

Subject : Anatomy
Paper : I

Full Marks: 50
Time : 2 ½ hours

Attempt all questions. The figures in the margin indicate full marks

Group-A 10 x 3 = 30

1. Answer *any one* of the followings :

- What are the palmar spaces? Describe the thenar muscles with their nerve supply and actions. 3+9
- Describe the internal features of anal canal with epithelial lining of each division. Why the pectinate line is called the watershed line of anal canal? What is the importance of Hilton's line? Mention the development of anal canal. Define internal haemorrhoids and mention their common sites. 4+2+2+2+2

Group-B 10 x 2 = 20

2. Answer *any two* of the following :

- Describe the Lymphatic drainage of stomach. Why does Virchow's lymphnodes get enlarged in carcinoma of stomach? 5+2
- Describe the factors maintaining medial longitudinal arch of foot. 7
- Describe the derivatives of secondary mesoderm. 7

Group-C 4 x 3 = 12

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

- Hesselbach's triangle.
- Fibrocartilage.
- Anaphase Lag.
- Short Saphenous vein.
- Classification of chromosomes on the basis of centromeres.

Group-D 4 x 3 = 12

4. Explain the followings (*any four*) :

- Fracture of shaft of humerus causes wrist drop.
- Appendix of testis is embryologically different from appendix of epididymis
- Pleural sac may be accidentally opened during exposure of the kidney from back.
- Sartorius is called as Tailors muscle.
- Spurt and shunt muscles.

001/17

The West Bengal University of Health Sciences
MBBS 1st Professional Examination 2017

Full Marks: 50
Time : 2 ½ hours

Subject : Anatomy
Paper : II

Attempt all questions. The figures in the margin indicate full marks

Group - A

1. Answer *any one* of the followings : 2+5+3+2
- a) Describe cavernous sinus under following headings : 2+3+4+2+1
- i) General information ii) Structure passing through sinus.
iii) Tributaries. iv) Communications.
- b) Enumerate white fibres of the brain. Describe the internal capsule under the following heads: Parts with relations, fibres passing through different parts and blood supply. What is stroke?

Group-B

2. Answer *any two* of the followings : 4+3
- a) Enumerate the extraocular muscles with their nerve supply and functions. 4+1+2
- b) Describe the origin, course and distribution of left coronary artery. What is angina pectoris? 7
- c) Enumerate the sources of development of interatrial septum.
- d) Describe the floor of the 4th ventricle with diagram.

Group-C

3. Write notes on *any four* of the following : 4 x 3
- a) Maxillary sinus. b) Blood supply of spinal cord. c) Meckel's cartilage.
- d) Spinal accessory nerve. e) Branchial cyst.

Group - D

4. Explain the following (*any four*) : 4 x 3
- a) Cricothyroid posterior muscle is the safety muscle of larynx.
- b) Transposition of great vessels.
- c) Increased pressure of CSF in subarachnoid space is easily diagnosed by ophthalmoscopic examination of the eyes.
- d) Parotitis is very painful.
- e) A child suffering from repeated throat infection has discharge of pus through ear.

001/17

**The West Bengal University of Health Sciences
MBBS 1st Professional Examination 2017**Subject : Physiology
Paper : IFull Marks: 50
Time : 2 ½ hours*Attempt all questions. The figures in the margin indicate full marks***Group - A**

1. a) Describe the physiologic anatomy of the different regions of the systemic circulation and mention how it correlate with their functions . What is Poiseuille – Hagen formula? 8+4
or
b) Discuss briefly cardiovascular reflexes. 12

Group - B

2. Answer any two questions :
a) Compare and contrast between static compliance and specific compliance of the lungs. What is the role of surfactant in maintaining compliance of the lungs? 3+4
b) Discuss the mechanism of action of different neuromuscular blockers. 7
c) Describe the preservation injuries in stored blood. Mention the deleterious effects of repeated blood transfusion. 4+3

Group - C

3. Write short notes on any four of the following : 4 x 3
a) Dumping syndrome.
b) Molecular motors.
c) Haemoglobinopathies.
d) Nernst equation.
e) Wolff-Parkinson White syndrome.

Group - D

4. Give the physiological explanation of the following : 4 x 3
a) In COPD, oxygen therapy should be intermittent controlled and of low concentration.
b) Brief period of raised intrathoracic pressure causes tachycardia and rise in peripheral resistance.
c) Fatty meal delays gastric emptying.
d) Digitalis increases the strength of cardiac contractions.

