Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Imaging Technology Degree Examination – April-2019

Time: Three Hours **Max. Marks: 60 Marks**

Radiographic Photography and Image Processing (RS - 2)

Q.P. CODE: 1355

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. Describe in detail about automatic film processor with neat diagram.
2. Describe in detail the structure and functions of intensifying screens.
3. Discuss in detail about film faults and its types.

SHORT ESSAYS (Answer any Five) **5 x 5 = 25 Marks**

4. Types of X-ray cassette
5. Film speed
6. Factors affecting development
7. Mass miniature radiography
8. Principle of Computed radiography
9. Silver recovery (any one method)
10. Structure of on X-ray film

SHORT ANSWERS (Answer any Five) **5 x 3 = 15 Marks**

11. Developer replinisher
12. Rinsing and washing
13. Penumbra
14. Rare earth screens
15. Hatches
16. Film density
17. Log relative exposure

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Imaging Technology Degree Examination – APRIL-2019

Time: 3 Hours **Max. Marks: 40 Marks**

Radiation Physics and Medical Physics

Q.P. Code: 1354

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

(Note: Both QP Codes 1353 and 1354 are to be answered within total duration of 3 hours)

LONG ESSAYS (Answer any One) **1 x 10 = 10 Marks**

1. Discuss in detail about construction and working of digital fluoroscopy and its advantage over conventional fluoroscopy.
2. Explain in detail anti-scatter grids in following headings
   a) Construction b) Working c) Types d) Errors e) Advantages and disadvantages

SHORT ESSAYS (Answer any Three) **3 x 5 = 15 Marks**

3. Explain radiolysis of water in detail.
4. Rapid film changer
5. Exposure timers
6. Care and maintenance of x-ray tube

SHORT ANSWERS (Answer any Five) **5 x 3 = 15 Marks**

7. Grid-controlled x-ray tube
8. Collimators
9. Define stochastic effect and non-stochastic effect.
10. Reed switch
11. Magnetic relay
12. Ten day rule and 28day rule

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Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Imaging Technology Degree Examination – APRIL-2019

Time: Three Hours **Max. Marks: 40 Marks**

Physics of Radiology
Q.P. Code: 1353

Your answers should be specific to the questions asked.
Draw neat, labeled diagrams wherever necessary
(Note: Both QP Codes 1353 and 1354 are to be answered within total duration of 3 hours)

LONG ESSAYS (Answer any One) **1 x 10 = 10 Marks**

1. Discuss the principles and construction of AC transformer.
2. Discuss the factors affecting x-ray spectrum.

SHORT ESSAYS (Answer any Three) **3 x 5 = 15 Marks**

3. Exponential attenuation
4. Rectification
5. Types of anode design
6. Methods of cooling x-ray tube

SHORT ANSWERS (Answer any Five) **5 x 3 = 15 Marks**

7. Characteristic spectrum
8. Conductors and insulators
9. Compton scattering
10. Kirchoff's law
11. Radioactive isotope
12. Decay constant

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Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Imaging Technology Degree Examination – OCT-2019

Time: Three Hours **Max. Marks: 60 Ma**

Radiographic Photography and Image Processing (RS - 2)

Q.P. CODE: 1355

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. Dark room construction for a 250 bedded hospital with neat diagram.
2. What is radiographic contrast? Describe different factors affecting radiographic contrast.
3. Describe in detail the structure of x-ray film and its recent advances.

SHORT ESSAYS (Answer any Five) **5 x 5 = 25 Marks**

4. Latent image formation
5. Types of image unsharpness
6. Duplication of Radiograph
7. Safe light test
8. Automatic processor
9. Digital radiography
10. Characteristic curve

SHORT ANSWERS (Answer any Five) **5 x 3 = 15 Marks**

11. Importance of Ph in film processing
12. Rare earth phosphors
13. Fixer composition
14. Solarization
15. Film fog
16. Grid cassette
17. Hangers

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Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Imaging Technology Degree Examination – SEP-2019

Time: Three Hours **Max. Marks: 40 Marks**

Radiation Physics and Medical Physics
Q.P. Code: 1354

Your answers should be specific to the questions asked.
Draw neat, labeled diagrams wherever necessary
(Note: Both QP Codes 1353 and 1354 are to be answered within total duration of 3 hours)

LONG ESSAYS (Answer any One) **1 x 10 = 10 Marks**

1. Describe an rotating anode X-ray tube with a neat labelled diagram. Give the differences in design features with respect to stationary anode x-ray tube.
2. What is the aim of radiation protection? Explain in detail stochastic and Non-stochastic effects of radiation.

SHORT ESSAYS (Answer any Three) **3 x 5 = 15 Marks**

3. Explain the construction of Thermoluminescent dosimeter.
4. Photo electric effect
5. Write a short note on rectification.
6. Write a short note on anode heel effect.

SHORT ANSWERS (Answer any Five) **5 x 3 = 15 Marks**

7. Remote control table
8. Inherent filters
9. Fuses
10. Half Value Layer
11. Use of grids
12. Inverse Square Law

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Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Imaging Technology Degree Examination – SEP-2019

Time: 3 Hours **Max. Marks: 40 Marks**

Physics of Radiology

Q.P. Code : 1353

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

(Note : Both QP Codes 1353 and 1354 are to be answered within total duration of 3 hours)

LONG ESSAYS (Answer any One) **1 x 10 = 10 Marks**

1. Describe in detail electro magnetic waves and their properties
2. Describe various types of transformers and construction of the same

SHORT ESSAYS (Answer any Three) **3 x 5 = 15 Marks**

3. The fluorescent effect of x – ray
4. Working of modern x – ray tube
5. Scattered radiation
6. Electromagnetic induction

SHORT ANSWERS (Answer any Five) **5 x 3 = 15 Marks**

7. Half life
8. A C transformer
9. Atomic number
10. Units of radioactivity
11. Decay constant
12. Self rectifying circuit

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