

- Q.29 Draw the labelled block diagram of X-ray.
- Q.30 Write a short note on the photoelectric effect caused by X-rays.
- Q.31 Write five basic components of CT.
- Q.32 Write a short note on the working of image intensifier.
- Q.33 Explain B mode in USG in a short note.
- Q.34 What is CT dose? Explain in a short note.
- Q.35 Describe the Biological effects of Ionizing radiation in a short note.

#### SECTION-D

**Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

- Q.36 Write working principle of CT and explain its system components.
- Q.37 Draw the block diagram of MRI machine and explain its parts.
- Q.38 Explain conventional X-ray radiography with its basic components.

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#### 5th Sem / Branch : Med. Eltx. Sub.: Medical Imaging Techniques (MIT)

Time : 3Hrs.

M.M. : 100

#### SECTION-A

**Note:** Multiple choice questions. All questions are compulsory (10x1=10)

- Q.1 Compton effect shows that
- X-rays are waves
  - X-rays have high energy
  - X-rays can penetrate matter
  - Photons have momentum
- Q.2 What does "MRI" stand for ?
- Magneto-Ray Idometry
  - Medical Radiometry Instrument
  - Magnetic Resonance Imaging
  - Maximal Radiology Imaging
- Q.3 Which is not a part of USG
- Transducer
  - Probe
  - X-ray Tube
  - Detector
- Q.4 Magnetic field is used for imaging in
- USG
  - MRI
  - Ventilator
  - X-Rays

- Q.5 Select the wavelength of X rays  
 a) 1 mm to 700mm      b) 400 nm to 1 nm  
 c) 1 nm to 0.001 nm      d) 0.1 m to 1 mm
- Q.6 Stationary anode type X-ray tube is used in  
 a) MRI      b) Ventilator  
 c) Both (a) & (b)      d) X-Ray
- Q.7 In X-ray emission tubes, X-ray is emitted by the acceleration of \_\_\_\_\_  
 a) Atoms      b) Protons  
 c) Electrons      d) Neutrons
- Q.8 Color Doppler is used in  
 a) X-ray      b) Ventilator  
 c) USG      d) MRI
- Q.9 Line focus principle is used in  
 a) USG      b) X-ray  
 c) MRI      d) ECG
- Q.10 Image intensifiers convert low energy x-radiation into visible light images in  
 a) X-rays      b) MRI  
 c) Ventilator      d) USG

### SECTION-B

**Note:** Objective type questions. All questions are compulsory. (10x1=10)

- Q.11 Write name of one radioactive material.

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- Q.12 Write full form of CT.
- Q.13 Write name of one machine which uses radiation for imaging.
- Q.14 Write one use of gamma camera.
- Q.15 Name one component of X-ray.
- Q.16 Write one biological effect of USG.
- Q.17 Write the name of equipment which uses filament circuit.
- Q.18 Write full form of FID.
- Q.19 Name one component of MRI.
- Q.20 Write one difference between stationary anode and rotating anode type X-ray tube.

### SECTION-C

**Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

- Q.21 Draw the block diagram of mammography.
- Q.22 Write a short note in the need of grid in X-rays.
- Q.23 Write a short note on Doppler effect.
- Q.24 Write a short note on any one generation on CT.
- Q.25 Short note on Larmer frequency.
- Q.26 Explain the biological effect of ultrasound.
- Q.27 Write a short note on NMR coil.
- Q.28 Explain the angiography procedure in a short note.

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