(Pages : 2)

SK—0119

FIRST YEAR B.Sc. (RADIOGRAPHY) DEGREE EXAMINATION, 1998

ANATOMY AND PHYSIOLOGY

Time : Three Hours Maximum : 80 Marks

Note.— (1) *Answer Section A and Section B in* **separate** *answer books.*
(2) *Your answers shall be specific to the questions asked.*
(3) *Draw neat and labelled diagrams wherever necessary.*

Section A (Anatomy)

I. Long Essay :
Give the classification of bones with suitable examples.

(1 × 10 = 10 marks)

II. Short Essays : Answer any *four* of the following :—
(a) Describe briefly the gross anatomy of the Spinal cord.
(b) Give a brief account of the Testis.
(c) Name the basic tissues of the body. Give the functions of Epithelial tissue.
(d) Give a brief account of the Pulmonary Circulation.
(e) Give a brief account of the Trachea.

(4 × 5 = 20 marks)

III. Short Answers :
(a) What is Periosteum ? Give its functions.
(b) Name *two* muscles of the lower extremity with actions of the muscles.
(c) Give the name, position and functions of the Second Cranial nerve.
(d) Name the Salivary glands. Where do they open ?
(e) Name any *four* hormones secreted by the Pituitary gland.

(5 × 2 = 10 marks)

Section B (Physiology)

I. Long Essay :
What is Normal respiratory rate ? Describe how respiration is controlled.

(1 × 10 = 10 marks)

II. Short Essay : Answer any *four* of the following :—
(a) Enumerate *five* functions of blood.
(b) Where is pepsin secreted ? Describe it's actions.
(c) Enumerate the actions of Oestrogen.
(d) Describe the formation of Renal Calculi.
(e) Define Hypoxia and explain any *one* of them.

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(4 × 5 = 20 marks)

Turn over

III. Short Answer :

(a) List *two* functions of Bone Marrow.

(b) Name *two* disorders associated with excess growth hormone secretion.

(c) Name the receptors for (i) Vision ; and (ii) Hearing.

(d) What is normal body temperature ? Name the routes by which heat is lost from the body.

(e) Give the normal values for :

(i) Blood sugar level.

(ii) Blood calcium level.

(iii) Urine output per Day.

(iv) Blood pressure.

(5 × 2 = 10 marks)

(Pages 2) **SK—0118**

FIRST YEAR B.Sc. RADIOGRAPHY AND B.Sc. MEDICAL LABORATORY TECHNOLOGY DEGREE EXAMINATION, 1998

ENGLISH

(Common for B.Sc. Radiography and Medical Laboratory Technology)

Time : Three Hours Maximum : 80 Marks

Section A

I. Answer any *one* of the following in about 300 words :—

(a) What positive attitude does Chestertan recommend in "On Running After One's Hat" ?

(b) Narrate the Shabby trick young Scott played on his School Mate.

(10 marks)

II. Answer any *one* of the following in about 300 words :—

(a) Describe a happy man's childhood days as imagined by Bertrand Russel.

(b) What, according to C.E.M. Joad, are the good and bad parts of our civilization ?

(10 marks)

III. Answer any *one* of the following in about 200 words :—

(a) What problem is brought out in Milton's "On His Blindness" ?

(b) How does Hopkin's Sonnet give expression to tension and disorder that he found inside himself ?

(10 marks)

IV. Answer the following in about 100 words each :—

(a) Write an appreciation of "The Flight of Love" by P.B. Shelly.

(b) D.H. Lawrence's reference to the Albatross in the poem "Snake".

(2 × 5 = 10 marks)

Section B

V. 1 In each of the following sentences a word is underlined and its alternatives are given below it. Choose the one nearest in meaning to the words underlined :

(a) He is <u>rude</u> to his parents.
(i) impolite ; (ii) primitive.

(b) Please don't talk <u>rot</u>.
(i) decay ; (ii) nonsense.

(2 × 1 = 2 marks)

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2 Fill in the blanks with antonyms of the words underlined :

(a) She is smart. But her brother is ———— .

(b) The answer is near to the point ; but ———— from satisfactory.

(2 × 1 = 2 marks)

3 Give one word substitutes to the following :—

(a) a person who sells vegetables.

(b) a fertile green area in a desert.

(c) one who does not drink.

(d) remedy for all troubles.

(e) cruel or unjust ruler.

(f) eating all kinds of food.

(6 × 1 = 6 marks)

4 Rewrite the following after making the necessary correction :—

(a) None of the boys had learnt their lesson.

