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 – 2016**

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|  |  | **Semester :** | **2016-17 ODD** |
| **Code :** | **13EC101** | **Duration :** | **3hrs** |
| **Sub. Name :** | **BASIC ELECTRONICS ENGINEERING** | **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 about rheostat and trimmer with suitable diagrams. | CO1 | 8 |
| b. | Explain in detail, the various types of capacitors with a neat diagram. | CO1 | 12 |
| **(OR)** | | | | |
| 2. | a. | Discuss the formation of P-type and N-type semiconductor with neat diagram. | CO1 | 14 |
| b. | Explain Briefly about the Covalent Bond. | CO1 | 6 |
| 3. | a. | Discuss the operation of pn junction diode under forward and reverse bias condition with relevant diagram. | CO1 | 10 |
|  | b. | Explain the working principle of half wave rectifier. | CO1 | 10 |
| **(OR)** | | | | |
| 4. | a. | Compare the CB, CE, and CC configurations. | CO1 | 8 |
|  | b. | Describe the constructional details and characteristics of UJT. | CO1 | 12 |
| 5. | a. | Prove the following:  (i) A+A’B = A+B; (ii) AB + A’C + BC = AB +A’C;  (iii) A+AB = A | CO1 | (3 + 4 + 3) |
|  | b. | Realize the given expression using basic logic gates.  (i) Y = AB + BC + CD (ii) Y = ((A+B).(C+D))’ | CO1 | (5 + 5) |
| **(OR)** | | | | |
| 6. | a. | Simplify the Boolean Expression using Karnaugh Map  F(A, B, C, D) = (1,2,4,5,6,9,12,14,15). | CO1 | 8 |
|  | b. | Define De-multiplexer. With the help of truth table explain the principle of operation of 1-to-4 De-multiplexer. | CO1 | 12 |
| 7. | a. | Draw the basic block diagram of communication system and explain. | CO2 | 12 |
|  | b. | What are the need for modulation? | CO2 | 8 |
| **(OR)** | | | | |
| 8. | a. | Derive the equation for Amplitude modulation. | CO2 | 8 |
|  | b. | With a neat block diagram, explain the working principle and operation of Super heterodyne receivers. | CO2 | 12 |
|  | | **Compulsory:** |  |  |
| 9. | a. | Explain in detail about different types of the satellite orbits. | CO2 | 10 |
|  | b. | With block diagram, explain the transmission of optical signals in an optical fiber link. | CO2 | 10 |

ALL THE BEST