

Q.1 Attempt All.

(15 Marks)

A. Multiple Choice Question :

1. _____ describes position of the waveform relative to time Zero.
a. Time b. Phase c. Period d. Frequency
2. The _____ layer is responsible for moving data from source to destination.
a. Network Layer b. Data Link Layer
c. Presentation Layer d. Transport Layer.
3. In half-duplex mode, the communication is _____.
a. Unidirectional b. Bidirectional c. Half way d. None
4. _____ protocol does not work on network layer.
a. IP b. ARP c. ICMP d. TCP
5. An IP address consists of _____ octets separated by dots.
a. 4 b. 5 c. 8 d. 6

B. Fill in the blanks:

(Data Link, Period, Multipoint, Single, Burst, Circuit Switch, Presentation, Point-to-Point)

1. A _____ error means that two or more bits in data unit have changed.
2. In _____ network there is no resource reservation.
3. Frequency & _____ are the inverse of each other.
4. A _____ layer is responsible for moving frames from one hop to next.
5. A _____ connection provides a dedicated link between two devices.

C. Answer the following question:

1. Which are the services provided by presentation layer?
2. What is Protocol?
3. List fundamental characteristic of Data Communication.
4. Define : Peak Amplitude, Phase and Frequency.
5. What are different types of digital-to-analog conversion.

Q.2. Attempt the following (Any Three)

(15 Marks)

1. List and explain the five components of Data Communication.
2. What are responsibilities of Data Link Layer?
3. What are the difference between between Simplex, Half-Duplex and Full-Duplex transmission mode.
4. Explain Mesh topology and cite advantage of it.
5. Write short note on FHSS.
6. The period of signal is 500ms, What is the frequency in kilohertz?

Q.3. Attempt the following (Any Three)

(15 Marks)

1. Discuss ARP Request and ARP Response.
2. What is guided media? Explain any one in detail.
3. What is analog signal and digital signal?
4. Write short note on Direct Sequence Spread Spectrum.
5. How does a single-bit error differ from a burst error?
6. What are the difference between parallel and serial transmission?

Q.4. Attempt the following (Any Three)

(15 Marks)

1. Explain term i) Switch ii) Router.
2. Write short note on services of UDP.
3. Write short note on Process to Process delivery.
4. How connectionless and connection-oriented protocol work?
5. What is control access? Explain any one technique.
6. Rewrite IP address using binary notation and find class of it:
i. 10.03.24.25
ii. 192.132.2.123

Q.5. Attempt the following (Any Three)

(15 Marks)

1. What is mask in IPv4 addressing? What is a default mask in IPv4 Addressing?
2. What is channelization? Explain any one technique.
3. Discuss CSMA.
4. Write short note on Pulse Code Modulation.
5. Name and explain three types of transmission impairment.