

T.E. / B.Tech / Sem-VI / R-19 / 'C' Scheme / Sub-CON / S.H. 2024

Date :- 10/12/2024

Duration: 3hrs

[Max Marks:80]

N.B. : (1) Question No 1 is Compulsory.

(2) Attempt any three questions out of the remaining five.

(3) All questions carry equal marks.

(4) Assume suitable data, if required and state it clearly.

Q.P. Code:- 10065697

- Q1. Attempt any FOUR [20]
- a Explain BUS topology with the help of suitable diagram and list its advantages and disadvantages [05]
 - b Explain Synchronous Time Division Multiplexing with the help of suitable diagram and list its disadvantages [05]
 - c What is ARQ? List the types of ARQ methods [05]
 - d Explain Time Slot Interchange Switch with the help of suitable diagram [05]
 - e List the applications of UDP [05]
- Q2. a Draw OSI reference model and explain function of each layer. Name the layers responsible for (1) end to end reliability (2) link to link reliability [10]
- b Explain the Ethernet frame structure with the functions of different fields and list its advantages and disadvantages [10]
- Q3. a Explain CSMA/CD media access control protocol with the help of flowchart [10]
- b Compare Stop and Wait ARQ, Go Back N ARQ and Selective Repeat ARQ Protocol with reference to (1) Sender window size, (2) Receiver window size, (3) Minimum sequence number, (4) Efficiency, (5) Type of acknowledgement, (6) Supported order at the receiving end, (7) Number of retransmissions in case of packet drop, (8) Transmission Type, (9) Implementation difficulty. Further, justify why selective repeat ARQ technique is the most efficient [10]
- Q4. a Explain HDLC data link layer protocol with respect to: [10]
- (1) Types of Modes (2) Types of Frames (3) Bit Stuffing
- b Compare Distance Vector Routing and Link State Routing. Further, justify why Link State Routing is more suitable for larger networks [10]
- Q5. a Compare IP Version 4 (IPv4) & IP Version 6 (IPv6). Further, list the benefits of IPv6 over IPv4 [10]
- b Sketch the TCP Header Format & explain in brief [10]
- Q6. a Explain in brief the Congestion Control Techniques [10]
- b Explain briefly: HTTP, FTP and SMTP [10]