End Sem(III) —
IT (CC – 7)

2021

Time : 3 hours

Full Marks : 60

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

The figures in the margin indicate full marks.

Answser from both the Groups as directed.

Group – A

1. Choose the correct answer of the following : 1×15 = 15

(a) OSI stands for _____.

(i) Operating system interface

(ii) Optical system interconnection

(iii) Operating system interface

(iv) Open system interconnection

(b) Transmission data rate is decided by _____.

(i) Network layer

(ii) Transport layer

(iii) Data link layer

(iv) Physical layer

(c) In TCP IP Model, when data is sent from device A to device B, the 5th layer to receive data at B is _____.

(i) Application layer

(ii) Transport layer

(iii) Link layer

(iv) Session layer

(d) Delimiting and synchronization of data exchange is provided by _____.

(i) Application layer

(ii) Link layer

(iii) Transport layer

(iv) Session layer

(e) The functionalities of the presentation layer include _____.

(i) Data compression

(ii) Data encryption

(iii) Data description

(iv) All of these

(f) How many layers are present in the Internet Protocol Stack (TCP/IP model)?

(i) 7

(ii) 8

(iii) 6

(iv) 5

(g) Network congestion occurs _____.

(i) When a system terminates

(ii) When connection between two nodes terminates

(iii) In case of transfer failure

(iv) In case of traffic overloading

(h) A _____ is a device that forwards packets between networks by processing the routing information included in the packet.

(i) Bridge

(ii) Firewall

(iii) Hub

(iv) Router

(i) Communication channel is shared by all the machines on the network in _____.

(i) Unicast network

(ii) Multicast network

(iii) Anycast network

(iv) Broadcast network

(j) In computer network nodes are :

(i) The computer that originates the data

(ii) The computer that routes the data

(iii) The computer that terminates the data

(iv) All of these

(k) The first Network was called :

(i) CNNET

(ii) NSFNET

(iii) ASAPNET

(iv) ARPANET

(l) Communication between a computer and a keyboard involves _____ transmission.

(i) Automatic

(ii) Half-duplex

(iii) Full-duplex

(iv) Simplex

(m) Many low-shaped channels are interwoven into one high-speed transmission by :

(i) Frequency-division multiplexer

(ii) Pulse-division multiplexer

(iii) Both (i) and (ii)

(iv) Time-division multiplexer

(n) Which of the following is the difference between a multiplexer and a statistical multiplexer ?

(i) Multiplexer use X.25 protocol, while statistical multiplexers use the Alpha protocol

(ii) Statistical need buffers while multiplexers do need buffers

(iii) Multiplexers often waste the output link capacity while statistical multiplexers oppose its use

(iv) Statistical multiplexers need buffers while multiplexers do not need buffers

(o) LANs can be connected by devices called which operate on the data link layer :

(i) HDLC

(ii) Hub

(iii) Tunnel

(iv) Bridges

Group – B

Answer any **Five** questions of the following : $9 \times 5 = 45$

2. Explain the types of transmission modes.

3. What is network topology ? Explain the different network topologies.

4. Explain the OSI reference model with neat diagram.

5. Explain the TCP/IP reference model with neat diagram.

6. Explain AM, FM and PM.

7. Explain ASK, FSK, and PSK with neat diagram.

8. Explain the various types of multiplexing.

9. Write short notes on Unguided Media and Guided Media.

10. Write short notes on circuit switching, packet switching and message switching.

11. Explain the protocols in Data link layer.