

Roll No. ....

## **BCA–C403**

### **B. C. A. (Fourth Semester) EXAMINATION, 2022-23**

#### **COMPUTER NETWORKS**

*Time : 2½ Hours*

*Maximum Marks : 60*

**Note :** All questions have to be attempted.

#### **Section—A**

1. Multiple choice type questions : 1 each
  - (a) “Parity Bits” are used for which of the following purposes ? (CO2, BL-1)
    - (i) Encryption of data
    - (ii) To transmit fuster
    - (iii) To detect error
    - (iv) To identify user
  - (b) A proxy server is used as the computer ? (CO1, BL-2)
    - (i) With external access
    - (ii) Action as backup
    - (iii) Performing file handling
    - (iv) Accessing user permission

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- (c) When the mail server sends mail to other mail server it becomes ..... ? (CO2, BL-2)
- (i) SMTP client
  - (ii) SMTP server
  - (iii) Peer
  - (iv) Master
- (d) In which of the following switching methods, the message is divided into small packets ? (CO3, BL-2)
- (i) Message switching
  - (ii) Packet switching
  - (iii) Virtual switching
  - (iv) None of these
- (e) Which of the following protocol is the bit oriented protocol ? (CO1, BL-1)
- (i) SSL
  - (ii) HTTP
  - (iii) HDLC
  - (iv) All of these
- (f) Which of the following protocols is the connection-less protocol ? (CO2, BL-1)
- (i) UDP
  - (ii) TCP
  - (iii) IP
  - (iv) Both (i) and (iii)

- (g) Automatic repeat request error management mechanism is provided by ..... . (CO3, BL-2)
  - (i) Logical link control sublayer
  - (ii) Media access control sublayer
  - (iii) Network interface control sublayer
  - (iv) Application access control sublayer
- (h) A single channel is shared by multiple signal by ..... (CO2, BL-2)
  - (i) Analog modulation
  - (ii) Digital modulation
  - (iii) Multiplexing
  - (iv) Phase modulation
- (i) Network congestion occurs : (CO2, BL-1)
  - (i) In case of traffic overloading
  - (ii) In case of transfer failure
  - (iii) When a system terminates
  - (iv) When connection between two nodes terminates
- (j) TCP groups a number of bytes together into a packet called ..... (CO1, BL-1)
  - (i) Segment
  - (ii) Stack
  - (iii) Buffer
  - (iv) Packet

- (k) Two devices are in network if ..... (CO2, BL-3)
- (i) A process is running on both sides
  - (ii) PIDs of the process running on different devices are done.
  - (iii) A process in one device is able to exchange information with a process in another device.
  - (iv) A process is active and another is inactive
- (l) Identify the layer which provides services to the user : (CO3, BL-2)
- (i) Session layer
  - (ii) Application layer
  - (iii) Presentation layer
  - (iv) Physical layer

2. Attempt any *four* of the following (Short answer type questions) : 3 each

- (a) Why is it necessary to have layering in a network ? (CO1, BL-2)
- (b) What are the advantages of a multipoint connection over a point-to-point connection ? (CO2, BL-3)

- (c) What is crosstalk ? How is it minimized in case of twisted pair of wire ? (CO2, BL-4)
- (d) Differentiate between pure aloha and slotted aloha. (CO3, BL-2)
- (e) What are the responsibilities of Network layer ? Explain in brief. (CO5, BL-2)

### Section—B

- 3. Attempt any *two* of the following : 6 each
  - (a) Explain TCP/IP model. Differentiate it with OSI reference model. (CO4, BL-3)
  - (b) What is CSMA ? Illustrate CSMA with collision avoidance. (CO2, BL-1)
  - (c) Explain IEEE 802.11 architecture and addressing mechanism in detail. (CO5, BL-2)
- 4. Attempt any *two* of the following : 6 each
  - (a) Explain the formats of generic messages in HTTP. How is security provided for HTTP messages ? (CO3, BL-5)
  - (b) What are the various types of error correcting techniques ? (CO2, BL-2)
  - (c) Explain about the different types of transmission media in computer network. (CO1, BL-2)

5. Attempt any *two* of the following : 6 each
- (a) Explain in detail various responsibilities of application layer. (CO5, BL-2)
  - (b) Explain the concept of sliding window protocol in terms of selective-repeat ARQ. (CO5, BL-3)
  - (c) What do you mean by ARP ? Explain its role as well as its usage. (CO3, BL-3)