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 – April/May– 2017**

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| **Code :** | **16CA2005** | **Duration :** | **3Hrs** |
| **Sub. Name :** | **PRINCIPLES OF DATA COMMUNICATION** | **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. | \_\_\_\_\_\_\_\_ is the time a wave requires to complete a single cycle and it is measured in seconds. | CO1 | 1 |
| b. | Write the expansion for APM. | CO1 | 1 |
| c. | List any two example applications for modulation. | CO1 | 2 |
| d. | Explain why encoding process is required. | CO1 | 2 |
| e. | Discuss in detail the different types of modulation through suitable diagrams. | CO1 | 14 |
| (OR) | | | | |
| 2. | a. | \_\_\_\_\_\_\_ sounds are also described in terms of their phase difference. | CO1 | 1 |
| b. | Which algorithm is commonly used to sample the signals? | CO1 | 1 |
| c. | Bring out the relationship between frequency and time. | CO1 | 2 |
| d. | Justify the need for sampling. | CO1 | 2 |
| e. | Elaborate the pulse code modulation method with suitable example. | CO1 | 14 |
| 3. | a. | Give an example for discrete signals. | CO1 | 1 |
|  | b. | In \_\_\_\_\_\_\_\_\_ transmission, signals are transmitted in only one direction. | CO1 | 1 |
|  | c. | List the ways to attain Shannon’s limit. | CO2 | 2 |
|  | d. | Give examples for full duplex transmission. | CO1 | 2 |
|  | e. | Communication can also take place in the presence or absence of noise. – Justify the statement with all possible consideration. | CO1 | 14 |
| (OR) | | | | |
| 4. | a. | Give an example for continuous signals. | CO1 | 1 |
|  | b. | In \_\_\_\_\_\_\_\_\_\_ transmission, both stations may transmit, but only one at a time. | CO1 | 1 |
|  | c. | Write the possible ways to transmit messages. | CO1 | 2 |
|  | d. | Distinguish between guided and unguided transmission medium. | CO1 | 2 |
|  | e. | Discuss on the Information content and discrete messages. | CO1 | 7 |
|  | f. | Write short note on channel capacity. | CO1 | 7 |
| 5. | a. | Effective bandwidth is otherwise called as \_\_\_\_\_\_\_\_. | CO1 | 1 |
|  | b. | \_\_\_\_\_\_\_\_\_\_\_\_\_ noise is due to thermal agitation of electrons. | CO1 | 1 |
|  | c. | List the advantages and disadvantages of Digital Signals. | CO1 | 2 |
|  | d. | List the different types of Noise. | CO1 | 2 |
|  | e. | Discuss in detail the characteristics of various guided media transmissions. | CO1 | 14 |
| (OR) | | | | |
| 6. | a. | \_\_\_\_\_\_\_\_\_\_\_\_ is a range of frequencies contained in a signal. | CO1 | 1 |
|  | b. | \_\_\_\_\_\_\_\_\_\_\_ is the communication of data by the propagation and processing of signals. | CO1 | 1 |
|  | c. | Define data. | CO1 | 2 |
|  | d. | Explain the need for transmission antenna and reception antenna. | CO1 | 2 |
|  | e. | List and explain the most significant transmission impairments. | CO1 | 14 |
| 7. | a. | \_\_\_\_\_\_\_\_\_\_\_\_ is the process of encoding source data onto a carrier signal with frequency. | CO1 | 1 |
|  | b. | The \_\_\_\_\_\_ of the signal is the rate, in bits per second, that data are transmitted. | CO1 | 1 |
|  | c. | Which is the popular alternative to pulse code modulation? | CO1 | 2 |
|  | d. | How quantizing error occurs? | CO1 | 2 |
|  | e. | Examine the process of transforming analog data into digital signals through suitable example. | CO1 | 14 |
| (OR) | | | | |
| 8. | a. | Data signaling rate is other wise called as \_\_\_\_\_\_\_\_\_\_\_. | CO1 | 1 |
|  | b. | ASK stands for \_\_\_\_\_\_\_\_\_\_\_\_. | CO1 | 1 |
|  | c. | Distinguish between modulation rate and data rate. | CO1 | 2 |
|  | d. | Justify the need for modulation. | CO1 | 2 |
|  | e. | Discuss in detail the concept of Digital Data and Digital signals. | CO1 | 14 |
|  | | **Compulsory:** |  |  |
| 9. | a. | The \_\_\_\_\_\_\_\_\_ is the time it takes for a bit to traverse the link between source and destination. | CO1 | 1 |
|  | b. | \_\_\_\_\_\_\_\_\_\_\_\_\_ enables a receiver to regulate the flow of data from a sender so that the reciver’s buffer do not overflow. | CO1 | 1 |
|  | c. | List the two link configurations of High Level Data Link Control. | CO1 | 2 |
|  | d. | Draw the frame structure of High Level Data Link Control. | CO1 | 2 |
|  | e. | Write short notes on wavelength division multiplexing. | CO1 | 8 |
|  | f. | Discuss the different data transfer modes of High Level Data Link Control. | CO1 | 6 |

ALL THE BEST