7/6/18

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 (KT)

June 2018

Max.Marks: 100 Duration: 3Hrs

Class: B.E. Semester: VII

Course Code: EXC704 Branch: ETRX

Name of the Course: Computer Communication and Networks

Instruction:

(1) All questions are compulsory

(2) Draw neat diagrams wherever required

(3) Assume suitable data if necessary

(3) CO – Course Outcomes

Q No.		Max. Marks	CO
Q.1 (a)	Define Multiplexing? Compare TDM and FDM.	10	CO1
Q.1 (b)	Five channels, each with a 200-kHz bandwidth, are to be multiplexed together. What is the minimum bandwidth of the link if there is a need for a guard band of 20kHz between the channels to prevent interference?. With a neat diagram, explain HDLC frame format.	10	CO2
	OR		
Q.1 (b)	Discuss data link layer protocols for noiseless (error-free) channels and those that can be used for noisy (error-creating) channels.	10	CO2
Q.2 (a)	What is NAT? Explain how address translation is done in NAT.	05	CO3
Q.2 (b)	1) A telephone line normally has a bandwidth of 3100 Hz (300 to 3400 Hz) assigned for data communications. The signal-to-noise ratio is usually 3162. Calculate the channel capacity C and comment. 2) Now consider an extremely noisy channel in which the value of the signal-to-noise ratio is almost zero. In other words, the noise is so strong that the signal is faint. Find channel capacity 'C' and comment.	05	CO1
	OR		
Q.2 (b)	We have four sources, each creating 300 characters per second. If the interleaved unit is a character and 1 synchronizing bit is added to each frame, find (a) the data rate of each source, (b) the duration of each character in each source (c) the frame rate (d) the duration of each frame, (e) the number of bits in each frame.	05	CO1
Q.2 (c)	Compare GEO, MEO and LEO. Prove mathematically that the visibility of Geosynchronous Orbiting Satellite is 24Hrs.	10	CO1
	OR		
Q.2 (c)	Discuss 1 persistent, non-persistent and p-persistent. Also compare TCP with UDP	10	CO1

Q.3 (a)	Define Error control and Flow control. Compare and contrast byte-stuffing and bit-stuffing.	05	CO2
Q.3 (b)	Discuss exposed and hidden node terminal problems in wireless networks.	05	CO1
Q.3 (c)	What are the factors that causes congestion? Discuss Warning bit,piggy-backing and choke packets used by transport layer.	10	CO4
	OR		
Q.3 (c)	What is QoS? Define the flow characteristics for QoS. Also discuss any 2 scheduling techniques used for QoS improvements.	10	CO4
Q.4 (a)	Draw and explain frame format of IEEE802.3.	05	CO2
Q.4 (b)	Discuss Max-Min fairness algorithm with example.	05	CO4
Q.4 (c)	Define Subnet Mask. Also discuss IP addressing concept and various classes of IP address.	10	CO3
Q.5 (a)	What are cookies and cache? Discuss in brief about Domain Name Server.	10	CO5
Q.5 (b)	Compare Connection Oriented and Connection-less protocols. Also discuss the working of FTP.	05	CO5
Q.5 (c)	Compare Leaky Bucket algorithm with Token Bucket algorithm.	05	CO4

————-Best of Luck————