damage the biological system? Name the various antioxidants protecting the organism. 1+3+3

- c) Define amphipathic lipid with examples. Describe their behaviours in aqueous medium. State importance of liposomes in clinical practice. 2+3+2

**Group - C**

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

- a) Oral glucose tolerance test b) Allosteric enzymes,  
c) Proteoglycans. d) Lipoic acid. e) Synthetic nucleotide analogs.

**Group-D**

4. Explain the following statements : 4x3

- a) Receptor enzymes show intrinsic catalytic activity.  
b) RBC is sickle shaped in Sickle Cell disease.  
c) Histidine residues of protein acts as a physiological buffer.  
d) Fish oils are beneficial for cardiac patients in contrast to animal fat.

2009

Paper - II

Full Marks - 50

Use separate answer script for each group  
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**Group - A**

1. a) Describe the process of synthesis of protein (translation) in prokaryotes. What are the roles of different antibiotics to inhibit the processes of translation in prokaryotes? 8+4  
or  
b) Describe  $\beta$  - oxidation of stearic acid. Calculate how much energy will be generated from stearic acid.

**Group - B**

2. Answer any two of the following :—

- a) Name various fates of acetyl CoA. Describe the pathway of cholesterol biosynthesis upto rate limiting step. 3+4  
b) How iron is absorbed from the gut, transported and stored in the body? Name some important dietary items that contain iron. 2+2+2+1  
c) Describe the formation and fate of ammonia in the body. 2+5

**Group - C**

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

- a) Proto oncogene. b) Gene therapy. c) RNA processing.  
d) Glycogen storage disease, e) Role of vitamins in TCA cycle.

**Group - D**

4. Explain the following statements :

- a) DNA is much more stable than RNA.  
b) Low dose of aspirin is needed to prevent heart disease.  
c) Glucose - 6 phosphate Dehydrogenase deficiency leads to hemolytic anemia.  
d) Urinary Urobilinogen is increased in hemolytic jaundice.