

Duration: 3hrs

[Max Marks:80]

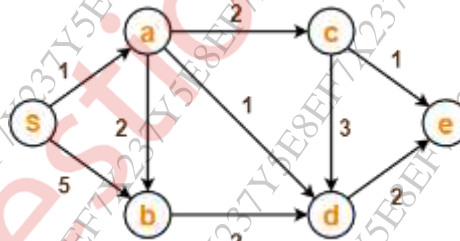
- N.B. : (1) Question No 1 is Compulsory.  
 (2) Attempt any three questions out of the remaining five.  
 (3) All questions carry equal marks.  
 (4) Assume suitable data, if required and state it clearly.

- Q1.** Attempt any FOUR [20]  
 a Explain physical, logical and port addressing with examples  
 b Compare hubs and bridges  
 c Explain different types of frames and their uses in HDLC protocol  
 d State the rules for transforming IPv6 packet header to IPv4 packet header  
 e Discuss the services provided by TCP protocol

- Q2.** a Explain Advanced DSL in detail [10]  
 b Explain virtual circuit approach and datagram approach in packet switching. [10]

- Q3.** a Explain classless addressing. What are the restrictions on the address blocks in classless addressing? [05]  
 An address in CIDR notation is 205.16.37.39/28. Find the mask in binary notation, the net id, the first address, last address and the number of hosts. [05]  
 b Discuss the working of CSMA/CD technique [10]

- Q4.** a Draw and explain UDP header. [05]  
 Compare TCP and UDP. [05]  
 b [10]



Find and draw the shortest route from source node 's' to all other nodes using Dijkstra's and Bellman-Ford algorithm

- Q5.** a Explain the layered architecture of TCP protocol [10]  
 b Discuss sliding window flow control with examples [05]  
 c Explain TCP three-way handshake with proper diagrams [05]
- Q6.** a Explain HTTP request/response transaction. Explain each field in the HTTP request and the response [10]  
 b Discuss the closed-loop congestion control mechanisms [10]