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Question Paper Code: 56B01

B.E. / B.Tech. DEGREE EXAMINATION, DEC 2020

Sixth Semester

Biomedical Engineering

15UBM601- MEDICAL IMAGING EQUIPMENTS

(Regulation 2015)

Duration: 1.15 hrs

Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

(Answer any six of the following questions)

- _____ is the practice of producing two-dimensional images using x-ray radiation CO1- R
(a) Computed tomography (b) Projectional radiography
(c) Fluoroscopy (d) Radiotherapy
- Mammography is used to examine the: CO1- U
(a) Heart (b) Breast (c) Kidney (d) Lung
- A _____ is a device that narrows a beam of particles or waves. CO2- R
(a) detector (b) collimator (c) electrode (d) CT tube
- North – East diagonal of the matrix CO2- U
 $\begin{bmatrix} 2 & 0 \\ 1 & 3 \end{bmatrix}$ is:
(a) $\begin{bmatrix} 12 & 6 \\ 9 & 15 \end{bmatrix}$ (b) $\begin{bmatrix} 2 & 0 \\ 1 & 3 \end{bmatrix}$ (c) $\begin{bmatrix} 7 & 6 \\ 8 & 10 \end{bmatrix}$ (d) $\begin{bmatrix} 2 & 1 \\ 1 & 3 \end{bmatrix}$
- Magnetic resonance technique _____ CO3- U
(a) NMR (b) CMRR (c) LASER (d) LDR
- The use of superconducting magnets in MRI is to obtain CO3- U
(a) Signals from surface tissues (b) High R.F.field
(c) High strength gradient fields (d) High strength magnetic field

7. Radioisotopes are isotopes of an element CO4- U
 (a) radio (b) radioactive (c) radio-passive (d)infrared
8. During irradiation with X-rays, gamma rays and particle radiation, CO4- U
 damage is caused to living cells because of _____ atoms and
 molecules.
 (a) Creation (b) Destruction (c) Scattering (d) Ionisation
9. The purpose of Radiation Therapy is _____. CO5- R
 (a) To treat Benign tumors (b) To treat malignant tumors
 (c) To treat swelling (d) To treat small intestine
10. Regulation is essential to control _____ exposure CO5- R
 (a) skin radiation (b) medical radiation
 (c) gamma radiation (d) X ray radiation

PART – B (3 x 8= 24 Marks)

(Answer any three of the following questions)

11. Explain in detail the X ray equipment. CO1- U (8)
12. Describe the spiral CT scanning in detail. CO2- U (8)
13. Explain the block diagram approach of MRI system CO3- U (8)
14. Explain in detail the radio detectors techniques. CO4- U (8)
15. Explain the Recent Techniques in radiation therapy CO5- U (8)