(b) We had picnic.

(c) I said to him to go.

(d) He knows to swim.

(e) Keep this on the table.

(5 × 1 = 5 marks)

5 Fill in the blanks with appropriate prepositions :

(a) Silkworms feed ———— mulberry trees.

(b) The godown is infested ———— rats.

(c) There is no exception ———— this rule.

(3 × 1 = 3 marks)

6 Punctuate the following :—

Dear I am so thankful you have come. She said going towards him. I began to get . . . .

(2 marks)

7 Rewrite the following as directed :—

(a) He is sick ; but he is cheerful. (Use inspite of.)

(b) The rock was too steep to climb. (Use . . . so.)

(c) He speaks as his father does. (Use like.)

(d) He is very rich, yet he is not contented. (Use although.)

(e) He is the fastest among them. (Use faster.)

(f) The story is too good to be true. (Use so.)

(6 × 2 = 12 marks)

8 Write an essay on :

(a) Water pollution.

Or

(b) Unemployment problem.

Or

(c) Keeping fit.

(8 marks)

SK—0118

FIRST YEAR B.Sc. RADIOGRAPHY AND B.Sc. MEDICAL LABORATORY TECHNOLOGY DEGREE EXAMINATION, 1998

ENGLISH

(Common for B.Sc. Radiography and Medical Laboratory Technology)

Time : Three Hours Maximum : 80 Marks

Section A

I. Answer any *one* of the following in about 300 words :—

(a) What positive attitude does Chestertan recommend in "On Running After One's Hat" ?

(b) Narrate the Shabby trick young Scott played on his School Mate.

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(2 marks)

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Or

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Or

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(8 marks)

12

BR (1.2A)

MANGALORE UNIVERSITY

FIRST YEAR B.Sc (RADIOGRAPHY) DEGREE EXAMINATIONS, APRIL 1998

ANATOMY & PHYSIOLOGY

Answer parts A and B in separate answer books.

SECTION - A : ANATOMY

Time: 1½ Hours. Max. Marks: 35

NOTE: Draw neat diagrams wherever necessary.

1. Answer any TWO of the following:

   (a) Write briefly about different anatomical terms used to describe the location of various parts of the body in relation to fundamental planes and terms related to movement. (10)

   (b) Describe in brief the anatomy of the following:

   (i) LARYNX (ii) LUNG (10)

   (c) Name all the endocrine glands. Describe the thyroid gland. (10)

2. Write short notes on any THREE of the following: (5x3=15)

   (a) Structure of a cell
   (b) Aorta
   (c) Tongue
   (d) Pericardium
   (e) Fore Brain

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BR(1.2B)

SECTION - B : PHYSIOLOGY

Time: 1½ hours. Max. Marks: 35.

1. Answer any TWO of the Following: (10x2=20)

   (a) Describe the Intrinsic Mechanism of clotting.
   (b) Describe the hormonal changes in the different phases of menstrual cycle.
   (c) Name the Gastrointestinal Hormones. Mention the actions of any two.

2. Write short notes on any THREE of the following: (5x3=15)

(a) Mechanism of Excitation Contraction coupling
(b) Glomerular Filtration Rate
(c) Thyroid Function Tests
(d) Surfactant
(e) Mechanism of Absorption of Fat.

SK—0120

FIRST YEAR B.Sc. (RADIOGRAPHY) DEGREE EXAMINATION, 1998

PRINCIPLES OF PHYSICS AND MATHEMATICS

Time : Three Hours

Maximum : 75 Marks

Instructions to candidate :

(1) *Answer Section A and Section B in* **separate** *answer-books.*

(2) *Your answer shall be specific to the questions asked.*

(3) *Draw neat and labelled diagrams wherever necessary.*

Section A (Physics)

(38 marks)

I. (a) State the postulates of Bohr's atomic theory.

(b) Obtain an expression for the energy of the electron in the n th orbit.

(2 + 6 = 8 marks)

II. Answer any *four* of the following :—

(a) The cathode of a photocell is irradiated with light of 4500 Å. The photoelectric current becomes zero when a retarding potential of 2.1 volt is applied. Calculate the work function ($h = 6.63 \times 10^{-34}$ Js ; $C = 3 \times 10^{8}$ ms^{-1}).

(b) A fixed source emits sound of frequency 1000 Hz. What is the frequency as heard by a listener (i) at rest ; (ii) moving towards the source at a constant speed 20 ms^{-1} ; and (iii) moving away from the source at the same rate.

