Sardar Patel Institute of Technology

Bhavan's Campus, Munshi Nagar, Andheri (West), Mumbai-400058, India

(Autonomous College Affiliated to University of Mumbai)

Mid Semester Examination

Mar 2019

Synoptic

Max. Marks: 20

Class: M.Tech.

Course Code: CE921

Duration: 60 Mins.

Semester: II

Branch: Computer Engineering

Name of the Course: Network Analysis and Design

Instruction:

(1) All questions are compulsory

(2) Draw neat diagrams

(3) Assume suitable data if necessary

Q No.		Max. Marks	CO
Q.1	What is Additive Increase and Multiplicative Decrease Mechanism for TCP Congestion Control? Consider an instance of TCP's Additive Increase Multiplicative Decrease(AIMD) algorithm where the window size at the start of the slow start phase is 2 MSS and the threshold at the start of the first transmission is 8 MSS. Assume that a timeout occurs during the fifth transmission. Find the congestion window size at the end of the tenth transmission. **Answer:** Additive Increase and Multiplicative Decrease Mechanism 03 Marks Problem solving with justification 02 Marks OR What is slow start in TCP Congestion Control? Why is the requirement of the slow-start phase in TCP congestion control? **Answer:** Slow Start in TCP Congestion Control 03 Marks Requirement of slow start phase 02 Marks	05	CO1

Q.2	Differentiate between IPv4 and IPv6	5	CO1
	Answer: Any five points mentioned below 05 Marks		
	IPv4: IPv4 has 32-bit address length IPv6:IPv6 has 128-bit address length		
	IPv4:It Supports Manual and DHCP address configuration IPv6: It supports Auto and renumbering address configuration		
	IPv4:In IPv4 end to end connection integrity is Unachievable IPv6:In IPv6 end to end connection integrity is Achievable		
	IPv4:Security feature is dependent on application IPv6:IPSEC is inbuilt security feature in the IPv6 protocol		
	IPv4:Address representation of IPv4 in decimal IPv6:Address Representation of IPv6 is in hexadecimal		
	IPv4:Fragmentation performed by Sender and forwarding routers IPv6:In IPv6 fragmentation performed only by sender		
	IPv4:In IPv4 checksumfield is available IPv6:In IPv6 checksumfield is not available		
	IPv4:It has broadcast Message Transmission Scheme IPv6:In IPv6 multicast and any cast message transmission scheme is available		
	IPv4:In IPv4 Encryption and Authentication facility not provided IPv6:In IPv6 Encryption and Authentication are provided		
Q.3	Illustrate the working of Routing Information Protocol (RIP). How the slow convergence problem is addressed in RIP.	5	CO1
	Answer: working of RIP protocol 03 Marks		
	solution to slow convergence problem : split horizon, hold-down timer and using a value 16 to represent infinty 02 Marks		
Q.4	Illustrate the working of Multiple Access with Collision Avoidance with Acknowledgement (MACAW) protocol.	5	CO3
	Answer: The working of MACAW with Diagram 05 Marks		