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



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

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| **Code :** | **16EC2004** | **Duration :** | **3hrs** |
| **Sub. Name :** | **ELECTRON DEVICES AND CIRCUITS** | **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 the construction, working principle and applications of PN diode with necessary diagrams. | CO1 | 15 |
| b. | Express the current components of PN diode with neat diagram. | CO1 | 5 |
| **(OR)** | | | | |
| 2. | a. | Compare and contrast PN diode and Zener diode. | CO1 | 5 |
| b. | Illustrate and explain the construction, working principle and characteristics of Zener diode. | CO1 | 15 |
|  |  |  |  |  |
| 3. |  | Outline the construction details of Bipolar Junction Transistor. Describe the operation of NPN and PNP transistors. | CO1 | 20 |
| **(OR)** | | | | |
| 4. | a. | Compare the performance of a transistor in different configurations. | CO1 | 5 |
| b. | Make use of the laboratory setup diagram and explain the static characteristics of common-emitter configuration. | CO1 | 15 |
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| 5. | a. | With neat diagrams, explain the structure, operation and characteristics of N-channel JFET. | CO1 | 15 |
| b. | Compare JFET with MOSFET. | CO1 | 5 |
| **(OR)** | | | | |
| 6. |  | Explain the principle of operation of two stage RC coupled amplifier with neat circuit diagram. | CO2 | 20 |
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| 7. |  | Illustrate and explain the circuit diagram, operation of class – B push- pull amplifier. Derive expression for output power and efficiency. | CO2 | 20 |
| **(OR)** | | | | |
| 8. | a. | Describe the working of single tuned inductively coupled transistor amplifier with necessary diagram. | CO2 | 8 |
| b. | Explain the operation of emitter coupled differential amplifier with  neat circuit diagram. Derive the expression for CMRR. | CO2 | 12 |
|  | | **Compulsory**: |  |  |
| 9. |  | What is an oscillator? List different types of oscillator. Explain the working of RC phase shift oscillator with neat circuit diagram and derive the expression for frequency of oscillation. | CO3 | 20 |