

2021-24

Time : 3 hours

Full Marks : 60

Pass Marks : 24

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Answer from both the Groups as directed.

Group – A

1. Select the most appropriate option from the following : $1 \times 10 = 10$

(a) A _____ is the physical path over which a message travels.

- (i) Path
- (ii) Medium ✓
- (iii) Protocol
- (iv) Route ✓

(b) A _____ set of rules that governs data communication.

(i) Protocols ✓

(ii) Standards

(iii) RFCs

(iv) Servers

(c) Two devices are in network if :

✓ (i) A process in one device is able to exchange information with a process in another device

(ii) A process is running on both devices

(iii) PIDs of the processes running of different devices are same

(iv) A process is active and another is inactive

(d) In TDM, slots are further divided into :

(i) Seconds

✓ (ii) Frames

- (iii) Packets ✕
 - (iv) Bits
- (e) When a collision detected in the network using CSMA/CD ?
- (i) The frame is immediately resent
 - (ii) Jam signal is sent by the station
 - (iii) The back-off value is 0
 - (iv) The back-off value is decremented by 1
- (f) In _____ systems, resources are allocated on demand.
- (i) Packet switching
 - (ii) Circuit switching
 - (iii) Line switching
 - (iv) Frequency switching
- (g) Multiplexing is used in :
- (i) Packet switching ✕
 - (ii) Circuit switching
 - (iii) Data switching
 - (iv) Packet and Circuit switching ✓

(h) Which of the following tasks is not done by data link layer ?

- (i) Framing
- (ii) Error control
- (iii) Flow control
- (iv) Channel coding

(i) DNS database contains :

- (i) Name server records
- (ii) Hostname-to-address records
- (iii) Hostname aliases
- (iv) All of the above mentioned

(j) A device operating at network layer is called :

- (i) Router
- (ii) Equalizer
- (iii) Bridge
- (iv) Repeater

2. What is Computer network ? How computer networks are classified ?

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Group – B

Answer any **three** questions of the following :

3. (a) What is network protocol ? Explain OSI reference model with neat diagram. 7
- (b) What is multiplexing ? Write the difference between Frequency division and Time division multiplexing. 8
4. (a) What is switching technique ? Explain packet switching technique with neat diagram. 7
- (b) Write short notes on the following : 8
- (i) WWW
- (ii) HTTP protocol
5. (a) Explain CSMA / CD 7
- (b) Explain different error detection technique in computer network. 8
6. (a) What is Bridge ? Explain the advantages of bridge in computer network. 7

(b) Explain stop and wait ARQ and Go-back-n ARQ techniques with neat diagram. 8

7. Write short notes on any two of the following :

$$7\frac{1}{2} \times 2 = 15$$

(a) Serial and Parallel transmission

(b) Pulse code modulation

(c) IP Protocol

