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M.B.B.S. (PHASE I) DEGREE EXAMINATION, 2004

Paper I—ANATOMY

(Revised Scheme)

Time : Three Hours Maximum : 100 Marks

Your answers shall be specific to the questions asked.
Draw neat and labelled diagrams wherever necessary.

I. Long Essays :

1 Describe the radial nerve under the following headings :—

(a) Origin, root value. (b) Course, relations.
(c) Branches. (d) Applied anatomy.

(1 + 3 + 3 + 2 = 9 marks)

2 Describe the extraocular muscles under the following headings :—

(a) Names. (b) Attachments.
(c) Nerve supply. (d) Applied anatomy.

(1 + 4 + 2 + 2 = 9 marks)

[2 × 9 = 18 marks]

II. Short Essays :

3 Temporalis—Attachments, nerve supply, action. (3 + 1 + 1 = 5 marks)
4 Section of pons at mid level. (5 marks)
5 Inferior cerebellar peduncle—Parts connected, fibres passing through. (2 + 3 = 5 marks)
6 Ciliary ganglion—Type, location, connections. (1 + 1 + 3 = 5 marks)
7 Styloid apparatus. (5 marks)
8 Lumbricals—Attachments, nerve supply, action. (3 + 1 + 1 = 5 marks)
9 Pleural recesses—Location, applied anatomy. (2 + 3 = 5 marks)
10 Sternal angle—Location, events occurring, clinical importance.
11 Umbilical cord—Formation, contents. (2 + 3 = 5 marks)
12 Urothelium.

[10 × 5 = 50 marks]

III. Short Answers :

13 Nerve supply of pharynx.
14 Name any *four* tributaries of cavernous sinus.
15 Attachments and action of brachialis.
16 Claw hand.
17 Saturday night palsy.
18 Oblique sinus of pericardium.

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19 Hilum of left lung.

20 Law of ossification.

21 Placental barrier.

22 Any *four* derivatives of endoderm.

23 Examples of elastic cartilage.

24 Multipolar neuron. (Draw and label).

25 Structures passing through minor openings of diaphragm.

26 Foramen magnum.

27 Name bronchopulmonary segments of left lung.

28 Any *four* contents of middle mediastinum.

(16 × 2 = 32 marks)

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M.B.B.S. (PHASE I) DEGREE EXAMINATION, 2004

Paper II—ANATOMY

(Revised Scheme)

Time : Three Hours

Maximum : 100 Marks

Your answers shall be specific to the questions asked.
Draw neat and labelled diagrams wherever necessary.

I. Long Essays :

1 Describe hip joint under the following headings :—

(a) Type, bones articulating. (b) Capsule, ligaments.

(c) Movements, muscles causing. (d) Applied anatomy.

(1 + 3 + 3 + 2 = 9 marks)

2 Describe the pancreas under the following :—

(a) Location, parts. (b) Relations.

(c) Ducts. (d) Development.

(1 + 3 + 2 + 3 = 9 marks)

[2 × 9 = 18 marks]

II. Short Essays :

3 Second part of duodenum—Relations, interior. (3 + 2 = 5 marks)

4 Rectus sheath—Formation, contents. (3 + 2 = 5 marks)

5 Ligaments of spleen—Attachments, contents. (2 + 3 = 5 marks)

6 Lesser omentum—Attachments, contents. (2 + 3 = 5 marks)

7 Broad ligament—Formation, contents, subdivisions. (2 + 2 + 1 = 5 marks)

8 Spermatic cord—Coverings, contents. (2 + 3 = 5 marks)

9 Pelvic diaphragm—components, attachment of muscles, openings, functions. (1 + 2 + 1 + 1 = 5 marks)

10 Trigone of bladder—Boundaries, structure, importance, applied anatomy. (2 + 1 + 1 + 1 = 5 marks)

11 Femoral sheath—Formation, divisions, contents, applied anatomy. (2 + 1 + 1 + 1 = 5 marks)

12 Popliteus—Attachments, nerve supply, action. (3 + 1 + 1 = 5 marks)

[10 × 5 = 50 marks]

III. Short Answers :

13 Tibial tuberosity.

14 Brunner's glands.

15 Diagram of histology of pancreas.

16 Diagram of histology of prostate.

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17 Diagram of histology of kidney.
18 Red pulp.
19 Translocation.
20 Any *four* features of Turner's syndrome.
21 Polyploidy.
22 Name any *three* syndromes having trisomy.
23 Satellite bodies.
24 Probe patency test.
25 Physiological umbilical hernia.
26 Maturation of lung.
27 Metanephric blastema.
28 Any *three* derivatives of foregut.

