

# Vidyalankar

S.Y. Diploma : Sem. IV [IF]

## Data Communication Networking

Time: 3 Hrs.]

Prelim Question Paper

[Marks : 100

- Instructions :**
- (1) **All** questions are **compulsory**.
  - (2) Illustrate your answers with **neat** sketches wherever necessary.
  - (3) Figures to the **right** indicate **full** marks.
  - (4) Assume suitable data, if **necessary**.
  - (5) Preferably, write the answers in sequential order.

1. (a) Attempt any **SIX** of the following: [12]
  - (i) List out the advantages and drawbacks of bus topology.
  - (ii) Is there any relationship between transmission media and topology?
  - (iii) What's The Difference Between Bit Rate And Baud Rate?
  - (iv) What are the different types of cabling supported by Ethernet standard?
  - (v) Why are protocols needed?
  - (vi) How are the guided media differing from unguided transmission media?
  - (vii) Define IP address.
  - (viii) What is meant by segmentation?
  
1. (b) Attempt any **TWO** of the following: [8]
  - (i) State the difference between TDM and FDM.
  - (ii) Compare circuit-switched and packet-switched networks.
  - (iii) Explain modes of channel operation, namely simplex, half-duplex and full-duplex operation.
  
2. Attempt any **FOUR** of the following: [16]
  - (a) What is Data Communication?
  - (b) Explain in detail about Coaxial Cable.
  - (c) What is the difference between network layer delivery and the transport layer delivery?
  - (d) Explain the problems in OSI Model and Protocols.
  - (e) Describe Bluetooth Architecture.
  - (f) Compare the two methods of serial transmission.
  
3. Attempt any **FOUR** of the following: [16]
  - (a) Write a short note on Satellite communication.
  - (b) Differentiate Connection-Oriented and Connectionless Services.
  - (c) Briefly discuss about Internetwork routing.
  - (d) Write briefly about Error detection and correction.
  - (e) Write a short note on Bus and Star Topology.
  - (f) Explain vertical communication in OSI.
  
4. Attempt any **FOUR** of the following: [16]
  - (a) Compare FTP and TFTP.
  - (b) Explain in detail about ISO-OSI reference Model.
  - (c) Explain about client-server model.

- (d) Explain in detail about Peer-to-peer Communication.
- (e) Explain address resolution protocol.
- (f) Write in short about Hub, Repeater, Bridge and switch.

5. Attempt any **FOUR** of the following:

[16]

- (a) What is DNS ,explain in detail.
- (b) Compare Virtual-Circuit and Datagram Subnets.
- (c) Write the differences between WiFi and Wi-MAX.
- (d) Describe TCP and UDP.
- (e) Explain FDDI in detail.
- (f) What is the difference between single mode and multimode fibers in fiber optic networks?

[16]

6. Attempt any **FOUR** of the following:

- (a) Describe ICMP.
- (b) Explain TCP connections in detail.
- (c) What are the differences between DSL and Cable modem.
- (d) (i) How many subnets and hosts per subnet can you get from the network 172.28.0.0/26?  
(ii) Which subnet does host 172.24.43.112/25 belong to?
- (e) Explain TCP/IP model with neat diagram.
- (f) State the limitations of Ethernet.

