



BRAINWARE UNIVERSITY

Term End Examination 2025-2026

Programme – Dip.CSE-2024

Course Name – Computer Networks

Course Code - DCS40114

(Semester IV)

Full Marks : 60

Time : 2:30 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 15=15

1. Choose the correct alternative from the following :

- (i) Choose the transmission mode where data flows in only one direction.
 - a) Simplex
 - b) Half-Duplex
 - c) Full-Duplex
 - d) Automatic
- (ii) Select the number of layers defined in the OSI reference model.
 - a) 4
 - b) 5
 - c) 7
 - d) 8
- (iii) Identify the layer responsible for bit-by-bit physical delivery.
 - a) Data Link
 - b) Physical
 - c) Network
 - d) Transport
- (iv) Choose the topology that uses one single backbone cable for all nodes.
 - a) Ring
 - b) Star
 - c) Bus
 - d) Mesh
- (v) Select the port number used by the HTTPS protocol for secure web.
 - a) 80
 - b) 25
 - c) 21
 - d) 443
- (vi) Choose the transport protocol that is connection-oriented.
 - a) UDP
 - b) TCP
 - c) IP
 - d) ICMP
- (vii) Identify the protocol used by the "Ping" command for diagnostics.
 - a) IGMP
 - b) ARP
 - c) ICMP
 - d) RARP
- (viii) Select the IPv4 address used for local loopback testing.
 - a) 0.0.0.0
 - b) 127.0.0.1
 - c) 192.168.1.1
 - d) 255.255.255.255

(ix) Choose the type of guided transmission media made of glass or plastic.

- a) Coaxial
- b) Fiber Optic
- c) Twisted Pair
- d) Shielded Pair

(x) Identify the multiple access protocol used in wired Ethernet.

- a) CSMA/CA
- b) Token Passing
- c) CSMA/CD
- d) Polling

(xi) Choose the Application Layer protocol for standard file transfer.

- a) SMTP
- b) DNS
- c) FTP
- d) TELNET

(xii) Identify the network range for Private Class C IP addresses.

- a) 10.x.x.x
- b) 172.x.x.x
- c) 192.168.x.x
- d) 127.x.x.x

(xiii) Identify the logical address that is exactly 32-bits long.

- a) MAC
- b) IPv4
- c) IPv6
- d) Port

(xiv) Select the OSI layer that manages data framing.

- a) Physical
- b) Data Link
- c) Network
- d) Transport

(xv) Choose the device that performs routing at Layer 3.

- a) Hub
- b) Switch
- c) Router
- d) Bridge

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Group-B

(Short Answer Type Questions)

3 x 5=15

2. Identify the five components of a data communications system and discuss shortly. (3)
3. Describe the Presentation Layer's function regarding data syntax. (3)
4. Describe the Go-Back-N ARQ mechanism. (3)
5. Describe IPv6 address. (3)
6. Differentiate between UDP and TCP. (3)

OR

Analyze the necessity of error control in the Transport Layer. (3)

Group-C

(Long Answer Type Questions)

5 x 6=30

7. Identify the five components of a data communications system and discuss each components briefly. (5)
8. Discuss the main responsibilities of the 'Data Link Layer' in simple terms. (5)
9. Compare the OSI Model with the TCP/IP Model. (5)
10. Discuss Point-to-point and Multipoint network connections with proper diagram and explanation. (5)
11. Explain the structure of an IPv4 address and describe its two main parts. (5)
12. Compare the Mesh topology and Bus topology in terms of reliability. (5)

OR

Differentiate between Local Area Network (LAN) and Wide Area Network (WAN). (5)
