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 :** | **14EC2013** | **Duration :** | **3hrs** |
| **Sub. Name :** | **COMMUNICATION THEORY AND SYSTEMS** | **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. | What are the various necessities for modulation in any communication system? | CO1 | 10 |
| b. | Bring out the various advantages of wireless communication over wired communication? | CO1 | 10 |
| (OR) | | | | |
| 2. | a. | Discuss, how DSBSC wave is generated by Balanced modulator. Derive the expression and show that the output has only two sidebands. | CO2 | 15 |
| b. | A transmitter radiates 8KW without modulation and 12kw after modulation. Determine the depth of modulation. | CO2 | 5 |
| 3. | a. | Derieve the expression for AM signal and draw its waveform. | CO2 | 10 |
|  | b. | Explain the operation of ring modulator with neat circuit diagram. Use mathematical equations wherever necessary. | CO2 | 10 |
| (OR) | | | | |
| 4. | a. | How will you detect AM signals using diode detector? Draw neat waveforms to show the effect of negative clipping. | CO2 | 10 |
|  | b. | Compare and contrast AM and FM approaches based on different criterion. | CO2 | 10 |
| 5. | a. | Explain the varactor diode method of generating FM signals. | CO2 | 10 |
|  | b. | Using phasor diagrams, show how Foster Seeley discriminator is used for detecting FM signals | CO2 | 10 |
| (OR) | | | | |
| 6. | a. | With neat block diagram, explain the operation of AM transmitter in communication systems. | CO1 | 10 |
|  | b. | Explain the working of AM Superhetrodyne receiver using neat block diagram? | CO1 | 10 |
| 7. | a. | With a block diagram, explain the FM receiver in detail. | CO1 | 10 |
|  | b. | Using neat sketches, show how TRF receiver is used for detecting AM signals. | CO1 | 10 |
| (OR) | | | | |
| 8. | a. | Explain the operation of ISB transmitter with neat block diagram. | CO1 | 10 |
|  | b. | Explain the IF amplifier significance and the values of IF for Audio, FM receiver, TV receiver. | CO1 | 10 |
|  | | **Compulsory:** |  |  |
| 9. |  | What is a noise? Discuss the various types of noises affecting the communication system in detail. | CO3 | 20 |

ALL THE BEST