Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 30452

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2024.

Fifth/Sixth Semester

Computer Science and Engineering

CS 8591 — COMPUTER NETWORKS

(Common to: Computer and Communication Engineering/Information Technology)

(Regulations 2017)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Write the functions of physical layer.
2. Compare packet switching and circuit switching.
3. Mention the purpose of media access control.
4. What does piconet?
5. Compare IPv4 and IPv6.
6. Differentiate unicast, multicast and broadcast.
7. List the functions of transport layer.
8. Write the difference between TCP and UDP.
9. Mention the role of SNMP.
10. What is the use of DNS?

PART B — (5 × 13 = 65 marks)

11. (a) Explain in detail TCP/IP protocol with a neat sketch. (13)

Or

(b) Elaborate on various transmission media. Compare it. (13)

12. (a) (i) Explain about HDLC. How does it differ from PPP. (7)

(ii) Describe the features of 802.11. (6)

Or

(b) (i) Write the working principle of bluetooth. (6)

(ii) Illustrate CSMA/CD in detail. (7)

13. (a) (i) What is the process of subnetting in IPv4? Explain how to subnet a given address. (7)

(ii) Explain the IPv4 packet structure. (6)

Or

(b) Explain various routing algorithms with suitable example. (13)

14. (a) (i) Explain the working principle of TCP. (7)

(ii) Explain the packet format of TCP and UDP. (6)

Or

(b) (i) Describe SCTP in detail. How does it differ from other transport protocols. (7)

(ii) Explain the advantages and disadvantages of UDP. (6)

15. (a) (i) Elaborate the features of FTP. (7)

(ii) How does SNMP work? Give suitable example. (6)

Or

(b) (i) Compare Telnet and SSH. (7)

(ii) Explain the functionalities of DNS. (6)

PART C — (1 × 15 = 15 marks)

16. (a) Consider the scenario that you are a network administrator. You want to setup two labs. How will you allocate the IP addresses to it? Mention the classes to be used to assign the address with proper justification. (15)

Or

(b) Discuss the challenges and benefits of implementing IPv6 in existing Networks. Describe some usecases of IPv6. (15)