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



**End Semester Examination – Nov / Dec – 2019**

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| **Code :** | **17BM2004** | **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. | Explain in detail about the half wave bridge type rectifier with neat sketch. | CO 3 | **10** |
| b. | Discuss the Voltage & Current Characteristics of PN junction diode in detail. | CO 2 | **10** |
| (OR) | | | | |
| 2. | a. | In common base configurations, current amplification factor is 0.9. If the emitter current is 1 mA, determine the value of base current. | CO 2 | **8** |
| b. | A transistor connected in common emitter configurations in which collector supply is 8 volts and the voltage drop across resistance Rcconnected in the collector circuit is 0.5 volts. The value of Rc = 800Ω. if α=0.96, Determine (i) Collector emitter voltage, (ii) base current. | CO 2 | **12** |
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| 3. | a. | Discuss on the special purpose diode with its applications. | CO 3 | **10** |
|  | b. | Explain the operation of transistor as an amplifier using Common emitter configurations. | CO 2 | **10** |
| (OR) | | | | |
| 4. | a. | Summarize the concept involved in measuring Bio-impedance with its relevant diagrams. | CO 3 | **10** |
|  | b. | Illustrate in detail on Opto - Coupler & optical methods with medical applications. | CO 1 | **10** |
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| 5. | a. | Discuss the nonelectric Bio-signal measurement methods with neat diagrams. | CO 6 | **10** |
|  | b. | Explain the bioelectrical activity of heart and muscle with its relevant diagrams. | CO 1 | **10** |
| (OR) | | | | |
| 6. | a. | Sketch the N-channel JFET with the construction and working principle. | CO 5 | **10** |
|  | b. | Discuss in detail on VMOSFET and CMOS with neat diagram. | CO 3 | **10** |
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| 7. | a. | Explain the construction of Enhancement & Depletion type MOSFET with neat diagram. | CO 5 | **20** |
| (OR) | | | | |
| 8. | a. | Illustrate the details of Uni-junction transistor with a physical structure and also explain how it is used as an saw tooth generator. | CO 4 | **20** |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. | a. | Describe in detail on the concepts involved in RC phase shift oscillators using op-amp with the neat sketch. | CO 4 | **20** |