

H42

B. Tech. EXAMINATION, 2020

(Eighth Semester)

(B Scheme)

(Main & Re-appear)

ECE, EEE

ECE404B

DATA COMMUNICATIONS AND NETWORK

Time : 3 Hours]

[Maximum Marks : 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

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|----|---|----|
| 1. | (a) How is networking an essential part of data communication ? | 7 |
| | (b) Discuss in detail the major categories of transmission media. | 8 |
| 2. | (a) Differentiate between analog and digital data transfer. | 5 |
| | (b) Discuss in detail various parameters used for measurement of network performance. | 10 |

Unit II

3. (a) Define baseline wandering and its effect on digital transmission. 5
(b) Explain network components, functions and features of series and parallel data transmission. 10
4. (a) Discuss about wavelength division multiplexing in detail. Also mention its advantages and disadvantages. 7
(b) In statistical TDM, there may be a length field. What alternative could there be to the inclusion of a length field ? What problem might this solution cause and how it could be solved ? 8

Unit III

5. (a) Discuss in detail various phases involved in communication via circuit switching. 7
(b) Give the characteristics of virtual-circuit network. Also discuss delay in virtual-circuit networks. 8
6. (a) Compare and contrast byte-oriented and bit-oriented protocols. 5
(b) Briefly discuss the protocols for noiseless channel. 5
(c) What is the drawback of Go-back-N ARQ protocol ? How it may be overcome ? 5

Unit IV

7. Discuss various layers of OSI model in detail. Also differentiate between OSI and TCP/IP models. 15
8. (a) Explain the sublayers of the data link layer in IEEE standard. 7
(b) Why there is no need for CSMA/CD on a full duplex Ethernet LAN ? 4
(c) What are the advantages of dividing an Ethernet LAN with a bridge ? 4