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



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

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| **Code :** | **14EC2080** | **Duration :** | **3hrs** |
| **Sub. Name :** | **COMMUNICATION 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. | Compare the features of FM with AM. Also write the merits and demerits of FM. | CO3 | 06 |
| b. | Explain the following AM signal generation.  i) Low level AM modulator ii) High level AM modulator. | CO1 | 14 |
| **(OR)** | | | | |
| 2. | a. | Explain the operations of square law modulator. | CO1 | 10 |
| b. | Examine the working of direct and indirect method of generation of FM signal. | CO1 | 10 |
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| 3. | a. | Discuss about the operation of a super heterodyne receiver with neat diagram. | CO1 | 15 |
| b. | Distinguish between narrowband and wideband FM. | CO3 | 05 |
| **(OR)** | | | | |
| 4. |  | Explain the following types of FM demodulator.  i) Balanced discriminator and ii) Foster – Seley Discriminator. | CO1 | 20 |
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| 5. | a. | Construct the PCM system and explain each block with neat sketch. | CO2 | 10 |
| b. | How the highly correlated voice data is modulated using Delta modulator? | CO2 | 10 |
| **(OR)** | | | | |
| 6. | a. | Summarize about generation and detection of BPSK signals. | CO2 | 10 |
| b. | Compare: ASK, FSK and PSK. | CO3 | 10 |
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| 7. | a. | What are the modes of operation suggested in optical fibres? How are optical fibres classified according to this? Discuss elaborately. | CO1 | 10 |
| b. | Illustrate the concept of coding and decoding methods of linear codes. | CO1 | 10 |
| **(OR)** | | | | |
| 8. | a. | Write the procedure for Shannon Fano coding and use the procedure to obtain the code for the source symbols S0, S1, S2, S3, S4, S5 with their respective probabilities ½, 1/3, 1/12, 1/15, 1/120, 1/120. | CO1 | 10 |
| b. | Model any one error control code in detail and discuss its applications. | CO1 | 10 |
|  | | **Compulsory**: |  |  |
| 9. | a. | Compare various multiple access techniques used in wireless communication with their merits and demerits. | CO3 | 16 |
| b. | Distinguish between the LED and LCD. | CO3 | 04 |