Exam.Code:0922
Sub. Code: 33528

2055
B.E. (Information Technology)
Fourth Semester
PCIT-402: Computer Networks

Time allowed: 3 Hours **Max. Marks: 50**

NOTE: Attempt five questions in all, including Question No. I which is compulsory and selecting two questions from each Section.

x-x-x

Q1. a) What is a twisted pair cable and where is it commonly used?

b) What is the purpose of the data link layer in computer networks?

c) Briefly describe the difference between LAN, MAN and WAN.

d) What is IP addressing? Calculate the number of possible addresses in a /20 subnet.

e) What is DNS? Define "routing algorithm." (10)

Section – A

Q2. a) Explain the OSI and TCP/IP reference models and compare their functionalities. (05)

b) Describe and differentiate between LAN, MAN, WAN, and wireless networks. (05)

Q3. a) Explain the different types of MAC protocols such as ALOHA and CSMA. (05)

b) What are the various line coding techniques used in the physical layer? Explain with examples. (05)

Q4. a) Compare and contrast the IEEE 802.3, 802.4, and 802.5 standards in terms of medium access control. (05)

b) Discuss the sliding window protocols (one-bit, Go-back-N, Selective Repeat) in data link layer. (05)

Section – B

Q5. a) Explain the concept of Distance Vector and Link state routing with examples. (05)

b) Discuss the role of SNMP in network management. How does it facilitate the monitoring and control of network devices? Provide examples of its applications in modern networks. (05)

Q6. a) How do multiplexing and de-multiplexing work? Explain it with a suitable example (05)

b) Discuss the working of email protocols such as SMTP, POP3, and IMAP, and how they differ. (05)

Q7. a) Compare and contrast IPv4 and IPv6 in terms of addressing, header structure, and security features. (05)

b) Explain the role of DNS in network communication and how it resolves domain names to IP addresses. (05)

x-x-x