Q.30 Write a short note on maintenance of radiology equipments.

Q.31 What are the components of digital radiography system. Explain it.

Q.32 Explain advantages of digital subtraction angiogram.

Q.33 Describe the Biological effects of Ionizing radiation.

Q.34 Explain Biological effects of magnetic fields and safety requirements for MRI Machine.

Q.35 Write a note on Pulse echo technique.

SECTION-D

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

Q.36 Explain different generations in CT Scanner in details.

Q.37 Explain origin and nature of X-rays. Also discuss x-ray machine with diagram.

Q.38 Explain in details the generation & detection of ultrasonic waves.

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6th Sem / Branch : Medical Electronics
Sub. : Radiology & Imaging (RI)

Time : 3Hrs. M.M. : 100

SECTION-A

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

Q.1 Gradual decrease in X-Ray beam intensity as it passes through materials called

a) Attenuation b) Decay
c) Imaging d) None of the above

Q.2 Speed of Ultrasound depends upon

a) Medium b) Amplitude
c) Wavelength d) Material

Q.3 Wavelength of X-Ray are in range of

a) 10^{-8} to 10^{-13} m b) 10^{-7} to 10^{-14} m
c) 10^{-10} to 10^{-15} m d) 10^{2} to 10^{9} m

Q.4 As the X-Ray passes through the matter, its intensity

a) Increases
b) Decreases
c) Remains constant
d) Depends on the object

Q.5 A sound which has higher frequency than human hearing limit is called

a) Infrasonic b) Ultrasonic
c) Supersonic d) Megasonic

Q.6 MRI Stands for
a) Magneto Ray Idometry
b) Medical Radiometry Instrument
c) Magnetic resonance Imaging
d) Maximal Resonance Imaging

Q.7 Which of the following is the formula for pH calculation?
a) log10[H+] b) -log10[H+]
c) log2[H+] d) -log2[H+]

Q.8 The major advantage of MRI is
a) The ease with which equipment is updated or replaced
b) Relatively Low cost
c) Not required specialized room
d) Ability to reposition the 'cross section' through the body without repositioning the patient

Q.9 What is major health concern with MRI
a) Reaction to applied drugs
b) Extreme cold
c) Radiation Dose
d) Localized burns due to metallic implants

Q.10 Maximum approved strength of MRI for patient
a) 7.0 T b) 5.0 T
c) 1.5 T d) 3.0 T

SECTION-B

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

Q.11 Expand USG.
Q.12 Electrode.
Q.13 Semiconductor.
Q.14 Expand PET.
Q.15 What is Radioactive decay.
Q.16 Expand NMR.
Q.17 What is Angiogram?
Q.18 What is Radioactivity.
Q.19 Collimator
Q.20 Cathode.

SECTION-C

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

Q.21 Write a note on Mobile X-Rays.
Q.22 Explain the process of developing X-ray in dark room.
Q.23 Write a note on Gamma Camera.
Q.24 Explain Transducer & its classification.
Q.25 List down the properties of X-rays.
Q.26 Explain Doppler effect.
Q.27 Discuss about the working principle of MRI machine.
Q.28 Write a note on radioactive decay.
Q.29 Explain A-Mode in USG.