



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 Synoptic/Breakup

Nov/Jan 2018-19

Max.Marks: 60

Class: B.E.

Course Code: EXC704

Name of the Course: Computer Communication and Networks

Duration: 3Hrs

Semester: VII

Branch: ETRX

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)	ISO-OSI model diagram (01mark) and the functionality of Physical layer (04marks).	05	CO1
	OR		
Q.1 (a)	Wireless transceivers can't send and receive on the same channel at the same time, so they can't detect collisions. This is due to the fact that there's an incredible difference between send power (generally around 100mw) and receive sensitivity (commonly around 0.01 to 0.0001mw). The sending would cover up any possible chance of receiving a foreign signal, no chance of "Collision Detection". For this reason Collision Avoidance with Control Messages is necessary. On most wired networks the (like Ethernet) the voltage is around 1 to 2.5v; both sending and receiving are roughly the same voltage. So if you're sending a 2.5v signal, and someone else collides with a -2.5v signal, the "Detection" parts will see a signal somewhere around 0v and know a collision occurred.	05	CO1
Q.1 (b)	Channelization: In this, the available bandwidth of the link is shared in time, frequency and code to multiple stations to access channel simultaneously (02 marks). Discuss on FDM, TDM (08 marks).	10	CO1
Q.2 (a)	Propagation Delay: Amount of time taken by a packet to make a physical journey from one router to another router. $\text{Propagation Delay} = \frac{\text{Distance between routers}}{\text{Velocity of propagation}}$ RoundTripTime (RTT) = 2* Propagation Delay TimeOut (TO) = 2* RTT Time To Live (TTL) = 2* TimeOut. (Maximum TTL is 180 seconds). A CDN will spread the information across the world so that it's available for visitors no matter where they are trying to access your site.	05	CO2

Q.2 (b)	<p>1) Go Back-N(ARQ):The sending-window size enables the sender to send multiple frames without receiving the acknowledgement of the previous ones. The receiving-window enables the receiver to receive multiple frames and acknowledge them. The receiver keeps track of incoming frame's sequence number. When the sender sends all the frames in window, it checks up to what sequence number it has received positive acknowledgement. If all frames are positively acknowledged, the sender sends next set of frames. If sender finds that it has received NACK or has not receive any ACK for a particular frame, it retransmits all the frames after which it does not receive any positive ACK.</p> <p>2) Selective Repeat ARQ: In Selective-Repeat ARQ, the receiver while keeping track of sequence numbers, buffers the frames in memory and sends NACK for only frame which is missing or damaged. The sender in this case, sends only packet for which NACK is received(05marks each).</p> <p style="text-align: center;">OR</p>	10	
Q.2 (b)	frame format of 1) IEEE802.3 2) IEEE802.5.(05 marks each)	10	CO2
Q.3 (a)	<p>DHCP (Dynamic Host Configuration Protocol) is a network management protocol used to dynamically assign an Internet Protocol (IP) address to any device, or node, on a network so they can communicate using IP. DHCP automates and centrally manages these configurations rather than requiring network administrators to manually assign IP addresses to all network devices. DHCP can be implemented on small local networks as well as large enterprise networks.</p> <p>How DHCP works DHCP runs at the application layer of the Transmission Control Protocol/IP (TCP/IP) protocol stack to dynamically assign IP addresses to DHCP clients and to allocate TCP/IP configuration information to DHCP clients. This includes subnet mask information, default gateway IP addresses and domain name system (DNS) addresses. DHCP is a client-server protocol in which servers manage a pool of unique IP addresses, as well as information about client configuration parameters, and assign addresses out of those address pools. DHCP-enabled clients send a request to the DHCP server whenever they connect to a network.</p> <p>Clients configured with DHCP broadcast a request to the DHCP server and request network configuration information for the local network to which they're attached. A client typically broadcasts a query for this information immediately after booting up. The DHCP server responds to the client request by providing IP configuration information previously specified by a network administrator. This includes a specific IP address as well as for the time period, also called a lease, for which the allocation is valid. When refreshing an assignment, a DHCP client requests the same parameters, but the DHCP server may assign a new IP address based on policies set by administrators.(06marks)</p> <p>Message format (04 marks)</p> <p style="text-align: center;">OR</p>	10	CO3

Q.3 (a)	Class C : N.N.N.H 110xxxxx.xxxxxxxx.xxxxxxxx.xxxxxxxx Class C : 192.168.1.0 No. of Subnets: 6; No. of hosts: 30/subnets (04 marks). if you convert 3 host bits to network bits, then customize subnet masks is 255.255.255.224. subnet range: 192.168.1.32 - 192.168.1.223 (06 amrks)	10	CO3
Q.3 (b)	any one congestion detection and any one congestion avoidance mechanism (05 marks each).	05	CO4
Q.4 (a)	Elaborate on HTTP architecture with a neat labelled diagram (06 marks). Also identify the difference between Persistent and Non-persistent HTTP (04 marks).	10	CO5
Q.4 (b)	Difference between HTTP and HTTP's.	05	CO5//

—Best of Luck—