

N.G.M. COLLEGE (AUTONOMOUS) : POLLACHI

END-OF-SEMESTER EXAMINATIONS: MAY 2026

B.Sc. Information Technology

MAXIMUM MARKS: 75

SEMESTER -IV

TIME: 3 HOURS

PART - III

DATA COMMUNICATION AND NETWORKS

SECTION – A

(10 X 1 = 10 MARKS)

ANSWER THE FOLLOWING QUESTIONS.

(K1)

1. Which of the following is used to convert Digital data to an Analog signal?
a) Modem b) NIC c) Repeater d) Multiplexer
2. In _____ topology, each node is directly connected to only its two adjacent neighbours.
a) Mesh Topology b) Star Topology c) Ring Topology d) BUS Topology
3. Expand ISDN
a) Integrated Services Digital Network b) Integrated Secured Digital Network
c) Integrated Services Directory Network d) Internal Services Digital Network
4. ATM is considered "Asynchronous" because:
a) It doesn't use a clock for transmission. b) Cells are transmitted based on demand
c) It only supports one-way communication d) It uses stop-and-wait flow control.
5. _____ is useful for interconnecting two or more networks and that differ in their physical characteristics such as frame size, transmission rates, topologies, addressing, etc
a) Frame Relay b) Bridge c) Router d) Modem

ANSWER THE FOLLOWING IN ONE (OR) TWO SENTENCES

(K2)

6. What is meant by PROTOCOLS in Network Communication?
7. What are the two types of errors in Data Communication?
8. Write a note on LAN.
9. What is the use of Frame Relay?
10. What is meant by Modem?

SECTION – B

(5 X 5 = 25 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS.

(K3)

11. a) Discover detail about Parallel and Serial Communication.
(OR)
b) Articulate about Asynchronous, Synchronous Communication.
12. a) Explain in detail about Following Guided Transmission Media in Networking
 - i. Twisted Pair Wires (3 marks)
 - ii. Coaxial Cables (2 marks)

(OR)

b) Explain in detail about Circuit Switching.

13. a) Illustrate Wide Area Network (WAN)

(OR)

b) Explain about MAN (Metropolitan Area Network).

14. a) Relate X.25 Protocol and its working Principles.

(OR)

b) Articulate Congestion Control in Frame Relay

15. a) Discover Routers and its uses.

(OR)

b) Describe in detail about Digital Subscriber Line (DSL).

SECTION – C

(5 X 8 = 40 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS.

(K4 (Or) K5)

16. a) Correlate Digital Signal, Analog Transmission Using Modems .

(OR)

b) Categorize Multiplexing and its Types in Data Communication.

17. a) Conclude in detail about the various Network Topologies

(OR)

b) Contrast two types of Routing Algorithms and explain them in detail.

18. a) Summarize in detail about Ethernet used in LAN Connection Ethernet

(OR)

b) Elaborate ISDN and Its Background

19. a) Illustrate Frame Relay and its working principle.

(OR)

b) Interpret Asynchronous Transfer Mode (ATM).

20. a) Discuss in detail about Ways of Accessing the Internet.

(OR)

b) Summarize Internetworking Concepts and its Devices.
