Rajiv Gandhi University of Health Sciences, Karnataka

II Year M. Sc Medical Imaging Technology - 17-May-2023

Time: 3 Hours **Max. Marks: 80**

ADVANCED TECHNIQUE AND INSTRUMENTATION OF MRI
Q.P. CODE: 9545

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

Answer All The Questions **08 X 10 = 80 Marks**

1. Explain the MR instrumentation.
2. What is pulse sequence? Discuss on the types of pulse sequence.
3. MRI protocol for hemiplegia patients.
4. CISS sequence and its application.
5. K-space.
6. Phase contrast angiography.
7. Write a note on spine-lattice relaxation.
8. Write a note on artifacts.

II Year M. Sc Medical Imaging Technology - 19-May-2023

Time: 3 Hours **Max. Marks: 80**

INTERVENTIONAL RADIOLOGY TECHNIQUES
Q.P. CODE: 9546

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

Answer All The Questions **08 X 10 = 80 Marks**

1. Radiation safety to be followed in cathlab
2. Various neurointervention done in cathlab. Discuss any one.
3. Explain about the room design for IR.
4. Types of angiographic techniques and brief about them
5. 3D rotational angiography
6. Various technique for sterilization of equipments
7. Vertebroplasty. Discuss the procedure.
8. Sheldinger technique

Rajiv Gandhi University of Health Sciences, Karnataka

II Year M. Sc Medical Imaging Technology - 22-May-2023

Time: 3 Hours **Max. Marks: 80**

CARE OF PATIENTS IN DIAGNOSTIC RADIOLOGY
Q.P. CODE: 9547

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

Answer All The Questions **08 X 10 = 80 Marks**

1. Explain in detail about clinical and ethical responsibilities of an imaging technologist.
2. Describe the care taken in a radiology department while taking spine x rays for patients with vertebral injuries.
3. First aid X ray department.
4. Care and education for patient undergoing HSG.
5. Explain various radiation protective measures for patients.
6. Pre and post procedure of Biliary tract investigation.
7. Role of radiographer in handling adverse contrast reaction.
8. Instruction given before receiving the patient for CT procedure.

II Year M. Sc Medical Imaging Technology - 24-May-2023

[Time: 3 Hours] **[Max. Marks: 80]**

Radiation Evaluation and Protection in Diagnostic Radiology
Q.P. CODE: 9548

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

Answer All The Questions **08 X 10 = 80 Marks**

1. Define the aim of radiation protection. Explain ALARA concept and the principle of radiation protection.
2. Radiation protection measures employed during fluoroscopy procedures.
3. Area monitoring devices.
4. Tissue weighting factor and radiation weighting factor.
5. Regulatory bodies involved in radiation protection.
6. Dosed limits for occupational workers and public according to ICRP.
7. Describe acute radiation syndrome (ARS) along with major respone stages involved in it.
8. Cellular effects of irradiation.

Rajiv Gandhi University of Health Sciences, Karnataka

II Year M. Sc Medical Imaging Technology - 26-May-2023

Time: 3 Hours **Max. Marks: 80**

NUCLEAR MEDICINE IMAGING TECHNIQUES
Q.P. CODE: 9549

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

Answer All The Questions **08 X 10 = 80 Marks**

1. Explain quality assurance test of imaging equipment (gamma camera) in nuclear medicine.
2. Explain about different labelled compounds with TC 99m isotopes cold kits.
3. Dose calibrator and its types
4. Modes of administration of isotopes
5. Explain bone scan.
6. Working principle of ionization chamber
7. SPECT imaging
8. Disposal of radioactive waste

II Year M. Sc Medical Imaging Technology - 23-Nov-2023

[Time: 3 Hours] **[Max. Marks: 80]**

Advanced Technique and Instrumentation of MRI
Q.P. CODE: 9545

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

Answer All The Questions **08 X 10 = 80 Marks**

1. Explain flow phenomena and their compensation techniques.
2. Explain different options for K space filling in short.
3. Write a note on balanced gradient echo.
4. Write a note on cardiac gating.
5. Explain clinical application of diffusion imaging in detail.
6. **Write a note on Phase contrast MRA**
7. Is superconducting MR magnet ever turned off? Explain magnetic quenching in detail.
8. What is b-value? What b value should we choose to create optimal images?

Rajiv Gandhi University of Health Sciences, Karnataka

II Year M. Sc Medical Imaging Technology - 28-Nov-2023

Time: 3 Hours **Max. Marks: 80**

INTERVENTIONAL RADIOLOGY TECHNIQUES
Q.P. CODE: 9546

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

Answer All The Questions **08 X 10 = 80 Marks**

1. Describe various Digital Subtraction Techniques.
2. Discuss any one non neuroinrventional procedures.
3. Describe the pre procedure and post procedure care for interventional procedures.
4. Role of radiographer in interventional procedure
5. Emergency drugs and equipments used in interventional radiology
6. Explain laser guided procedure.
7. Protective devices used in cathlab
8. Image Intensifier

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II Year M. Sc Medical Imaging Technology - 02-Dec-2023

Time: 3 Hours **Max. Marks: 80**

CARE OF PATIENTS IN DIAGNOSTIC RADIOLOGY
Q.P. CODE: 9547

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

Answer All The Questions **08 X 10 = 80 Marks**

1. What is medico-legal cases? Write the legal responsibility of imaging technologist.
2. Write the management of adverse contrast reaction in CT.
3. Write the management extravasation of contrast.
4. What are the vital signs and its normal values?
5. Disposal of sharps needle and note on needle stick injury.
6. Care of pregnant patient in radiology department.
7. Write a short note on patient preparation in MRI
8. What is informed consent why it is important in radiology department?

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Rajiv Gandhi University of Health Sciences, Karnataka

II Year M. Sc Medical Imaging Technology - 05-Dec-2023

Time: 3 Hours **Max. Marks: 80**

RADIATION EVALUATION AND PROTECTION IN DIAGNOSTIC RADIOLOGY
Q.P. CODE: 9548

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

Answer All The Questions **08 X 10 = 80 Marks**

1. Describe in detail about biological effects of radiation.
2. Discuss in detail radiation protection in diagnostic radiology.
3. Write in detail about designing of an X ray room layout.
4. Radiation quantities and units
5. Area monitoring devices
6. Deterministic and stochastic effects of radiation
7. Acute and chronic effects of ionizing radiation
8. Explain thermo luminescent dosimeter with its advantages and application.

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II Year M. Sc Medical Imaging Technology - 07-Dec-2023

[Time: 3 Hours] **[Max. Marks: 80]**

NUCLEAR MEDICINE IMAGING TECHNIQUES
Q.P. CODE: 9549

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

Answer All The Questions **08 X 10 = 80 Marks**

1. Explain in detail about the construction and working principle of gamma camera.
2. Explain briefly about radio nuclide generator wiyh neat labelled diagram.
3. Explain l 131 therapy for thyrotoxicosis and thyroid ablation.
4. Factors affecting PET
5. Explain about radiation survey meter.
6. Quality control tests for PET and SPECT
7. Disposal of radioactive waste
8. Explain about preparation and procedure for renal scan.

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