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SC—0657

SECOND YEAR B.Sc. (RADIOGRAPHY) DEGREE EXAMINATION, 1999

RADIOGRAPHIC PHOTOGRAPHY—DARK ROOM TECHNIQUE—I

Time : Three Hours

Maximum : 80 Marks

Instructions to Candidates :

(1) *Your answers shall be specific to the questions asked.*
(2) *Draw neat and labelled diagrams wherever necessary.*
(3) *Answer the questions completely in one place only.*

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

1 Write neatly construction of dark room, with neat diagram for a large hospital of 100 bed strengths.
2 What is intensifying screen ? Write neatly cross-section of intensifying screen and label all the layers and define uses of each layer.
3 What is a Developer ? Describe in detail constituents of developer and its function.

(2 × 10 = 20 marks)

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

4 Automatic processor.
5 Dark room safe lighting.
6 Pass box.
7 Factors affecting image contrast.
8 Film artefacts.
9 Yellow and green stain.
10 Developing time.
11 Cassette.
12 Magnification technique.
13 Rinsing and washing.

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(8 × 5 = 40 marks)

III. Short Answers :

14 Care of cassettes.
15 Pneumbra.
16 Eddison effect.
17 High speed screens.
18 Intensification factors.
19 MAS, KeV.
20 Film identification markers.
21 Constituents of five R.
22 Rare earth phosphors.
23 Hardener.

(10 × 2 = 20 marks)

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SK—0429

SECOND YEAR B.Sc. (RADIOGRAPHY) DEGREE EXAMINATION, 1999

RADIATION PHYSICS AND MEDICAL PHYSICS

Time : Three Hours

Maximum : 80 Marks

Answer to the point.
Draw diagrams if necessary.

I. Describe the construction of an X-ray tube used for mammography. How is it differs from an X-ray tube used for conventional radiography?

(10 marks)

II. Write short notes on any *ten* :

1 Geiger Muller Counter.
2 Cathode ray tube.
3 Electronic exposure timer.
4 Protection to public in the surroundings of an X-ray machine housing.
5 Mass miniature radiography.
6 Prevention of ARCING in X-ray tube between low voltage filament circuit and high voltage circuit.
7 Earthing.
8 Uses of FINE FOCUS and LARGE FOCUS in X-ray tubes.
9 Stochastic and non-Stochastic effects.
10 Thermo luminiscence—its use in radiation measurement.
11 Polyphase supply.
12 Mains voltage compensation.

(10 × 5 = 50 marks)

III. Answer in two *or* three sentences 2 marks each.

(a) What do you mean by "LEAD EQUIVALENCE" ?
(b) With respect to X-ray beam quality which one of the following is better :
  (a) X-ray obtained from a single phase full wave rectified X-ray tube.
  (b) X-ray obtained from a condenser (capacitor) discharge equipment.
(c) Difference between a proportional counter and Geiger Muller counter.
(d) Which of the parameters in the quality control of an X-ray tube can be tested using (a) spinning top ; (b) step wedge ?
(e) What are the insulators used inside a high voltage generator tank ?
(f) What are the voltage, you can get from a three phase supply ?
(g) What are the *three* important factors in radiation protection of a radiation worker ?
(h) What are the disadvantages of a self rectified tube ?
(i) What is the position of an mA meter in the high tension circuit ? Give reason for your answer.
(j) The *current rating* of the mains cables connected to an X-ray machine are smaller than the current that flow during an X-ray exposure. Why ?

(10 × 2 = 20 marks)

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SK—0428

SECOND YEAR B.Sc. (RADIOGRAPHY) DEGREE EXAMINATION, 1999

RADIOGRAPHY TECHNIQUE—I

Time : Three Hours

Maximum : 80 Marks

I. Define Radiation protection. What are the different methods of reducing dose to the patient ? (10 marks)

II. Short notes on any *ten* :

1 X-ray of scaphoid.
2 X-ray of head of radius.
3 Axial projection of patella.
4 X-ray of corocoid process of scapula.
5 X-ray pelvis in frog leg position.
6 X-ray of posterior arch of Atlas.
7 Waters view of skull.
8 X-ray root of last molar on right side.
9 Apicogram.
10 X-ray of optic foraminae.
11 Lateral (left) delubitus film of chest.
12 Errect abdomen X-ray.



