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

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**End Semester Examination – Nov/Dec – 2018**

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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. | Infer and discuss the Communication system with a neat block diagram. | CO1 | 10 |
| b. | Classify the types of modulation and discuss. | CO2 | 10 |
| (OR) | | | | |
| 2. | a. | Define and derive the expression for Amplitude modulation and it’s Power calculation with necessary waveforms. | CO2 | 12 |
| b. | Assess the need for suppression of carriers with relevant justifications. | CO2 | 8 |
|  |  |  |  |  |
| 3. | a. | Define and derive the expression for frequency modulation with necessary waveforms. Illustrate Bessel function with relevant waveform. | CO2 | 15 |
| b. | Compare Narrowband and wideband FM. | CO2 | 5 |
| (OR) | | | | |
| 4. | a. | Derive the expression for square law detector with necessary waveforms. | CO2 | 8 |
| b. | Derive the expression for Envelope detector with necessary waveforms. | CO2 | 12 |
|  |  |  |  |  |
| 5. | a. | Discuss about the Round Travis detector with necessary diagrams | CO2 | 10 |
| b. | Elaborate on obtaining frequency modulation indirectly using Armstrong method. | CO1 | 10 |
| (OR) | | | | |
| 6. | a. | With neat diagram explain about the super heterodyne receiver. | CO1 | 14 |
| b. | For a receiver with IF and RF frequency of 465 kHZ and 1220 kHz. Determine,   1. Local oscillator frequency 2. Image frequency 3. IFRR for Q of 80. | CO1 | 6 |
|  |  |  |  |  |
| 7. | a. | Derive and discuss about the SNR calculation for SSB-SC signal | CO1 | 15 |
| b. | Elaborate on Pre – emphasis. | CO1 | 5 |
| (OR) | | | | |
| 8. | a. | Plot the ASK, FSK and PSK modulated output waveform for the input 1010. | CO3 | 10 |
| b. | Explain in detail about the process of Pulse code modulation | CO3 | 10 |
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|  | | **Compulsory**: |  |  |
| 9. |  | Appraise in detail about Fiber optics. Explaining about the various sources and detectors and comparing their performance. | CO3 | 20 |