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



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

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| **Code :** | **13EC101 / 14EC1001** | **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. |  | Paraphrase the operation and characteristics of PN junction diode with a neat diagram. | CO1 | 20 |
| **(OR)** | | | | |
| 2. |  | Discuss the formation of N type and P type semiconductor with its covalent bond structure. | CO1 | 20 |
|  |  |  |  |  |
| 3. |  | Paraphrase the operation and characteristics of MOSFET with neat diagram. | CO1 | 20 |
| **(OR)** | | | | |
| 4. |  | Comprehend on BJT. Discuss the input and output characteristics of  a NPN transistor in Common base configuration. | CO1 | 20 |
|  |  |  |  |  |
| 5. | a. | Design a 1x4 De-multiplexer and draw its logic circuit. | CO1 | 12 |
| b. | Convert the following:   1. (250)10 = ( ? )2 2. (157)8 = ( ? )16 3. (351)8 = ( ? )2 4. (110101)2  = ( ? )10 | CO1 | 8 |
| **(OR)** | | | | |
| 6. | a. | State your perception about various logic gates with necessary  diagrams and truth table. | CO1 | 12 |
| b. | Simplify the following using K-map.  F(A,B,C,D) = ∑ (0,1,2,3,7,8,10,12,13,14,15) | CO1 | 8 |
|  |  |  |  |  |
| 7. | a. | Derive the expression of frequency modulation with necessary waveforms. | CO2 | 10 |
| b. | Interpret the operational principle of AM transmitter with neat diagram. | CO2 | 10 |
| **(OR)** | | | | |
| 8. | a. | Derive the expression of amplitude modulation with necessary waveforms. | CO2 | 12 |
| b. | Explain the superheterodyne receiver with relevant diagram. | CO2 | 8 |
|  | | **Compulsory**: |  |  |
| 9. | a. | Elaborately discuss the various blocks of optical fiber communication system. | CO2 | 10 |
| b. | Explain the various blocks of simple pulse radar system. | CO2 | 10 |