SC–1740

FIRST YEAR B.Sc. (RADIOGRAPHY) DEGREE EXAMINATION, 2001

PHYSIOLOGY

Time : Three Hours Maximum : 80 Marks

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

I. Long Essays : (Answer any *two*)

1 What are Blood groups ? How is it classified ? What are the complications of mismatched blood transfusion ? What are the precautions we must take before blood transfusion ?

2 Define Blood pressure. What is the normal value ? Describe in brief regulation of blood pressure.

3 Draw a neat diagram of the Spirogram, explain and indicate various Lung volumes and capacities with its normal values.

(2 × 10 = 20 marks)

II. Short Essays : (Answer any *eight*)

4 Anaemias.

5 Negative feedback mechanism and *two* examples.

6 Temperature regulation.

7 Neuromuscular junction.

8 GFR and factors affecting it.

9 Accommodation reflex.

10 Structure of synapse and its properties.

11 Functions of pyramidal and extrapidal tracts.

12 Name the taste buds and primary taste sensation and draw a diagram of taste pathway.

13 Actions of parathyroid hormone and the effects of hypo secretion of the hormone.

(8 × 5 = 40 marks)

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III. Short Answers :

14 Name the hormones secreted by the posterior pituitary gland.

15 Name any *four* hormones that increases blood sugar level.

16 Name *two* hormones that causes Osteoporosis.

17 *Two* functions of haemoglobin.

Turn over

18 Name the bile salts and its functions.

19 What is the cause of first heart sound and second heart sound ?

20 Mention the movements of small intestine.

21 Mention the inspiratory muscles of respiration.

22 Name the receptors for vision and hearing.

23 Define Reflex action.

(10 × 2 = 20 mark

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FIRST YEAR B.Sc. (M.L.T. AND RADIOGRAPHY) DEGREE EXAMINATION, 2001

ANATOMY

(Common for B.Sc., M.L.T. and Radiography)

Time : Three Hours

Maximum : 80 Marks

Your answer shall be specific to the questions asked.
Draw neat and labelled diagrams wherever necessary.
Answer the question completely in one place only.

I. Long Essays : (Answer any *two*)

1 Describe a typical animal cell.

2 Name the chambers of heart. Explain the blood supply and nerve supply of heart.

3 Describe the liver and biliary apparatus.

(2 × 10 = 20 marks)

II. Short Essays : (Answer any *eight*)

4 Sternum.

5 Brachial plexus.

6 Inferior vena cava.

7 Deltoid muscle.

8 Islet's of Langerhan's.

9 Trachea.

10 Elbow joint.

11 Duramater.

12 Prostate gland.

13 Urinary bladder.

(8 × 5 = 40 marks)

III. Short Answers :

14 Name any *four* cranial nerves.

15 Name any *four* carpal bones.

16 Name any *four* parts of large intestine.

17 Name any *four* muscles of abdominal wall.

18 Name any *four* branches of external carotid artery.

19 Name any *four* structures whose length is eighteen inches.

20 Name any *four* endocrine glands.

21 Name any *four* folds of cranial duramater.

22 Name any *four* law of ossification.

23 Name any *four* special sensory organs.

(10 × 2 = 20 marks)

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FIRST YEAR B.Sc. (RADIOGRAPHY) DEGREE EXAMINATION, 2001

RADIOLOGICAL PHYSICS

Time : Three Hours Maximum : 80 Marks

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

I. Long Essays : (Answer any *two*)

1 Explain self-induction and mutual induction. Describe how these physical concepts are utilised in the construction of an A.C. transformer.

Assuming the volt per turn ratio tobe equal to one, calculate the number of turns on the secondary side, to produce 80 kV with an input of 100 volts on the primary side.

(8 + 2 = 10 marks)

2 Write a brief essay on the interaction of X-rays and Gamma rays with matter.

(10 marks)

3 Give an account of the factors that influence the quantity and quality of an X-ray beam.

(10 marks)

[2 × 10 = 20 marks]

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II. Short Essays : (Answer any *eight*)

4 Cooling of target in an X-ray tube.

5 Exponential radioactive decay.

6 A full-wave rectifier.

7 Artificial radioactivity in medical applications.

8 Elimination of characteristic X-rays and low energy X-rays from an X-ray beam.

9 Inverse square law and its application in radiation protection.

10 Power losses in transformers.

11 Electromagnetic spectrum.

12 Structure of the atom.

13 Neutron Number in an atom and Beta decay.

(8 × 5 = 40 marks)

Turn over

III. Short Answers :

14 The half-life of ^{192}Ir is 74 days. What percentage of activity will remain after a period of 370 days ?

15 Convert 1 MeV into Joules.

16 Write the infinite series which gives the value of "*e*", the base of natural logarithms and give its value rounded off to two decimal places.

17 Define "Volt", the practical unit of potential difference.

18 Draw the shape of the radioactive decay curve (i) on a linear graph ; and (ii) on a semilog graph.

19 Ionisation and Excitation.

20 Absolute dose and dose equivalent.

21 Isotopes used in medicine.

22 Ammeter and Voltmeter.

23 P and N type semiconductors.

(10 × 2 = 20 marks)

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