B127471(022)

B. Tech. (Hon's) (Fourth Semester) Examination, April-May 2023

(AICTE Scheme)

(CS Engg. Branch)

COMPUTER NETWORK

Time Allowed : Three hours

Maximum Marks : 100

Minimum Pass Marks : 35

Note : *Part (a) of each question is compulsory & carries 4 marks. Attempt any **two** parts from (b), (c) and (d) of each question and each part carries 8 marks.*

Unit-I

1. (a) Write down the difference between X.25 and Frame relay protocols.

   (b) What are the different types of network topologies? Explain in detail.

(c) Explain about the working flow of OSI and TCP/IP model.

(d) What is PSTN (Public Switched Telephone Network)?

Unit-II

2. (a) What is flow control in data link layer? Explain sliding window protocol methods

(b) Explain Hamming code with the example of 1011001.

(c) Explain random access protocol methods

(d) What is Ethernet. Explain various types of ethernet in tabular form for each.

Unit-III

3. (a) What is the difference between Subnetting and Supernetting? Explain with example.

(b) For the following IP Address

- 1 2 3 4

- 10 15 20 60

- 130 1 2 3

- 150 0 150 150

- 200 1 10 100

- 220 15 1 10

- 250 0 1 2

- 300 1 2 3

Identify the Class, Network IP Address, Direct broadcast address and Limited broadcast address of each IP Address

(c) Explain IPv4 and IPv6 header format in detail

(d) Explain Distance vector and Link state routing algorithm.

Unit-IV

4. (a) What is the concept of piggybacking?

(b) Differentiate between TCP and UDP

(c) Explain TCP congestion control methods in detail

(d) Explain leaky bucket method with suitable diagram

Unit-V

PTO

5. (a) What is DNS? Explain in detail.

   (b) Explain the working diagram of SMTP vs POP vs IMAP.

   (c) What is SNMP, explain with SNMP components, SNMP messages, SNMP security level, SNMP versions.

   (d) What is HTTP and FTP explain with detail.