(c) Write a note on Heisenberg's uncertainty principle.

(d) Define angular momentum. Mention its unit in S.I. system. State and explain the law of conservation of momentum.

(e) What is Doppler effect ? Write a note on the application of Doppler effect.

(4 × 5 = 20 marks)

III. (a) Why the wave nature of matter is not apparent in our daily observation ? Explain.

(b) What is binding energy ? Explain.

(c) Explain the terms eigenvalues and eigenfunctions.

(d) What are X-rays ? What is the range of their wavelength ?

(e) Write a note on gamma rays.

(2 × 5 = 10 marks)

[P.T.O.]

Section B (Mathematics)

(37 marks)

Answer **all** *questions.*

I. **Evaluate** $\int_0^1 \int_0^x \int_0^y (x+y+z)\, dz\, dy\, dx$. (7 marks)

II. **Answer any** *four* **:**

(a) Find the fourth roots of $\sqrt{3} - i$.

(b) Differentiate Cosec x w.r.t. 'x' from first principles.

(c) Solve the equation $x \frac{dy}{dx} = y - \sqrt{x^2 + y^2}$

(d) Evaluate $\int_0^{\pi} \frac{x \tan x}{\sec x + \cos x}\, dx$.

(e) Solve $(x^2 + y^2)\, dx = 2xy\, dy$.

$(4 \times 5 = 20$ marks)

III. (a) Solve the system of equations by substitution method :

$5x + 3y = 1$

$2x - 3y = 8$.

(b) Evaluate : $\lim_{x \to 0} \left(\frac{\sqrt{1+x} - \sqrt{1-x}}{x} \right)$

(c) Find $\frac{dy}{dx}$, if $\sqrt{\frac{x}{y}} + \sqrt{\frac{y}{x}} = a$.

(d) Find the area of the region bounded by the curve $y = x^3$, the x–axis and the lines $x = 1$ and $x = 2$.

(e) Integrate w.r.t. 'x' : $\frac{1}{x^2 + 2x + 5}$.

$(5 \times 2 = 10$ marks)

2 copies 2

FIRST YEAR B.Sc (Radiography) DEGREE EXAMINATION, OCT-1998
(Repeaters) CODE NO. SK- 0248

PRINCIPLES OF PHYSICS & MATHEMATICS

Time: Three Hours

Maximum Marks: 75

Note: (1) Answer Section A, Section B in Separate answer books
(2) Your answers shall be specific to the questions asked
(3) Draw neat labelled diagrams wherever necessary

SECTION A : PHYSICS

MARKS = 38

1) What are X-rays? Distinguish between continuous X – rays and Characteristic X-Rays.
2) Describe the method to produce X-rays. (Marks 3+5 = 8)

Answer Four of the Following. (Marks 4 X 5 = 20)

1. The uncertainty in the location of an electron is equal to its De Broglie wavelength. Find the Uncertinty in its velocity. If the position of A 1 KV Electron is located within 10^{-10}m, Calculate the uncertinty in its momentum ($h = 6.63 \times 10^{-34}$JS)
2. The Velocity of a body of mass 4-9 Kg Changes from 20 ms^{-1} to 30 ms^{-1} Due to a constant Force calculate the work done. From what height should the body be dropped for the same Amount of work to be done?
3. Define decay constant. Explain the use of Radioisotopes in medical science.
4. What is doppler effect? Write a note on the application of doppler's effect.
5. Write a note on Heisen Berg's Uncertainty Principle.

1. While firing a bullet, the gun must be held tight to the shoulder. Explain. (Marks 2 X 5 =10)
2. Write down schrodinger wave equation and explain the terms.
3. What are nodes and antinodes?
4. What is a photoelectric Cell? Mention the types of photoelectric cells.
5. What are nucleons ? Mention the size of a Nucleus.

