Rajiv Gandhi University of Health Sciences, Karnataka

Second year B.Sc. Radiography Degree Examination – Feb/March 2011

Time: Three Hours | Max. Marks: 80 Marks

RADIATION PHYSICS & MEDICAL PHYSICS

Q.P. CODE: 2204

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary

LONG ESSAYS (Answer any Two) 2 x 10 = 20 Marks

1. Write in detail about various principles underlying the design of a radiodiagnostic installation?
2. Explain the dose response curve of a glass filled radiation detector.
3. Explain the construction and working of mammographic x-ray tube.

SHORT ESSAYS (Answer any Ten) 10 x 5 = 50 Marks

4. Rectification in x-ray machine.
5. Rotating anode x-ray tube.
6. Stochastic and non-stochastic biological effects.
7. Errors in the use of antiscatter grids.
8. Annual dose equivalent limits.
9. Full wave rectification.
10. Image intensifier tube.
11. Mains voltage compensation.
12. Spinning top test tool.
13. Cathode ray tube.
14. Somatic and genetic biological effects.
15. Thermoluminescent dosimeter.

SHORT ANSWERS 5 x 2 = 10 Marks

16. Define effective dose equivalent.
17. Lead equivalent.
18. Difference between roentgen and rad.
19. Line Focus.
20. Doubling dose.

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II Year B.Sc. Radiography Degree Examination – Aug / Sep 2011

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RADIATION PHYSICS & MEDICAL PHYSICS

Q.P. CODE: 2204

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary

LONG ESSAYS (Answer any Two) 2 x 10 = 20 Marks

1. With suitable diagrams explain various types of rectifications utilized in x-ray machines.
2. Write in detail about image intensifier tube?
3. With suitable diagrams explain the construction and working of rotating anode x-ray tube.

SHORT ESSAYS (Answer any Ten) 10 x 5 = 50 Marks

4. Gas filled radiation detector.
5. Mains voltage compensation.
6. Stochastic and non-stochastic biological effects.
7. Antiscatter grids.
8. Maximum permissible dose concept.
9. Half wave rectification.
10. Mammography x-ray tube.
11. Rating charts.
12. Step wedge.
13. Grid controlled x-ray tube.
14. Television camera tube.
15. Care of x-ray tube.

SHORT ANSWERS 5 x 2 = 10 Marks

16. Define absorbed dose and give it's units.
17. TDS principle.
18. Use factor.
19. Fuse.
20. Free radicals.

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RADIOGRAPHY - I

Q.P. CODE: 2205

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary

LONG ESSAYS (Answer any Two) — 2 x 10 = 20 Marks

1. What is meant by Tomography? Describe the technique of tomography
2. What are the properties of x-rays? What is than KV radiography?
3. Describe the various techniques used in radiography of the CV junction

SHORT ESSAYS (Answer any Eight) — 8 x 5 = 40 Marks

4. Grids
5. Radiography of the shoulder
6. Radiography of the wrist
7. Basic views for the skull
8. Inspiratory and expiratory films
9. Collimation
10. Bed side radiography
11. Orthopantomography
12. Stenoers view
13. Immobilsing devices

SHORT ANSWERS — 10 x 2 = 20 Marks

14. Oblique view for SI joints
15. Sky line view for patella
16. Swimmers view
17. Tube leakage
18. Cones
19. Grid ratio
20. Views for internal auditory canal
21. Basal view or skull
22. Radiography of IV foramina in the cervical region
23. Stress view for the ankle

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RADIOGRAPHY - I

Q.P. CODE: 2205

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary

LONG ESSAYS (Answer any Two) — 2 x 10 = 20 Marks

1. Type and describe the x.ray interaction with matter
2. Describe the x. ray film processing (manual) in detail
3. Dark room fluoroscopy

SHORT ESSAYS (Answer any Eight) — 8 x 5 = 40 Marks

4. Speed and Types of x.ray films
5. Factors affecting the sharpness of image
6. Dark room construction for a 500 bed hospital
7. Dark room safe light, its performance and safe light text
8. Explain various projection for rib fracture and sternal fracture
9. Soft and hard x.rays
10. Scaphoid view
11. Lateral view of coccyx
12. Apicogram
13. Mass miniature Radiography

SHORT ANSWERS — 10 x 2 = 20 Marks

14. Lead shield
15. Scattered radiation
16. View of sella tursica
17. Developer
18. Radiography of clavicle
19. Hangers
20. Invertogram
21. Skull AP view
22. Radiography of ankle
23. Radiography of nasal bone

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Second year B.Sc. Radiography Degree Examination – Feb/March 2011

Time: Three Hours | Max. Marks: 80 Marks

RADIOGRAPHIC PHOTOGRAPHY – DARK ROOM TECHNIQUE - I

Q.P. CODE: 2206

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary

LONG ESSAYS (Answer any Two) 2 x 10 = 20 Marks

1. What is a “Safe light” and why is it used? How would you test a “Safe light” for safety?
2. What is meant by developer and what are its components? What do you mean by “Oxidized developer” and how can oxidation be prevented?
3. Discuss all about intensifying screens

SHORT ESSAYS (Answer any Eight) 8 x 5 = 40 Marks

4. Factors affecting fixation
5. Electron trap
6. Latitude in detail
7. Density, sharpness and resolution
8. Marks / Prints
9. Non screen films
10. Storage of waste hyposolution and its uses
11. Construction of an x-ray cassette
12. What is meant by characteristic radiation?
13. Structure of x-ray films

SHORT ANSWERS 10 x 2 = 20 Marks

14. Heat units
15. Secondary radiation
16. TLD Dosimetry
17. Tube rating / Tube leak
18. Speed of films
19. Infrared drying
20. Types of silver recovery
21. What is grid factor?
22. What are moving grids?
23. Thickness of film base

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Time: Three Hours | Max. Marks: 80 Marks

RADIOGRAPHIC PHOTOGRAPHY – DARK ROOM TECHNIQUE - I

Q.P. CODE: 2206

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary

LONG ESSAYS (Answer any Two) 2 x 10 = 20 Marks

1. What is intensifying screen? Write neatly cross section of intensifying screen and label all the layers and define uses of each layer?
2. Describe the constituents of developer and fixer
3. Define duplicating radiographs. Write clearly the types of equipment used with the neat diagram and explain the procedure in detail

SHORT ESSAYS (Answer any Eight) 8 x 5 = 40 Marks

4. Pass box
5. Features of ideal cassette
6. Health and safety of radiographer in processing room
7. Replenisher
8. Magnification technique
9. Caesium iodide
10. Film stock record
11. What are identification markers and name printers?
12. Latent image
13. Structure of x-ray films

SHORT ANSWERS 10 x 2 = 20 Marks

14. Dental film
15. Stains
16. Dry bench and wet bench
17. Films for special procedures / laser films
18. Developing time
19. Wetting agents
20. Safe light
21. Noise
22. Focus film distance
23. Hangers

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