001/17

**The West Bengal University of Health Sciences
MBBS 1st Professional Examination 2017**

Subject : Physiology
Paper : II

Full Marks: 50
Time : 2 ½ hours

Attempt all questions. The figures in the margin indicate full marks

Group – A

1. a) Enumerate the functions of calcium in our body. Discuss the role of different hormones in maintaining calcium homeostasis. Mention the features of osteoporosis and osteomalacia. 3+5+4

or

- b) Describe briefly the components of the limbic system with a diagram. What are the vegetative functions of the hypothalamus? State the role of hypothalamus in reward and punishment. 3+5+4

Group – B

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

- a) Describe the mechanism of concentration of urine. What is oliguria? 5+2
- b) Define **menstruation**. Discuss briefly the hormonal control of menstruation. 2+5
- c) Name the main ascending tracts of the spinal cord and enumerate their functions. What is phantom limb phenomenon and law governing it? 5+2

Group – C

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

- a) Organ of Corti.
- b) Decerebrate rigidity.
- c) Hormonal regulation of testicular activity.
- d) Permissive actions of hormones.
- e) Tetany.

4 x 3

Group – D

4. Give the physiological explanation of the following :

- a) L-Dopa is useful in the treatment of Parkinson disease.
- b) Gonadotropin levels increase after menopause.
- c) Finger-nose test becomes abnormal in cerebellar disease.
- d) REM sleep is also called Paradoxical sleep.

4 x 3

The West Bengal University of Health Sciences
MBBS 1st Professional Examination 2017Subject : Biochemistry
Paper : IFull Marks : 50
Time : 2½ hours*Attempt all questions. The figures in the margin indicate full marks***Group – A**

1. ☒ Describe the role of substrate concentration on the rate of enzyme catalysed reaction using Michaelis Menten equation. Explain how a linear form of Michaelis Menten equation is used to determine K_m and V_{max} . Indicate how double reciprocal plots facilitate the evaluation of the role of simple competitive and non competitive inhibition of enzyme action. 4+4+4

or

- b) Name five enzymes whose catalytic activities are altered by covalent phosphorylation – dephosphorylation and indicate their functions. According to International Union of Biochemists (IUB), enzymes are classified into six major groups. Indicate in which groups the following enzymes belong: 5+7

- i) Adenylate cyclase. ii) DNA dependent RNA Polymerase. iii) Aldolase.
iv) Chymotrypsin v) Reverse transcriptase vi) Enolase
vii) Acetyl CoA carboxylase.

Group – B

2. Answer *any two* of the following :

- ☒ Describe various forms of isomerism exhibited by carbohydrates. Name the carbohydrates present in glycoproteins. 5+2
☒ Classify fatty acids in details and indicate their physical properties. 5+2
c) Describe the methods for determining the chemical structure of any unknown biomolecule. 7

Group – C

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

4 x 3

- ☒ Bonds in polynucleotides. ☒ Invert sugar. ☒ β pleated sheet.
☒ Glycosphingolipids. e) Glycemic index of a carbohydrate.

Group – D

4. Explain the following statements:

4 x 3

- a) Respiratory Regulations of acid base balance is incomplete.
b) Patients having HbS variant often suffer from anemia
c) Adenine nucleotides have various functions besides making nucleic acids. .
d) DNA denaturation is essential for DNA hybridization.

The West Bengal University of Health Sciences
MBBS 1st Professional Examination 2017

Subject : Biochemistry
Paper : II

Full Marks : 50
Time : 2½ hours

Attempt all questions. The figures in the margin indicate full marks

Group – A

- a) Describe the metabolic steps of biosynthesis of cholesterol. Discuss the control mechanism associated with HMG CoA reductase. Explain reverse cholesterol transport. 8+2+2

or

- b) Describe the metabolism of iron in the light of the following points : 3+3+4+1+1

- its absorption from the intestine.
- its role in mucosal cell.
- its transport and storage.

Explain how iron can generate free radicals. Indicate markers of iron overload.

Group – B

Answer *any two* of the following :

- Explain the mechanism and importance of creatine phosphate shuttle. 7
- Explain with a flow diagram how glycolysis and gluconeogenesis in the liver are controlled by fructose 2, 6 biphosphate and the bifunctional enzyme 6 phosphofructo-2 kinase/fructose 2, 6 biphosphatase. 7
- Enumerate the DNA damaging agents and indicate the types of damages made by them. 7

Group – C

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

4 x 3

- Class switching in immune response.
- Biotin as a coenzyme.
- Rapoport leubering cycle.
- Glucose transporters.
- Fatty acid synthase complex.

Group – D

Explain the following statements :

4 x 3

- Ribosome is the ultimate ribozyme.
- Hyperuricemia occurs in Von Gierke's disease.
- Pyridoxine deficiency may result with niacin deficiency.
- Citrate plays an important role in fatty acid synthesis.