

Course Name : BSCIT

Subject Name : Computer Networks

Subject Code : BSCITRMA-303

Date : 18-02-2026

Time : 03:00PM TO 05:15PM

Max Marks : 70

Section A

Q.-1. Respond to any three of the following questions in brief. (30)

- (1) Discuss the architecture and advantages of Client-Server, Peer-to-Peer, Centralized, and Distributed computer network models.
- (2) Detail the various servers used in network communication, focusing on Database, Mail, Web, and Game servers.
- (3) Compare and contrast Analog and Digital signals, including their transmission forms, susceptibility to noise, and troubleshooting complexity.
- (4) Describe the roles and responsibilities of the Internet Society (ISOC), IAB, IETF, IRTF, and ICANN.
- (5) Explain the Logical Link Control (LLC) sublayer, including its header format, SAP fields, and three operation modes.

Section B

Q.-2. Write short notes on any four of the following topics. (20)

- (1) Briefly explain the four key characteristics: Delivery, Accuracy, Timeliness, and Jitter.
- (2) Summarize the core benefits of networking, including File, Hardware, and Application Sharing.
- (3) Briefly describe the modules of the File Transfer Protocol (FTP) for both client and server.
- (4) Explain the structure of a Media Access Control address, including its bit length and format.
- (5) Briefly list the categories of Unshielded Twisted Pair (UTP) cables and their support capacities.
- (6) Explain the three modes of wireless signal travel: Ground, Sky, and Line-of-sight propagation.

Section C

Q.-3. Select the correct response for each of the following questions (10)

(1) What is defined as any device capable of sending or receiving data in a network?

- | | |
|---------|-------------|
| A) Link | B) Medium |
| C) Node | D) Topology |

(2) In which mode does a Network Hub typically work?

- | | |
|----------------|-----------------|
| A) Full duplex | B) Half duplex |
| C) Simplex | D) Multi-duplex |

(3) Which device is used to connect a Local Area Network (LAN) to a Wide Area Network (WAN)?

- | | |
|-----------|-----------|
| A) Switch | B) Router |
| C) Hub | D) NIC |

(4) A network that covers a whole country or continent is known as a:

- | | |
|--------|-------------|
| A) LAN | B) WAN |
| C) MAN | D) Intranet |

(5) How many layers are defined in the OSI Reference Model?

- | | |
|------|------|
| A) 4 | B) 5 |
| C) 7 | D) 8 |

(6) Which layer is responsible for node-to-node data transformation and framing?

- | | |
|-------------|--------------|
| A) Physical | B) Data Link |
| C) Network | D) Transport |

(7) Which TCP/IP application layer protocol is used for accessing the World Wide Web?

- | | |
|--------|---------|
| A) FTP | B) HTTP |
|--------|---------|

C) SNMP

D) TELNET

(8) Which connectivity device is used to amplify or regenerate a signal to extend its range?

A) Hub

B) Switch

C) Repeater

D) Bridge

(9) In which topology are all workstations connected to a single central cable called a backbone?

A) Star

B) Ring

C) Bus

D) Mesh

(10) Which topology connects each node to a central hub or switch?

A) Mesh

B) Bus

C) Star

D) Ring

Section D

Q.-4. State whether the following statements are true or false

(10)

- (1) E-Commerce is defined as the process of buying and selling things on the internet.
- (2) A Wide Area Network (WAN) typically spans a small physical area like a school or hospital.
- (3) In a Peer-to-Peer network, all computers have equal status and share resources without a central server.
- (4) SMTP is a protocol used by mail servers to handle the process of email delivery.
- (5) Telnet supports Graphical User Interface (GUI) tools for remote management.
- (6) There are exactly eight layers defined in the OSI Reference Model.
- (7) UDP is a reliable protocol because it requires an acknowledgment for every transmitted segment.
- (8) Baseband transmission allows two or more communication channels to share the bandwidth of the medium simultaneously.
- (9) Mesh topology is highly reliable because it provides alternative paths if a single link fails.
- (10) Circuit switching divides a message into smaller pieces called packets that are sent individually.
