

(FOR THE CANDIDATES ADMITTED

25UCS205

DURING THE ACADEMIC YEAR 2025 ONLY)

REG.NO. :

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

END-OF-SEMESTER EXAMINATIONS : MAY 2026

BSC COMPUTER SCIENCE(AIDED & SF)

MAXIMUM MARKS: 75

SEMESTER-II

TIME : 3 HOURS

PART - III

25UCS205– DATA COMMUNICATION AND COMPUTER NETWORKS

SECTION – A

(10 X 1 = 10 MARKS)

ANSWER THE FOLLOWING QUESTIONS.

(K1)

1. Which technique is used to detect burst errors in data transmission?
a) VRC b) LRC c) CRC d) Parity bit
2. Which multiple access technique divides the available frequency spectrum into several channels?
a) TDMA b) FDMA c) CDMA d) Packet switching
3. Which OSI layer converts data formats and performs encryption and decryption?
a) Session Layer b) Presentation Layer c) Data Link Layer d) Transport Layer
4. Which technology is associated with Metropolitan Area Networks (MAN)?
a) DQDB b) Ethernet c) Bluetooth d) USB
5. Which protocol is used to map an IP address to a physical (MAC) address?
a) ARP b) RARP c) TCP d) UDP

ANSWER THE FOLLOWING IN ONE (OR) TWO SENTENCES

(K2)

6. What is a protocol in networking?
7. What is a router?
8. Define flow control in the Transport Layer.
9. Define Wide Area Network (WAN).
10. Define Integrated Services Digital Network (ISDN).

SECTION – B

(5 X 5 = 25 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS. (K3)

11. a) Explain the fundamental components of a data communication system.
(OR)
b) Write about the following communication modes: Simplex, Half-Duplex and Full-Duplex.
12. a) Brief out different types of guided transmission media.
(OR)
b) Discuss the working of FDMA and TDMA used in wireless communication.
13. a) List out the functions of Data Link Layer in the OSI model.
(OR)
b) Examine responsibilities of Network Layer in data communication.

14. a) Summarize the working principle of CSMA/CD in Ethernet networks.
(OR)
b) Describe the concept of Metropolitan Area Network (MAN) and its applications.
15. a) Illustrate the architecture of ISDN.
(OR)
b) Write about the basics of the TCP/IP protocol suite.

SECTION – C**(5 X 8 = 40 MARKS)****ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS.(K4 (Or) K5)**

16. a) Discuss different types of transmission errors in detail.
(OR)
b) Describe the following error detection and recovery techniques in detail:
i. CRC
ii. Stop-and-Wait ARQ
17. a) Elaborate on the following network topologies with their advantages and disadvantages:
i. Mesh topology
ii. Star topology
iii. Bus topology. (OR)
b) Describe the different switching techniques in detail.
18. a) Illustrate the architecture of the OSI reference model with a neat diagram.
(OR)
b) Enumerate the functions of the Transport Layer and its role in reliable data transmission.
19. a) Write in detail about Explain Distributed Queue Dual Bus (DQDB) and Switched Multimegabit Data Services (SMDS) used in MAN.
(OR)
b) Exemplify the architecture of Wide Area Networks (WAN)
20. a) Exucidate the X.25 protocol and its working mechanism in packet-switched network
(OR)
b) Describe the role of ARP and RARP in address resolution.

Ethical paper