(10 × 5 = 50 marks)

III. Short Answers :

(a) How do you take X-ray of apview of hand ?
(b) Left lateral view of calcaneum.
(c) Ap view of scapula.
(d) Both sacroiliac joint pa view.
(e) Right lateral view of thoracic vertible.
(f) Left lateral view of skull.
(g) Left lateral oblique of mandible.
(h) Posteroanterior view of chest.
(i) Lateral view of nasal bones.
(j) Sternum lateral view.

(10 × 2 = 20 marks)

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SC—0655

SECOND YEAR B.Sc. (RADIOGRAPHY) DEGREE EXAMINATION, 1999

RADIOGRAPHY TECHNIQUE—I

Time : Three Hours | Maximum : 80 Marks

Instructions to Candidates :

(1) *Your answers shall be specific to the questions asked.*
(2) *Draw neat and labelled diagrams wherever necessary.*
(3) *Answer the questions completely in one place only.*

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

1 Briefly describe the principles of Radiography with special reference to special Roentgenological procedures.
2 Briefly describe skeletal survey and required radiographic views and projections undertaken for the evaluation of metabolic hormonal disorders.
3 Describe the various views and projections of paranasal sinuses.

(2 × 10 = 20 marks)

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

4 Write briefly about protective apparel used to reduce radiation dose.
5 Write briefly about Orthopantomography.
6 What is Teleroentgenogram ?
7 What is frogs legs projection ?
8 What are the routine projections for Atlanto-occipital joint ?
9 What are the supplementary projections for acute abdomen ?
10 What are the supplementary projections for the greater and lesser trochanter of femur ?
11 What are supplementary projections for talocalcaneal joint ?
12 Write briefly about soft-tissue radiography of neck.
13 Write briefly about Decubitus projections.

(8 × 5 = 40 marks)

III. Short Answers :

14 Grid ratio.
15 Cones.
16 Lardotic view.
17 X-ray tube rating.
18 Towne's view.
19 Supplementary projection for Scaphoid.
20 Skyline view.
21 Stenvers view.
22 Intraorbital projection.
23 KUB.

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(10 × 2 = 20 marks)

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SC—0656

SECOND YEAR B.Sc. (RADIOGRAPHY) DEGREE EXAMINATION, 1999

RADIATION PHYSICS AND MEDICAL PHYSICS

Time : Three Hours Maximum : 80 Marks

Instructions to Candidates :

(1) *Your answers shall be specific to the questions asked.*
(2) *Draw neat and labelled diagrams wherever necessary.*
(3) *Answer the questions completely in one place only.*

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

1 Describe the construction and working of an Image Intensifier tube. Explain how the inconveniences of conventional fluoroscopy are overcome in the Image Intensifier coupled to CCTV system.

2 Give a brief description of the chemical effects of radiation on living cells. Define Stochastic and Non-stochastic effects. What do you understand by the term "Doubling dose" ?

3 List the tests to be conducted in the quality assurance of an X-ray equipment. Give a brief description of the instruments and how they are used. (It is enough to describe one instrument for each test.)

(2 × 10 = 20 marks)

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

4 Television camera tube (any *one* type).
5 Thermoluminescent Dosimeter.
6 6 pulse or 12 pulse high tension supply.
7 Electronic timer or auto-timer.
8 Subtraction radiography.
9 Mains voltage compensator.
10 Earthing.
11 Prevention of scattered radiation from reaching diagnostic film.
12 Electromagnetic relay.
13 Inherent and additional filtration of X-ray beam and effect of filtration.
14 Grid controlled X-ray tube.
15 Conventional Tomography.

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(10 × 5 = 50 marks)

III. Short Answers :

16 What is the function of screen in an X-ray cassette ?
17 What do you understand by the term "Quality factor" as applied to biological effects of radiation ?
18 Given the line voltage to be 415 volts, calculate the single-phase peak voltage.
19 What do you understand by the term "Lead equivalent" ?
20 Which symptom will indicate a gassy X-ray tube ?

(5 × 2 = 10 marks)