

- N. B.:** (1) All questions are compulsory.
(2) Make suitable assumptions wherever necessary and state the assumptions made.
(3) Answers to the same question must be written together.
(4) Numbers to the right indicate marks.
(5) Draw neat labelled diagrams wherever necessary.
(6) Use of Non-programmable calculators is allowed.

Q1) Attempt any three of the following:

[15]

- A. State and explain Data Communication and its characteristics.
- B. What are the functions of OSI model Layers?
- C. Write a short note on the Data Link Layer.
- D. Write a short note on the Internet.
- E. Define Bandwidth, Data Rate, Bound Rate & Signals with diagram.
- F. Explain the types of Network.

Q2) Attempt any three of the following:

[15]

- A. Write a short note on WDM.
- B. What are the different types of transmission media? Explain each type.
- C. Compare between FDM & TDM.
- D. Write a short note on multiplexing.
- E. Write a short note on Transmission Impairments.

Q3) Attempt any three of the following:

[15]

- A. Explain in brief Error Control.
- B. Explain Stop and Wait ARQ..
- C. Write a short note on ALOHA.
- D. Write a short note on TDMA.
- E. Explain the applications of VLAN.
- F. Write a short note on Bluetooth.

Q4) Attempt any three of the following:

[15]

- A. What are the duties of a Network Layer?
- B. Write a short note on Multicast Routing.
- C. Explain the structure of the IP frame header?
- D. Write a short note on IPv6.
- E. Write a short note on Flooding.
- F. Explain OSPF in detail.

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Q5) Attempt any three of the following:

[15]

- A. What are the duties of a Transport Layer?
- B. Explain UDP in the Transport Layer.
- C. Write a short note on DNS.
- D. Write a short note on TCP protocol.
- E. Write a short note on HTTP.
- F. Write a short note on WWW.

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