Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Imaging Technology Degree Examination – 16-Jul-2021

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

Physics of Radiology – RS-3
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. Write a note on production of X-rays with neat diagram.
2. Explain the transformer theory with neat diagram.

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

3. Stochastic and deterministic effect
4. Electromagnetic induction
5. Full wave rectifier
6. X-ray spectrum

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

7. Phosphorescence
8. Beta decay
9. Rotating anode
10. Half life
11. Photocell
12. Properties of gamma rays

*****

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Imaging Technology Degree Examination – 14-Jan-2022

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

Physics of Radiology – RS-3
Q.P. Code: 1354

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary
(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 about the components of image intensifier with neat diagram
2. Write a note on radiation protection and ALARA principle

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

3. Methods of cooling in x-ray tube
4. Magnification radiography
5. Rotating anode
6. Filters

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

7. Define Roentgen and Rad
8. Effective dose equivalents
9. HVL and TVL
10. Radioactive decay
11. Atomic number and mass number
12. Characteristic X ray spectrum

*****

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Imaging Technology Degree Examination – 16-Jul-2021

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

Physics of Radiology – RS-3
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. Write in detail about design, construction and radiation protection of 500mA x-ray unite.
2. Explain the construction, working and types of mammographic x-ray tube.

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

3. Space charge compensation
4. Cathode ray tube
5. Explain Geiger muller counter and its uses.
6. Magnification radiography

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

7. Potter-bucky
8. Alara concept
9. Film badge
10. Define inherent filtration and additional filtration.
11. HT cables
12. Portable x-ray unite

*****

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Imaging Technology Degree Examination – 05-Jan-2021

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. Discuss in detail about daylight film handling system.
2. Discuss in detail about Duplication of Radiograph.
3. Describe in detail working principle of Computed Radiography & Advantages and Disadvantages of it.

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

4. Briefly describe production of photographic emulsion.
5. Construction of intensifying screen with neat diagram
6. Discuss about Vacuum and Formatter cassette with neat diagram.
7. Care and Maintenance of automatic processor
8. Describe in detail Composite type of daylight film-handling System.
9. What is fog? Discuss in detail different Types of fog.
10. Density and opacity of the radiographic film.

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

11. Advantages of PQ Developer
12. Quantum Mottle
13. Advantages of using Auto mixers
14. When should safelight tests be carried out?
15. Resolution
16. What is the purpose of replenishment in film processing?
17. Spectral sensitivity

*****

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Imaging Technology Degree Examination – 19-Jul-2021

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

Radiographic Photography and Image Processing (RS-3)
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. Define fog. Describe various factors causing formation of fog and its prevention.
2. What are intensifying screens? Describe in detail about construction of intensifying screen with a neat diagram.
3. Describe the basic principles of digital radiography.

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

4. Wet bench and dry bench.
5. Double emulsion films.
6. Characteristics curve.
7. Resolving power of screen-film system.
8. Constituents of Developer.
9. Avoiding scatter radiation.
10. Methods of processing.

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

11. Hangers.
12. Acid stop bath.
13. Sensitivity speck.
14. Film density.
15. Film identification.
16. Geometric unsharpness.
17. Distortion.

*****