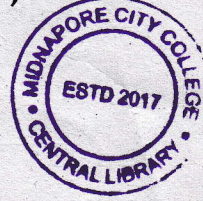


2023

3rd Semester Examination
COMPUTER SCIENCE (Honours)

Paper : C 7-T
[Computer Networks]
[CBCS]



Full Marks : 40

Time : Two Hours

*The figures in the margin indicate full marks.
Candidates are required to give their answers
in their own words as far as practicable.*

Group - A

Answer any *five* questions : $2 \times 5 = 10$

1. What do you mean by baud rate? 2
2. Differentiate between broadband and baseband? 2
3. What are the advantages and disadvantages of using hubs versus switches in a network? 2
4. Briefly explain the role of the Data Link Layer in error detection and correction. 2
5. What are the differences between static and dynamic routing? 2

P.T.O.

(2)

6. Give two examples of protocols used in the Application Layer. 2

7. What is a router and how does it differ from a bridge? 2

8. Write the difference between circuit switching and virtual circuit switching. 2

Group - B

Answer any *four* questions : 5×4=20

9. What is the role network layer in OSI reference model? Compare TCP/IP model with ISO/OSI model. 2+3

10. Explain the working principle of CSMA/CD protocol and its significance in Ethernet networks. 5

11. What are modems? Compare the following transmission media : 2+3

(i) Twisted pair

(ii) Coaxial Cable

(iii) Optical Fiber

12. Compare and contrast stop-and-wait ARQ and go-back-n ARQ error recovery protocols. 5

13. Discuss the three-way handshake process used in establishing a connection at the Transport Layer. 5



(3)

14. Generate the CRC code for the data word 1011010010. The divisor is 1011. 5

Group - C

Answer any *one* question : 10×1=10

15. Discuss the advantages and disadvantages of stop-and-wait protocol versus sliding window protocol with respect to their link utilization. Which one is better and why? 10

16. Design a network architecture for a university campus, including different types of network devices and communication protocols, considering security and scalability. Explain your choices and justify your design. 10

