

2056

B. Voc. (Hardware and Networking) FYUP

Second Semester

BHN-201: Data Communication and Networks

Time allowed: 3 Hours

Max. Marks: 80

*NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting one question from each Unit.*

*x-x-x*I. Define any four of the following:-

- a) Client/Server network
- b) Data rate
- c) HTTP
- d) Subnet mask
- e) NIC
- f) Telnet

(4x4)

**UNIT - I**

- II. What is network topology? Discuss different network topologies in detail. Compare their structure, advantages and limitations. (16)
- III. Explain the OSI Reference Model in detail. Describe all its seven layers, their functions and how they interact with each other during data communication. (16)

**UNIT - II**

- IV. What is a transmission media? Explain in detail different types of transmission media along with their advantages and limitations. (16)
- V. What is multiplexing? Explain the need for multiplexing in communication systems. Describe Frequency Division Multiplexing, Time Division Multiplexing and Wavelength Division Multiplexing in detail. (16)

**UNIT - III**

- VI. Explain different network devices. Compare their functionalities and identify the OSI layers at which they operate. (16)

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(2)

- VII. Explain the IEEE standards for LAN and WAN. Discuss in detail IEEE 802.3 (Ethernet) and its significance in networking. (16)

**UNIT - IV**

- VIII. What is an IP Address? Describe the IP address format and discuss different IP address classes along with their characteristics, ranges and typical use cases. (16)
- IX. Explain the concept of user management in operating systems. Discuss various operations such as adding users, deleting users, renaming accounts, and setting account restrictions. (16)

x-x-x