

Roll No.

BCA-C402

Bachelor of Computer Applications (Fourth Semester)

EXAMINATION, 2023-24

COMPUTER NETWORK

Time : 2½ Hours

Maximum Marks : 60

Note : All questions have to be attempted.

Section—A

1. Multiple choice questions : 1 each
 - (a) What is the term for the data communication system within a building or campus ?(CO4, BL-1)
 - (i) MAN
 - (ii) LAN
 - (iii) PAN
 - (iv) WAN

- (b) Which of the following is the network layer protocol for the internet ? (CO2, BL-1)
- (i) Hypertext transfer protocol
 - (ii) File transfer protocol
 - (iii) Ethernet
 - (iv) Internet protocol
- (c) What type of transmission is involved in communication between a computer and a keyboard ? (CO3, BL-2)
- (i) Half-duplex
 - (ii) Full-duplex
 - (iii) Simplex
 - (iv) Automatic
- (d) What is the term for an endpoint of an inter-process communication flow across a computer network ? (CO3, BL-2)
- (i) Port
 - (ii) Machine
 - (iii) Socket
 - (iv) Pipe

(e) Which topology requires a multipoint connection ? (CO1, BL-2)

(i) Ring

(ii) Bus

(iii) Star

(iv) Mesh

(f) TCP groups a number of bytes together into a packet called (CO1, BL-1)

(i) Segment

(ii) Buffer

(iii) Packet

(iv) Stack

(g) Transport layer is implemented in

(CO4, BL-3)

(i) End system

(ii) NIC

(iii) Ethernet

(iv) Signal transmission

- (h) In OSI model, when data is sent from device A to device B, the 5th layer to receive data at B is (CO2, BL-2)
- (i) Application layer
 - (ii) Transport layer
 - (iii) Link layer
 - (iv) Session layer
- (i) The packet of information at the application layer is called (CO4, BL-3)
- (i) Packet
 - (ii) Message
 - (iii) Segment
 - (iv) Frame
- (j) To deliver a message to the correct application program running on a host, the address must be consulted. (CO2, BL-2)
- (i) IP
 - (ii) MAC
 - (iii) Port
 - (iv) None of the mentioned

(k) Which is not a application layer protocol ?

(CO1, BL-1)

- (i) HTTP
 - (ii) SMTP
 - (iii) FTP
 - (iv) TCP

(l) is the multiplexing technique that shifts each signal to a different carrier frequency.

(CO4, BL-2)

- (i) FDM
 - (ii) TDM
 - (iii) Both (i) and (ii)
 - (iv) PDM

Section—B

2. Attempt any *four* of the following : 3 each

(a) For n devices in a network, what is the number of cable links required for a mesh, ring, bus, and star topology ? (CO1, BL-4)

(b) When a party makes a local telephone call to another party, is this a point-to-point or multipoint connection ? Explain your answer.

(CO1, BL-4)

- (c) How does information get passed from one layer to the next in the Internet model ? (CO2, BL-2)
 - (d) We send a voice signal from a microphone to a recorder. Is this a baseband or broadband transmission ? (CO2, BL-2)
 - (e) What is the minimum and maximum size of the process data that can be encapsulated in a UDP datagram ? (CO4, BL-2)
3. Attempt any *two* questions : 6 each
- (a) Match the following to one or more layers of the OSI model : (CO1, BL-2)
 - (i) Format and code conversion services.
 - (ii) Establishes, manages, and terminates sessions
 - (iii) Ensures reliable transmission of data
 - (iv) Log-in and log-out procedures.
 - (v) Provides independence from differences in data representation.
 - (b) A file contains 2 million bytes. How long does it take to download this file using a 56-Kbps channel ? 1-Mbps channel ? (CO2, BL-6)
 - (c) Write short note on the following : (CO3, BL-2)
 - (i) POPv3
 - (ii) FDDI

4. Attempt any *two* questions : 6 each

(a) In a block of address, we know the IP address of one host is 182.44.82.16/26. What are the first address (network address) and the last address in this block ?

(CO3, BL-5)

(b) Draw the block diagram of TCP/IP model and discuss various components of TCP/IP protocol.

(CO1, BL-2)

(c) List three transition strategies to move from IPv4 to IPv6. Explain the difference between tunneling and dual-stack strategies during the transition period. When is each strategy used ? (CO4, BL-3)

5. Attempt any *two* questions. 6 each

(a) Discuss the various protocols of Network layer.

(CO3, BL-2)

(b) What is the advantage of a hierarchical name space over a flat namespace for a system in size of the Internet ? What are the three domains of the domain name space ? (CO5, BL-2)

(c) Discuss File Transfer Protocol (FTP). Also compare FTP and HTTP. (CO5, BL-2)