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 :** | **15EI2002** | **Duration :** | **3hrs** |
| **Sub. Name :** | **MEDICAL ELECTRONICS** | **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. | Discuss the principle and application of PIN, Varactor and Zener Diodes. | CO3 | 12 |
| b. | Explain in detail about the bio-electrical activity of heart with neat sketch. | CO2 | 8 |
| (OR) | | | | |
| 2. | a. | Discuss the overview importance of biomedical Instruments. | CO2 | 10 |
| b. | Explain about the principles of measurement for bioelectrical impedance. | CO2 | 10 |
|  |  |  |  |  |
| 3. | a. | Explain the electrical activity associated with one contraction in a Muscle and EOG. | CO3 | 10 |
| b. | Narrate how to amplify a Bio-signal using BJT and Mentions the issues while designing the circuit. | CO3 | 10 |
| (OR) | | | | |
| 4. | a. | Discuss the VI Characteristics of PN junction diode. | CO3 | 10 |
| b. | Explain in detail about the full wave rectifier with neat block diagram. | CO3 | 10 |
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| 5. | a. | Explain the construction and operation of BJT as switch. | CO2 | 10 |
| b. | With the neat sketch draw different types of transistor configuration and its applications. | CO1 | 10 |
| (OR) | | | | |
| 6. | a. | Discuss the overview importance and the working principle of Opto-coupler for medical field. | CO1 | 10 |
| b. | With neat sketch draw the hybrid model for transistor amplifier and Narrate the reason behind selecting Hybrid model for Transistor amplifier design. | CO1 | 10 |
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| 7. | a. | Describe the working of Enhancement type MOSFET with neat sketch. | CO3 | 10 |
| b. | Discuss in detail about the Hybrid Parameter model for Transistor amplifier with neat sketch and equation of Current gain, Voltage gain, Input impedance and output admittance. | CO2 | 10 |
| (OR) | | | | |  |  |
| 8. | a. | Explain in detail about UJT with equivalent circuit diagram. | CO3 | 10 |
| b. | Write the medical applications of MOSFET. | CO1 | 10 |
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|  | | **Compulsory:** |  |  |
| 9. | a. | Discuss in detail about the Colpitts oscillator circuit. | CO3 | 10 |
| b. | Explain the concepts involved in RC oscillators. | CO3 | 10 |

ALL THE BEST