****

**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

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

**End Semester Examination – Nov/Dec - 2016**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | **Semester :** | **2016-17 ODD** |
| **Code :** | **12MT225** | **Duration :** | **3 hrs** |
| **Sub. Name :** | **Electronic Communication Systems** | **Max. marks :** | **100** |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Q. No.** | **Questions** | | | **Marks** | | |
| **PART-A(10X1=10 MARKS)** | | | | | | |
| 1. | Define energy signals. | | | (1) | | |
| 2. | The noise occurs wherever current has to divide between two or more electrodes is \_\_\_\_\_\_\_\_\_\_\_\_\_. | | | (1) | | |
| 3. | What is meant by Adjacent Channel Selectivity? | | | (1) | | |
| 4. | What are the main features of Super heterodyne Receiver? | | | (1) | | |
| 5. | Define Phase modulation. | | | (1) | | |
| 6. | What is the purpose of using AFC in FM receivers? | | | (1) | | |
| 7. | Define Pulse Width Modulation. | | | (1) | | |
| 8. | Name the types of multiplexing? | | | (1) | | |
| 9. | \_\_\_\_\_\_\_\_\_\_\_\_\_ is the changing the phase of the carrier signal with respect to the binary information or digital signal. | | | (1) | | |
| 10. | Differentiate Bit rate and Baud rate. | | | (1) | | |
| **PART B(5 X 3= 15 MARKS)** | | | | | | | |
| 11. | | Give the mathematical representation of rectangular waveforms and briefly explain the frequency and phase spectrum of rectangular waveforms. | | | (3) | | |
| 12. | | What is Modulation? What happens in over modulation? | | | (3) | | |
| 13. | | Differentiate narrowband and wideband FM. | | | (3) | | |
| 14. | | Define PAM and write down its drawbacks**?** | | | (3) | | |
| 15. | | What are the Advantages of Digital communications? | | | (3) | | |
| **PART C(5 X 15= 75 MARKS)** | | | | | |
| 16. | a | | Explain in detail about the energy signal, power signal and its Fourier transform. | 10 | |
| b | | Write a short note on noise temperature. | 5 | |
| (OR) | | | | | |
| 17. |  | | Briefly explain the different sources of noise in communication systems. | 15 | |
| 18. |  | | Explain in detail about Amplitude Modulation, Modulation Index and its Frequency Spectrum. | 15 | |
| (OR) | | | | | |
| 19. | a. | | Explain in detail on Amplitude Modulator and Demodulator circuits. | 10 | |
| b. | | What is meant by Super heterodyne receiver? | 5 | |
| 20. |  | | Differentiate FM and PM. Briefly describes the features of FM and how the frequency modulated signal is obtained. | 15 | |
| (OR) | | | | | |
| 21. | a | | Explain with illustration of FM stereo receiver. | 15 | |
| 22. | a | | Sketch the different waveforms of Pulse Modulation and describe any one of the Pulse Modulation scheme in detail. | 15 | |
| (OR) | | | | | |
| 23. | a | | What is meant by differential PCM? Draw the block diagram of a DPCM transmitter and receiver. Explain its operation. | 15 | |
| 24. | a | | With a neat block diagram explain about the digital communication system. | 15 | |
| (OR) | | | | | |
| 25. | a | | With a neat block diagram explain the concept of Phase Shift Keying. | 8 | |
| b. | | Explain the concept of QPSK and its advantages over other digital modulation schemes in detail. | 7 | |

ALL THE BEST