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SECTION B : MATHEMATICS

ANSWER ALL QUESTIONS

MARKS –37

I Evaluate

$$\int_0^1 \int_0^x \int_0^y X^2 Y^2 Z^2 \, dz \, dy \, dx$$

(Marks 7)

II ANSWER ANY FOUR

(Marks 4 X 5 = 20)

1. Solve: $(X^2 + Y^2)\, dx = 2xy\, dy$

2. Evaluate $\int_0^{1/2} \frac{dx}{\sqrt{3-4x-x^2}}$

3. If $x^m y^n = (x+y)^{m+n}$, Prove that $\frac{dy}{dx} = \frac{y}{x}$

4. Solve by determinant method:

$$4(y-x) = 5z - 22$$
$$3z + 4x = 6y + 2$$
$$z - 3y = 14 - 10x$$

5. Find the fourth roots of $\sqrt{3}-2$

III (1) Find the modulus and amplitude of $-\sqrt{3}+2$

(Marks 5 X 2 = 10)

(2) Differentiate w.r.t "x"

$Y = \sec^4(\log \sqrt{\text{chix}})$

(3) Evaluate : $\int_0^{\Pi/2} \text{Cos}^2 \, dx$

(4) if $f(x) = 2x^2 - 3x + 5$, find $f^1(1/x)$

(5) Evaluate $\lim_{x \to 0} \left(\frac{\sqrt{1+x} - 1}{x} \right)$

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FIRST YEAR B.Sc (Radiography) DEGREE EXAMINATION, OCT- 1998
REVISED SCHEME

CODE NO. SK- 0252

PHYSIOLOGY

Time: Three Hours Maximum Marks: 80

Note: (1) Answer Section A, Section B in Separate answer books
(2) Your answers shall be specific to the questions asked
(3) Draw neat labelled diagrams wherever necessary

I. Define Coagulation. Describe intrinsic mechanism of Coagulation. (Marks = 10)

II. Describe nervous regulation of respiration. (Marks = 10)

III. Write a brief relevant notes on any Eight of the following: (Marks 8 X 5 = 40)

1. Taste
2. Functions of middle ear
3. Five actions of parasympathetic system
4. ABO System of Blood Grouping.
5. Hormones of posterior pituitary
6. Micturition reflex
7. Proliferative phase of menstrual cycle.
8. Errors of refraction.
9. Semicircular canals.
10. Temperature regulation.

IV. Write most appropriate answers for the following: (Marks 10 X 2 = 20)

1. Name four respiratory centres.
2. Name four harmones of anterior pituitary.
3. Labelled diagram of Nephron.
4. Name three changes during accomadation.
5. Name four primary taste sensations.
6. Heart sounds.
7. Name different parts of small intestine.
8. Name four Constituents of pancreatic juice.
9. Receptors of vision
10. Homeostasis

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FIRST YEAR B.Sc (Radiography) DEGREE EXAMINATION,OCT- 1998
REVISED SCHEME

CODE NO. SK- 0253

RADIOLOGICAL PHYSICS

Time: Three Hours Maximum Marks: 80

Note: (1) Your answers shall be specific to the questions asked
(2) Draw neat labelled diagrams wherever necessary

ANSWER ALL QUESTIONS

(Marks = 10)

I. Describe the Physical process involved in the attenuation of x ray and gamma rays as they pass Through matter.

(Marks = 5)

II. 1 Describe the construction of a FREE AIR IONISATION CHAMBER

(Marks = 3)

2. What is the Principle behind its Construction

(Marks = 2)

3. What is the physical quantity you can measure using this instrument

III. Write short notes on (Marks 5 X 10 = 50)

1. Two types of X- ray spectrum.
2. Cooling of a fixed anode X-ray tube.
3. Types of power losses in a transformer
4. Artificial radioactivity.
5. Exponential decay
6. Inverse square law
7. Condenser ionisation chamber
8. P.N Junction as a diode.
9. Bridge rectifier
10. Dose and Dose equivalent.

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(Marks 2 X 5 = 10)

IV. 1. How many half lives are required to reduce the number of madioactive atoms to a fraction of 1/64?

2. If value thickness for 1.25 Mevphotons is 11 mm of lead. Calculate the thickness Of lead required to attenuate 90% of the incident intensity.
3. ay photon intensity at a distance of 80 Cm from the focus is 100 R/Min. Calculate The intensity at (i) 40 cm (ii) 160 cm from the focus.
4. Calculate the wavelength of a 12.4 ken photon in Angstrom units(1 angstrom units is 10^{-8} cms)
5. Given that the MAINS voltage is 230 VRM, Calculate the Peak voltage, If the voltage is Half wave rectified and not filtered, What will be the output DC Voltage.

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2 copies 1

FIRST YEAR B.Sc (Radiography) DEGREE EXAMINATION,OCT- 1998
REVISED SCHEME

CODE NO. SK- 0253

RADIOLOGICAL PHYSICS

Time: Three Hours

Maximum Marks: 80

Note: (1) Your answers shall be specific to the questions asked
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(Marks = 10)

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CENTRAL LIBRARY

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