(16 × 2 = 32 marks)

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M.B.B.S. (PHASE I) DEGREE EXAMINATION, 2004

Paper I—PHYSIOLOGY

(Revised Scheme)

Time : Three Hours

Maximum : 100 Marks

Your answers shall be specific to the questions asked.
Draw neat and labelled diagrams wherever necessary.

I. Long Essays :

1 Explain how plasma albumin determines fluid movement across capillaries. Name *four* other functions of plasma proteins.

(7 + 2 = 9 marks)

2 Describe the role of the different types of blood vessels. Explain how it is related to their structure.

(6 + 3 = 9 marks)

[2 × 9 = 18 marks]

II. Short Essays :

3 List the changes in erythroid precursors during maturation. Explain the basis of macrocytic anemia.

(3 + 2 = 5 marks)

4 Draw a labelled diagram to show the membrane potential of cardiac pacemaker tissue. Explain the effect of vagal stimulation on this potential.

(3 + 2 = 5 marks)

5 Write the Poiseuille Hagen formula. Name *two* factors that normally alter in it and explain the effect of each.

(2 + 1 + 2 = 5 marks)

6 List *six* changes in the cardiovascular system in response to muscular exercise. Explain the purpose of any *one* change.

(3 + 2 = 5 marks)

7 Name the muscles of inspiration and expiration. Explain the role of muscles in normal respiration.

(3 + 2 = 5 marks)

8 Draw the oxygen hemoglobin dissociation curve. Explain the significance of its shape.

(2 + 3 = 5 marks)

9 Name the components of the enteric nervous system and outline its functions.

(2 + 3 = 5 marks)

10 Name *four* stimuli that increase gastrin secretion. List the physiologic actions of gastrin.

(2 + 3 = 5 marks)

Turn over

11 Draw a diagram to show the structure of the renal filtration membrane. Explain the significance of each layer.

(2 + 3 = 5 marks)

12 Give the formula to determine effective filtration pressure in glomerular capillaries and state the normal values.

[10 × 5 = 50 marks]

III. Short Answers :

13 Name *two* anticoagulants used in the laboratory and explain the mechanism of action of any *one*.

(1 + 1 = 2 marks)

14 Name *two* tests to assess platelet function and give the normal value of each. (1 + 1 = 2 marks)

15 Define Hematocrit value. Give its significance. (1 + 1 = 2 marks)

16 Classify body fluid compartments. Give their normal values.

17 Compare Simple diffusion and Facilitated diffusion.

18 Define Vital capacity. Give its normal value. Name *two* physiological conditions where it is decreased.

19 Define "Dead space" air and give its importance.

20 Draw a labelled diagram to show the layers of respiratory membrane.

21 Give the normal content of oxygen and carbon dioxide in blood.

22 List *four* changes during acclimatization to high altitude.

23 What is Achalasia cardia ? What is it due to ?

24 Name the bile salts. Give any *two* functions.

25 Role of receptive relaxation in stomach.

26 List the enzymes produced by intestinal mucosa.

27 Name *two* substances absorbed mainly in lower small intestine. Give the role of any *one*.

28 What is artificial kidney ? Give any *two* indications.

[16 × 2 = 32 marks]

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M.B.B.S. (PHASE I) DEGREE EXAMINATION, 2004

Paper II—PHYSIOLOGY

(Revised Scheme)

Time : Three Hours

Maximum : 100 Marks

Your answers shall be specific to the questions asked.
Draw neat and labelled diagrams wherever necessary.

I. Long Essays :

1 Give any *one* classification of sensory receptors and give examples for each. Explain any *two* properties of receptors.

