TDC (CBCS) Even Semester Exam., 2022

COMPUTER SCIENCE

(Honours)

(4th Semester)

Course No. : CSCHCC–401T

(Computer Network)

Full Marks : 70
Pass Marks : 28

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

SECTION—A

Answer any *ten* questions : 2×10=20

1. Write down the difference between star and ring topologies.

2. Write the properties of fibre optic cable.

3. What is carrier signal? Is it analog or digital?

4. What is routing table in datagram networks?

5. What are the different types of addressing involved in virtual circuit network?

6. Write down the functions of dial-up modems.

7. Find out the hamming distance of 11001100 and 00111100.

8. What do you mean by odd parity? Give example.

9. Define flow control.

10. Write down the characteristics of router.

11. What are the differences between classless addressing and classfull addressing?

12. What is a mask in IPv4 addressing? What is a default mask in IPv4 addressing?

13. Compare connectionless and connection-oriented services.

14. Differentiate HTTP and HTTPS.

15. Write down the functions of application layer.

SECTION—B

Answer any *five* questions :   10×5=50

16. (a) Compare and contrast the TCP/IP and OSI models.   7

    (b) Explain different digital-to-digital line encoding schemes.   3

17. (a) Define the following :   5

    Bit-error rate, Throughput, Band rate, Channel capacity, Jitter

    (b) Explain different multiplexing techniques.   5

18. (a) Explain circuit switching and packet switching. Also write down the difference between these two.   4+3=7

    (b) Write down three phases of circuit switched network.   3

19. (a) Explain digital subscriber line along with its set of technologies, i.e., xDSL.   7

    (b) Compare and contrast a traditional cable network with a hybrid fibre coaxial network.   3

20. (a) Describe the services of datalink layer.

    (b) Discuss the concept of redundancy in error detection and correction.

    (c) What is framing? Why is framing used?

21. (a) If a set of numbers is (7, 11, 18, 10, 12), then explain the sender side coding as well as receiver side decoding in checksum technique.

    (b) Explain in detail stop-and-wait ARQ.

22. (a) Explain distance vector routing with a suitable example.

    (b) Define the following terms :

    Subnet, Supernet, Subnet mask

23. (a) What are the various classes of IP addresses? Explain with examples.

    (b) Identify the class of the IP address 192.168.1.1. How many bytes are required to store the IP address?   2+1

    (c) Write short notes on gateway and switch.

24. (a) Explain the well known ports of UDP. Also explain the user datagram format. 7

(b) Briefly explain the connection establishment phase in TCP. 3

25. (a) Explain the architecture of www. 4

(b) Explain the various parts of the following URL : 3

http : //www.aus.ac.in

(c) Write the technical note on domain name system. 3

★ ★ ★