

**THIRD YEAR B.Sc (MRT) DEGREE EXAMINATION.....20**

**Paper XII RADIO DIAGNOSIS II**

**Model Question Paper**

Answer all Questions  
Draw diagrams wherever necessary

**Time 3 hrs**

**Max Marks:100**

**Essays**

**(3×10=30)**

1. Describe the radiological anatomy of biliary system. Explain the investigations used in the evaluation of biliary system. Add a note on post operative cholangiography
2. Explain radiological anatomy of cerebra arteries. Describe the procedure of cerebral angiography
3. Briefly describe the anatomy of kidney and the procedure of IVP

**Short Notes**

**( 8×5=40)**

4. CT protocol for adrenal gland
5. Compare and contrast the basics of CT and MR
6. Retrograde urography
7. Preparation for intravenous pyelogram
8. Radiological anatomy of esophagus and explain barium swallow
9. Image intensifier
10. Explain the procedure of myelography
11. Basic principles of coronary angiography

**Answer briefly**

**(10×3=30)**

12. Contrast media used in IVP
13. Biomedical effects of MR
14. Basic principles of fluoroscopy
15. Basic principles of coronary angiography
16. Kymography
17. Substraction radiography
18. Mention any four pulse sequences used in MR imaging. Write clinical use of any of them
19. Radiographic pelvimetry
20. Radiographic anatomy of large bowel and the procedure of barium enema
21. Endoscopic retrograde cholangiography

**THIRD YEAR B.Sc (MRT) DEGREE EXAMINATION.....20**

**Paper XIII RADIOTHERAPY II**

**Model Question Paper**

Answer all Questions  
Draw diagrams wherever necessary

**Time 3 hrs**

**Max Marks:100**

**Essays**

**(3×10=30)**

1. Describe the aetiology, pathology, staging, investigations and treatment including RT Planning and brachytherapy of carcinoma of cervix
2. Define and classify brachytherapy. Explain the different types of brachytherapy with examples
3. Explain carcinoma rectum- general management and radiotherapy techniques including field borders and target volume. Mention acute and late toxicities following radiotherapy for rectal cancers.

**Short Notes**

**( 8×5=40)**

4. Craniospinal irradiation
5. RT planning in breast cancer
6. Linear accelerator
7. Advantages of 3DCRT and IMRT over conventional (2D) planning
8. Glioblastoma Multiforme
9. Electron beam therapy and its clinical application
10. Role of CT Scan in oncology
11. Explain lymph node levels in head and neck cancers

**Answer briefly**

**(10×3=30)**

12. Hodgkins lymphoma staging
13. Spinal cord compression
14. Iodine 131
15. Simulator
16. Chemotherapy in breast cancer
17. Explain the radiotherapy technique for T1/T2 Ca larynx
18. Radiation therapy in seminoma testis
19. Concurrent chemoradiation
20. Hormone therapy in breast cancer
21. Spinal cord compression

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**Paper XIV RADIATION PHYSICS II**

**Model Question Paper**

Answer all Questions  
Draw diagrams wherever necessary

**Time 3 hrs**

**Max Marks:100**

**Essays**

**(3×10=30)**

1. Explain with neat diagram the construction and working of medical linear accelerator.
2. Explain PDD and what are the factors affecting PDD.
3. Explain effective SSD for an electron beam and its clinical applications.

**Short Notes**

**(8×5=40)**

4. Wedge filters
5. Role of TPR in dosimetry
6. Define wedge angle and Hinge angle with suitable equations
7. Compensator and its design
8. Phantom materials
9. Derive Mayneord F factor
10. Different types of penumbra
11. What is TAR and compare with PDD

**Answer briefly**

**(10\*3=30)**

12. Define point A and point B
13. Isocentre
14. BSF
15. Beam shaping devices
16. Sources used in brachytherapy applications
17. Decay scheme of cobalt 60
18. Define Roentgen and what is its limitation
19. Exposure
20. MLC
21. Isodose charts

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**Paper XV RADIOLOGICAL PROTECTION AND STATUTORY ASPECTS**

**Model Question Paper**

Answer all Questions  
Draw diagrams wherever necessary

**Time 3 hrs**

**Max Marks:100**

**Essays**

**(3×10=30)**

1. Explain the principle of gas filled detector with a neat diagram and graph
2. Explain the ICRP recommendation system in radiological protection
3. Explain the fundamental principles of radiological protection

**Short Notes**

**( 8×5=40)**

4. Quenching in GM detector
5. RHM and RMM
6. Stochastic and non stochastic effects of radiation
7. Equivalent dose and effective dose
8. Oxygen effect
9. HVL and TVL
10. Film badge dosimeter
11. RBE and LET

**Answer briefly**

**(10×3=30)**

12. Tissue weighting factor
13. Radiation weighting factor
14. Effects of radiation on DNA
15. Transport index
16. Roentgen
17. Kerma
18. Sources of radiation
19. ALARA
20. Types of packages
21. Committed and collective dose