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 :** | **11MT216** | **Duration :** | **3 hrs** |
| **Sub. Name :** | **Electronic Communication Systems** | **Max. marks :** | **100** |

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| **Q. No** | **Questions** | | **Marks** |
| **PART-A(10X1=10 MARKS)** | | | |
| 1. | Define low frequency noise. | | (1) |
| 2. | Name any four waveforms. | | (1) |
| 3. | Plot the waveform of amplitude modulated signal and the carrier signal. | | (1) |
| 4. | Write any two advantages of double-conversion receiver over single-conversion receivers. | | (1) |
| 5. | Define Phase Modulation. | | (1) |
| 6. | What are the types of angle modulations? | | (1) |
| 7. | Define sampling. | | (1) |
| 8. | Write the advantages of Time Division Multiplexing. | | (1) |
| 9. | What do you mean by Probability of error? | | (1) |
| 10. | What are the main components needed for a communication? | | (1) |
| **PART B(5 X 3= 15 MARKS)** | | | |
| 11. | Write a short note on Signal to noise ratio. | | (3) |
| 12. | State the advantages of  super heterodyning? | | (3) |
| 13. | What is pre-emphasis and de-emphasis? Where is it used? | | (3) |
| 14. | Briefly explain the blocks in Delta modulator. | | (3) |
| 15. | Describe on ASK and FSK. | | (3) |
| **PART C(5 X 15= 75 MARKS)** | | | |
| 16. | What are the different Sources of noise and explain briefly. | | 15 |
| (OR) | | | |
| 17. | a. | Describe about the thermal noise modeling in detail. | 8 |
| b. | Differentiate Energy Signals and Power Signals. | 7 |
| 18. | Elaborate different methods to generate single sideband signals. | | 15 |
| (OR) | | | |
| 19. | a. | Sketch the waveform of amplitude modulated signal and explain its modulation index, frequency spectrum and power. | 10 |
| b. | Write a short note on tuning range and image rejection. | 5 |
| 20. | a. | Describe amplitude limiters briefly. | 5 |
| b. | Explain Varactor Diode modulators for angle modulation. | 10 |
| (OR) | | | |
| 21. | Using suitable mathematics, derive the output equation for an FM system. Also sketch its output waveform in both time domain and frequency domain. | | 15 |
| 22. | a. | Describe briefly about the Pulse Code modulation scheme. | 10 |
| b. | Explain PPM and PWM with diagram. | 5 |
| (OR) | | | |
| 23. | What is meant by delta modulation? Draw the block diagram of a DM transmitter and receiver. Explain its operation. | | 15 |
| 24. | a. | Explain the concept of ASK in detail. | 5 |
| b. | Define QPSK in detail with necessary diagrams. Write its advantages over other modulation schemes. | 10 |
| (OR) | | | |
| 25. | With a neat block diagram explain about the digital communication system. | | 15 |

ALL THE BEST