(5 + 4 = 9 marks)

2 Describe in detail endocrine regulation of growth.

[2 × 9 = 18 marks]

II. Short Essays :

3 Define muscle tone. Describe supraspinal control of muscle tone. (1 + 4 = 5 marks)

4 Describe the actions of parathyroid hormone. Name *one* antagonistic hormone.

(4 + 1 = 5 marks)

5 Describe the functions of aqueous humour.

6 Explain how audiometry is superior to Tuning fork test.

7 Draw a diagram to show the pathway for the "Near response".

8 Name the primary taste sensations. Give the role of chemical senses in humans.

(2 + 3 = 5 marks)

9 Describe the functions of Corpus luteum.

10 What is Menopause ? Give its basis and features. (1 + 4 = 5 marks)

11 List the steps in neuromuscular transmission in skeletal muscle. Name *one* blocker of this junction and give its mechanism of action.

(3 + 1 + 1 = 5 marks)

12 Draw a compound action potential. Give its basis. (3 + 2 = 5 marks)

[10 × 5 = 50 marks]

III. Short Answers :

13 Explain "Mass" reflex.

14 Explain the role of Renshaw cell inhibition.

15 Draw the reflex arc for patellar tendon reflex.

16 Explain presynaptic inhibition with a diagram.

17 Features of motor homunculus.

18 List functions of cerebrospinal fluid.

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Turn over

19 Functions of prefrontal lobe.

20 List *four* features of Cushing's syndrome.

21 Name the adrenal medullary hormones.

22 Name the gonadotrophic hormones.

23 Changes after bilateral vasectomy.

24 List *four* factors that influence conduction in nerve fibres.

25 Basis of quantal summation.

26 Draw a labelled diagram of sarcomere in the relaxed state of muscle.

27 Give the locations of thermoreceptors.

28 Explain how sweating helps in temperature regulation.

[16 × 2 = 32 marks

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BIOCHEMISTRY

(Revised Scheme)

Time : Three Hours Maximum : 100 Marks

Your answers shall be specific to the questions asked.
Draw neat and labelled diagrams wherever necessary.

I. Long Essays :

1 Describe reactions of citric acid cycle. Explain how carbohydrates, lipids and amino acids enter this cycle. (5 + 4 = 9 marks)

2 Describe the metabolism of glycine. (9 marks)

[2 × 9 = 18 marks]

II. Short Essays :

3 What are mucopolysaccharides ? Name the functions and composition of four mucopolysaccharides. (1 + 4 = 5 marks)

4 What are phospholipids ? Give examples. Mention their functions. (1 + 1 + 3 = 5 marks)

5 Describe the coenzyme forms and functions of folic acid. (2 + 3 = 5 marks)

6 What is oxidative phosphorylation ? Explain its mechanism. Mention its inhibitors. (1 + 2 + 2 = 5 marks)

7 What is "Recombinant DNA" ? Mention applications of genetic engineering. (1 + 4 = 5 marks)

8 Describe the regulation of enzyme activity. (5 marks)

9 How plasma proteins are separated ? Explain the significance of M band. What is A/6 ratio ? What is its clinical significance ? (1 + 2 + 2 = 5 marks)

10 Describe the causes and features of Vitamin D deficiency. (5 marks)

11 Describe the functions and absorption of iron. (2 + 3 = 5 marks)

12 Describe causes and features of hyperuremia. Mention the drugs to lower plasma uric acid level. (2 + 2 + 1 = 5 marks)

[10 × 5 = 50 marks]

III. Short Answers :

13 What is glycosuria ? Mention the causes of different types of glycosuria.

14 What is Polymerase Chain Reaction (PCR) ? Mention applications of PCR.

15 Define respiratory quotient. Name *two* conditions leading to lowering of respiratory quotient

16 What are metabolic effects of glucagon ?

17 What are oncogens ? Give *two* examples.

Turn over

18 Mention the functions of Vitamin E and Vitamin K.

19 Define BMR. Mention *two* causes of increased BMR.

20 How heme is degraded ?

21 What are porphyrias ? Name *one* disorder indicating the underlying cause.

22 Mention causes and features of lactose intolerance.

23 Mention *two* causes and features of metabolic acidosis.

24 What are proenzymes ? Give *two* examples.

25 What is the significance of brown adipose tissue ?

26 Describe the absorption of glucose.

27 Enumerate ketone bodies. Mention *two* causes of ketosis.

28 Describe Van Den Bergh reaction. Mention its significance.

[16 × 2 = 32 marks