Sardar Patel Institute of Technology

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

(Autonomous College Affiliated to University of Mumbai)

End Semester Examination

May 2019

Synoptic

Max. Marks: 60 **Duration: 3 Hrs.**

Class: M.Tech. **Semester: II**

Course Code: CE921 **Branch: Computer Engineering**

Name of the Course: Network Analysis And Design

Instruction:

(1) All questions are compulsary

(2) Draw neat diagrams

(3) Assume suitable data if necessary

Q No.		Max. Marks	CO
Q.1 (a)	What is Random Early Detection method of congestion avoidance? What is the significance of Average Queue length in this method? **Ans:** Random Early Detection method of congestion avoidance -03 marks significance of Average Queue length-03 Marks	06	CO1
	OR		
	What are the various issues involved in resource allocation and explain any one in detail? **Ans:** Various issues – 2 Marks any one issue in details – 4 marks	06	CO1
(b)	Consider a RED gateway with $MaxP = 0.02$, and with an average queue length halfway between the two thresholds. 1. Find the drop probability Pcount for $count = 10$ and $count = 50$. 2. Calculate the probability that none of the first 10 packets are dropped. **Ans:** Drop probability calculation -03 Marks Calculate the probability that none of the first 10 packets are dropped.-03 Marks	06	CO1

	one another (out of signal range) when both attempt to send information to the same receiving node resulting is a collision –2M Hidden nodes Identification–1M Exposed Terminal- Overhearing a data transmission from neighboring nodes can inhibit one node from transmitting to other nodes –2M Exposed nodes Identification –1M **OR** Differentiate between reactive and proactive routing protocols. **Ans:** routing structure: reactive: Mostly Flat, Except CBRP proactive: Both Flat and hierarchical structures Periodic updates: reactive: Some nodes may require Periodic beacons proactive:Yes, some may use Conditional Control Overhead: reactive: low proactive: high Route acquisition delay: reactive: high proactive: low Bandwidth requirement: reactive: low proactive: high Power requirement reactive: low proactive: high	06	CO3
(b)	Illustrate with the help of state transition diagram the working of ATCP protocol. **Ans:** ATCP Introduction, Modes of operation, Functioning of ATCP layer–4M State transition diagram with explaination–2M	06	CO3
Q.3 (a)	How does Border Gateway Protocol(BGP) work? **Ans:** BGP operation –4M BGP message exchange using TCP: OPEN, UPDATE, KEEPALIVE, NOTIFICATION–2M	06	CO2
(b)	How does Open Shortest Path First (OSPF) protocol work? What are the features of OSPF? **Ans:** OSPF operation –4M OSPF Features supports authentication, Additional hierarchy, Load balancong –2M	06	CO2
Q.4 (a)	What are the different types of IPv6 addresses give example of each type? **Ans:** Each address type with exapmle : unicast, multicast and anycast –6M	06	CO2
(b)	What is software defined networking (SDN)? Illustrate with diagram the working of SDN. **Ans:** SDN definition –2M working of SDN –4M	06	CO5

	What are the different layers of network design? Give functionality of each layer? **Ans:** Network design layers –3M Functionality of each layer–3M	06	CO4
(b)	What is campus network? What are the design principles for campus network? **Ans:** Campus network –2M Design Principles–4M	06	CO4
	OR		
	What is data center? Illustrate With diagram the design model for a data center? **Ans:** data center – 2 Marks data center design– 4 marks	06	CO4