Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. Imaging Technology Examination – 30-May-2024

Time: Three Hours | Max. Marks: 60 Marks

DIAGNOSTIC IMAGING TECHNIQUE (RS3)

Q.P. CODE: 2911

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. Explain the effect of main magnetic field on MR active nuclei inside the human body while placing in the magnetic field and the effect of application of withdrawal of RF pulse in MRI.
2. Define CT number. Discuss briefly CT image reconstruction algorithms.
3. What is ultrasound? Explain the types of interaction of ultrasound with mater.

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

4. **Gray scale imaging in ultrasound and Modes of Display.**
5. MRI contrast media.
6. Data acquired in CT.
7. PET.
8. Quality check and maintenance of CT.
9. State the Larmor equation and its significance.
10. Radionuclide generator.

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

11. T1 weighted image.
12. Cold kit.
13. Coupling agents in ultrasound.
14. Triple phase CT.
15. Radioactivity.
16. Properties of sonic waves.
17. Partial volume artifact in CT.

Rajiv Gandhi University of Health Sciences, Karnataka

Third Year B.Sc. Medical Imaging Technology Degree Examination – 30-May-2024

Time: Three Hours | Max. Marks: 100 Marks

Diagnostic Imaging Techniques and Modalities (RS-4)

Q.P. CODE: 3293

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

LONG ESSAYS (Second Question Choice) 2 x 10 = 20 Marks

1. Explain CT instrumentation in detail and explain slip ring technology
2. Explain five MRI artifacts and their compensations
   OR
   Write brief note on interventional CT guided procedures

SHORT ESSAYS (Question No 5 & 10 choice) 10 x 5 = 50 Marks

3. Data acquisition in CT
4. Doppler effect
5. Importance of informed consent and check list in MRI
   OR
   Ultrasound artifacts
6. Explain spin echo sequence, STIR, FLAIR, Fast spin echo, inversion recovery
7. Third generation CT
8. CT contrast agents
9. Explain MRI zones
10. Storage and disposal of radioactive materials
    OR
    Role of CT technologist in patient preparation, positioning, scanning and documentation
11. Explain computed radiography and digital radiography
12. Gamma camera

SHORT ANSWER 10 x 3 = 30 Marks

13. K-space
14. Explain Larmor Equation, Precessional path and Precessional frequency
15. Spectroscopy (MRS)
16. Diffusion Weighted Imaging (DWI)
17. Explain atomic structure
18. Piezoelectric effect
19. Pixel and Voxel
20. MRI perfusion imaging
21. Signal to noise ratio
22. Contraindications for MRI and importance of Fringe field

Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. (M.I.T) Degree Examination – 03-Jun-2024

Time: Three Hours | Max. Marks: 100 Marks

Radiographic Special Procedures and Patient care (RS-4)

Q.P. CODE: 3294

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

LONG ESSAYS (Second Question Choice) 2 x 10 = 20 Marks

1. Explain percutaneous Transhepatic cholangiography in details.
2. Write in details about barium enema procedure.
   OR
   Discuss the angiography procedure for visceral organs.

SHORT ESSAYS (Question No 5 & 10 choice) 10 x 5 = 50 Marks

3. Contrast media reactions and management.
4. Retrograde Pyeloureterography (RGU).
5. Radiological procedure for Dysphagia.
   OR
   Explain the Hysterosalpingography procedure using Foley's catheter.
6. Illustrate on the diagnostic angiographic catheters with neat diagrams.
7. CT myelographic technique.
8. Explain the anatomy of the salivary glands and discuss the procedure for submandibular gland.
9. Discuss phlebography procedure.
10. Explain the intravenous urographic procedure in children.
    OR
    Explain the characteristics influencing coating of barium suspension in GI tract.
11. **Barium Meal Follow Through (BMFT)**
12. Explain the different oxygen administration methods in emergency.

SHORT ANSWER 10 x 3 = 30 Marks

13. USG contrast media.
14. Steps in open gloving technique with diagram.
15. Difference between single and double contrast studies.
16. How can barium be used for demonstration of trachea-oesophageal fistula.
17. Write a note on biomedical waste management.
18. Nephrotomogram.
19. Elaborate the communication skills while handling patients with impaired vision.
20. Write the indications, instruments and complications of Dacrocystography.
21. Write the pitfalls in T-tube cholangiography.
22. Advantages and disadvantages of enteroclysis.

Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. Imaging Technology Examination – 03-Jun-2024

Time: 3 Hours | Max. Marks: 30

RADIOGRAPHIC TECHNIQUES – I (RS-3)

Q.P. Code: 2912

Your answers should be specific to the questions asked

Draw neat, labeled diagrams wherever necessary

(Note: Both QP Codes 2912 and 2913 are to be answered within total duration of 3 hours)

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

1. Explain various projections for cranial bones
2. Describe the routine and supplementary views for cervical spine

SHORT ESSAYS (Answer any Two) — 2 x 5 = 10 Marks

3. Radiography projection for hand
4. Apicogram
5. Acute abdomen series

SHORT ANSWERS (Answer any Five) — 5 x 2 = 10 Marks

6. Name all the tarsal bones
7. Orthopantomography
8. Frog leg projection
9. Projection for patella
10. Ball Cathers View
11. Views for Lumbo Sacral Region

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Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. Imaging Technology Examination – 03-Jun-2024

Time: 3 Hours | Max. Marks: 30 Marks

RADIOGRAPHIC TECHNIQUES – II (RS3)

Q.P. Code: 2913

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

(Note: Both QP Codes 2912 and 2913 are to be answered within total duration of 3 hours)

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

1. Intravenous urography.
2. Small bowel enema.

SHORT ESSAYS (Answer any Two) 2 x 5 = 10 Marks

3. Micturating cystourethrography.
4. Arthrography.
5. CT myelography.

SHORT ANSWERS (Answer any Five) 5 x 2 = 10 Marks

6. Oral cholecystography.
7. Lymphangiography.
8. Crash cart.
9. Direct portal venography.
10. Orthopantomography.
    Or
    Ten-Day Rule.
11. Percutaneous transluminal angioplasty.

Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. Imaging Technology Examination – 22-Nov-2024

Time: Three Hours | Max. Marks: 60 Marks

DIAGNOSTIC IMAGING TECHNIQUE (RS3)

Q.P. CODE: 2911

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. Briefly explain about pulse sequences.
2. Write different types of transducers used in ultrasound. Draw and label a diagram of the transducer.
3. Write essay on principles of Flow techniques, MRA in MRI scan.

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

4. Acoustic coupling media.
5. Principles of tracer technique.
6. Gradient coil.
7. **Doppler- Principles and its types.**
8. Artifacts in CT Scan.
9. Characteristics of Ultrasound.
10. SPECT.

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

11. **MR Magnets**
12. Spiral CT.
13. Radioactivity.
14. B – Mode.
15. DICOM.
16. Window width and level.
17. **Proton Density contrast**

Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. (M.I.T) Degree Examination – 22-Nov-2024

Time: Three Hours | Max. Marks: 100 Marks

Diagnostic Imaging Techniques and Modalities (RS-4)

Q.P. CODE: 3293

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

LONG ESSAYS (Second Question Choice) 2 x 10 = 20 Marks

1. Explain digital subtraction angiographic (DSA) technique in detail.
2. Explain the gradient Echo pulse sequences.
   OR
   Elaborate about the Doppler principle and types of Doppler instrumentation.

SHORT ESSAYS (Question No 5 & 10 choice) 10 x 5 = 50 Marks

3. Note on isotope calibrator.
4. Time of flight phenomena and compensation.
5. HRCT temporal bone protocol.
   OR
   CT Brain angiogram protocol.
6. Explain ring artifact and partial volume artifact in CT and its remedies.
7. Procedure for gastric emptying scintigraphy.
8. Explain direct and indirect digital radiography.
9. Write a note on K-space filling and types.
10. Explain the parameters affecting contrast to Noise ratio (CNR) in MRI.
    OR
    Note on Echo planar imaging (EPI).
11. B-mode and M-mode in ultrasound.
12. MRI – cervical spine protocol.

SHORT ANSWER 10 x 3 = 30 Marks

13. Note on timing parameters in MRI.
14. Explain the methods of disposal of radioactive waste materials.
15. Draw a neat labelled diagram of the mammography equipment.
16. Cross excitation and cross talk artifacts in MRI.
17. Patient preparation for cardiac MRI.
18. Explain a) Window level b) CT number c) Pixel
19. Draw a neat labelled diagram of transducer.
20. Wipe testing in Nuclear medicine departments.
21. **Image intensifier closed circuit television system (IITV)**
22. Scintillation detector in CT.

Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. Imaging Technology Examination – 25-Nov-2024

Time: 3 Hours | Max. Marks: 30

RADIOGRAPHIC TECHNIQUES – I (RS-3)

Q.P. Code: 2912

Your answers should be specific to the questions asked

Draw neat, labeled diagrams wherever necessary

(Note: Both QP Codes 2912 and 2913 are to be answered within total duration of 3 hours)

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

1. Explain the routine and supplementary projections thorax
2. Explain the use of accessory devices in radiographic positioning

SHORT ESSAYS (Answer any Two) — 2 x 5 = 10 Marks

3. Name the cranial bones and explain its routine views
4. Scaphoid series
5. Ortho Pantomography (OPG)

SHORT ANSWERS (Answer any Five) — 5 x 2 = 10 Marks

6. Extraoral projections
7. Ball catchers view
8. Views for Sacro Iliac (SI) joint
9. Frog leg view
10. Open mouth view
11. Routine projections for thumb

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Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. Imaging Technology Examination – 25-Nov-2024

Time: 3 Hours | Max. Marks: 30 Marks

RADIOGRAPHIC TECHNIQUES – II (RS3)

Q.P. Code: 2913

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

(Note: Both QP Codes 2912 and 2913 are to be answered within total duration of 3 hours)

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

1. Describe myelography under the following headings:
   a) Indication and contraindication
   b) Preparation of the patient
   c) Procedure
   d) Trolley settings
   e) After care of the patient
2. Describe coronary angiography under the following headings:
   a) Indication and contraindication
   b) Preparation of the patient
   c) Contrast media
   d) Procedure including recommended views
   e) After care of the patient and complications

SHORT ESSAYS (Answer any Two) 2 x 5 = 10 Marks

3. Explain in detail about adverse reactions of contrast media and its management.
4. Catheters and guide wires
5. Endoscopic retrograde choledocho pancreatography

SHORT ANSWERS (Answer any Five) 5 x 2 = 10 Marks

6. Sialography
7. T tube choledochography
8. Enteroclysis
9. Discuss the technique and radiography of double contrast barium enema
10. Percutaneous nephrostomy
11. Hypotonic duodenography

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Rajiv Gandhi University of Health Sciences, Karnataka

Third Year B.Sc. Medical Imaging Technology Degree Examination – 25-Nov-2024

Time: Three Hours | Max. Marks: 100 Marks

Radiographic Special Procedures and Patient care (RS-4)

Q.P. CODE: 3294

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

LONG ESSAYS (Second Question Choice) 2 x 10 = 20 Marks

1. Describe intravenous urography through in adult under the following heading
   a) Indication and contraindication
   b) Preparation of the patient
   c) Contrast media
   d) Procedure including recommended
   e) Aftercare of the patients

2. **Discuss in detail the technique of small bowel enema**
   OR
   Describe in detail the indication and procedure of peripheral limb angiography.

SHORT ESSAYS (Question No 5 & 10 choice) 10 x 5 = 50 Marks

3. Ascending uretherography in male
4. Percutaneous transluminal angioplasty
5. Infection control techniques.
   OR
   Hepatic Venography.
6. Biphasic study of upper GIT.
7. Cysto-urethrography
8. Lower limb venography
9. Catheters and guidewires
10. Informed consent
    OR
    Emergency equipment used in radiology department
11. Renal Arteriography
12. Sialography.

SHORT ANSWER 10 x 3 = 30 Marks

13. Positive contrast media
14. Myelogram- Definition and indication.
15. HSG
16. Uses of pig tail catheters
17. Dacrocystography
18. Emergency drugs used in radiology
19. Indications for barium swallow
20. Direct portal venography
21. Macroradiography
    Or
    Contrast media used in USG
22. Responsibilities of a imaging technologists in radiography

Rajiv Gandhi University of Health Sciences, Karnataka

Correction 25.11.2024 Morning

Q.P Code: 3294

Read the question No. 2as

2. Discuss in detail the technique of small bowel enema

OR

Describe in detail the indication and procedure of peripheral limb angiography.

Replace the question No.5 as

5. Infection control techniques.

OR

Hepatic Venography.

10. Informed consent

OR

Emergency equipment used in radiology department

14. Myelogram- Definition and indication.

21. Contrast media used in USG