

Printed Pages – 4

Roll No. ....

**B033314(033)**

**B. Tech. (Third Semester) Examination,  
Nov.-Dec. 2021**

**(AICTE Scheme)**

**(IT Branch)**

**COMPUTER NETWORKS**

***Time Allowed : Three hours***

***Maximum Marks : 100***

***Minimum Pass Marks : 35***

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

**Unit-I**

1. (a) What are different multiplexing techniques?

**B033314(033)**

**PTO**

[ 2 ]

- (b) Name the four basic network topologies and explain them giving all the relevant features.
- (c) What are the various transmission medium used for data transmission in computer networks?
- (d) With a neat diagram, explain OSI reference model.

**Unit-II**

- 2. (a) Define the Hamming code error correction and detection method.
- (b) Obtain the 4-bit CRC code for the data bit sequence 10011011100 using the polynomial  $X^4 + X^2 + 1$ .
- (c) Explain in details about the access method method and frame format used in Ethernet and token ring.
- (d) Explain CSMA protocols with Collision detection and Avoidance.

**Unit-III**

- 3. (a) Classify the functions of Bridges and Switches.

[ 3 ]

- (b) Compare the IPv4 and IPv6 network protocol with proper neat sketch.
- (c) Illustrate the ARP and RARP packet format and function.
- (d) Explain link state routing and discuss its advantages over shortest path routing.

**Unit-IV**

- 4. (a) Write the role of Multiprotocol Lable Switching in network.
- (b) Explain the TCP header and working of the TCP protocol.
- (c) What are the various parameters of quality of service offered by the transport layer? Discuss their significance.
- (d) Enumerate mechanism of three way handshake protocol for for TCP.

**Unit-V**

[ 4 ]

5. (a) Discuss about application layer and its services.
- (b) What are the two categories of cryptography methods? What is the main difference between the categories?
- (c) Explain in detail how electronic mail application is carried out in a network. Also explain the protocols used in this application.
- (d) Describe the role of a DNS on a computer network with reference to its components.