Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_



**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

**End Semester Examination – Nov/Dec– 2017**

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| **Code :** | **15EI2012** | **Duration :** | **3hrs** |
| **Sub. Name :** | **RADIOLOGICAL IMAGING TECHNIQUES** | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Identify the applications of Angiography in various medical applications. | CO2 | 10 |
| b. | Examine the principle of back projection method in CT. | CO1 | 10 |
| (OR) | | | | |
| 2. | a. | Compute the maximum photon energy of the radiated X-rays for a tungsten anode voltage of 100KV. Also compute the efficiency of X-ray production and the shortest wavelength of the produced X-rays. | CO1 | 10 |
| b. | Analyse the working principle of X-ray Machine. | CO2 | 10 |
|  |  |  |  |  |
| 3. |  | Justify the following statement: MRI is superior than other imaging systems, and illustrate the constructional working of MRI. | CO1 | 20 |
| (OR) | | | | |
| 4. | a. | Explain positrons? How it is used for imaging? | CO1 | 10 |
|  | b. | Differentiate between PET and SPECT. | CO2 | 10 |
|  |  |  |  |  |
| 5. | a. | Explain the principle of Nuclear Magnetic Resonance Imaging. | CO1 | 10 |
|  | b. | Contrast between soft and hard X-rays. | CO2 | 10 |
| (OR) | | | | |
| 6. | a. | Distinguish between the different types of CT scanner. | CO2 | 10 |
|  | b. | Analyze the concept of Spin Lattice Relaxation time. | CO2 | 10 |
|  |  |  |  |  |
| 7. |  | Outline the different modes of Ultrasonic display and discuss about the applications of the same. | CO2 | 20 |
| (OR) | | | | |
| 8. |  | Explain how dynamic focusing and beam steering are possible with phased array ultrasonic transducer. Compare it performance with that of linear array transducer. | CO3 | 20 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. |  | Illustrate the salient features of different types of Thermography with its applications. | CO3 | 20 |

ALL THE BEST