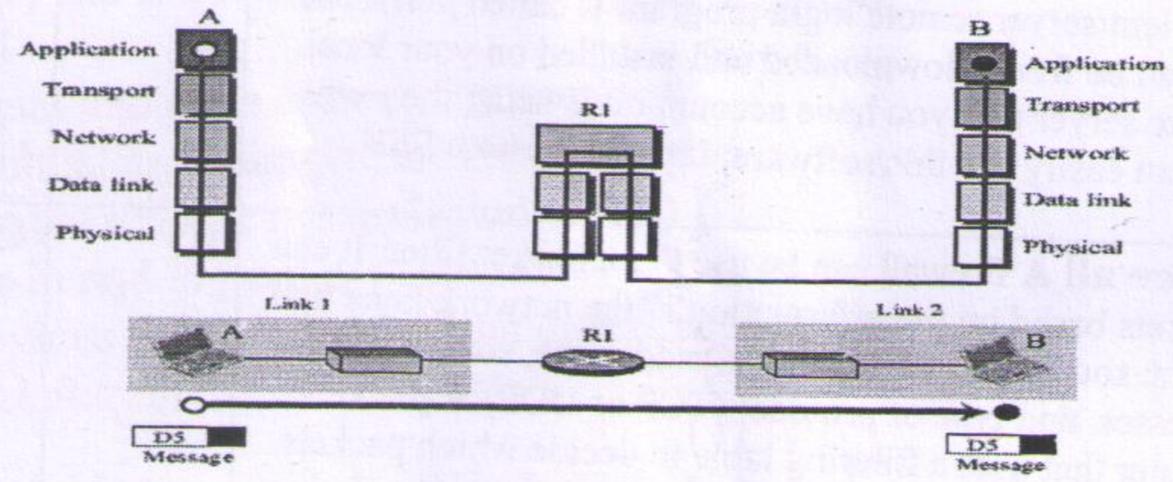
Sardar Patel Institute of Technology

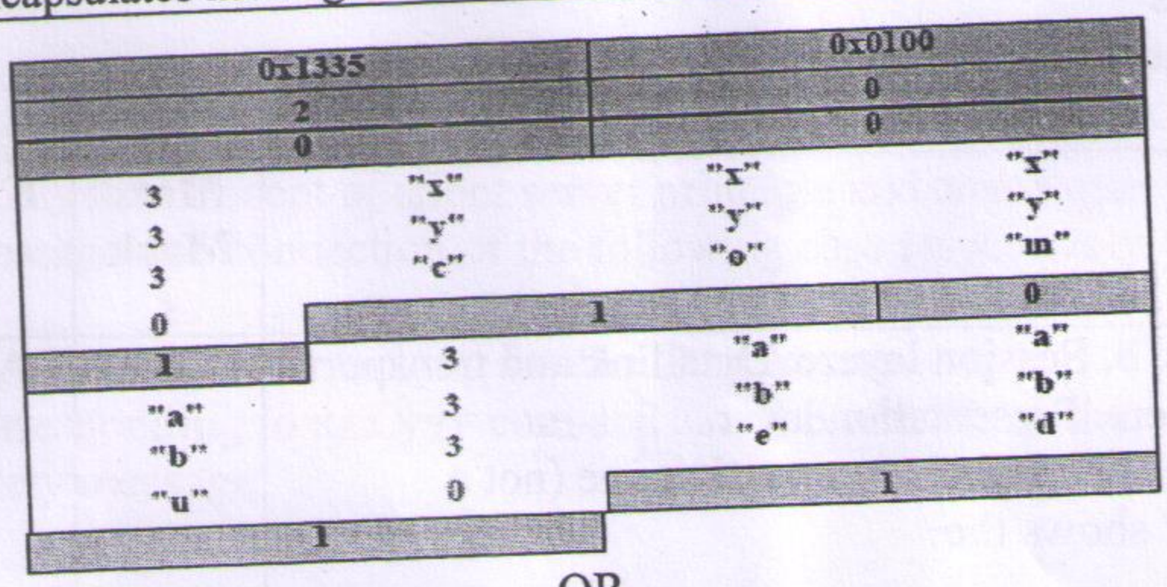
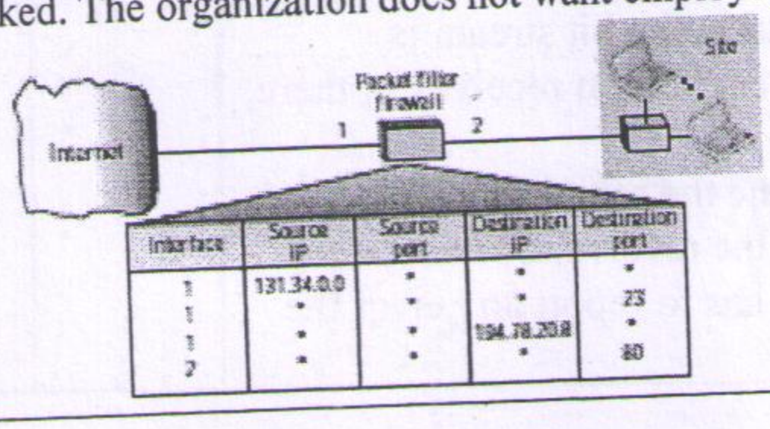
Bhavan's Campus, Munshi Nagar, Andheri (West), Mumbai-400058, India
(Autonomous College Affiliated to University of Mumbai)

Mid Semester Examination
~~Tuesday- 24/09/19~~ 3/3/20 **Synoptic**

Max. Marks: 20 Duration: 60 Min
Class: T.E. Semester: VI
Course Code: ET62 Branch: Electronics and Telecommunication
Name of the Course: Computer Communication Networks

Instructions:
(1) All Questions are Compulsory
(2) Draw neat diagrams
(3) Assume suitable data if necessary

Question No.		Max. Marks	CO		
Q1 a)	**a.** Presentation layer **b.** Session layer**c.** Data link and transport layers**d.** Session layer**e.** Presentation layer **OR** If we think about the switch as a passive one (not a bridge), Figure 2.E7 shows the solution.  	05	CO1	2	2.1.3
Q 1b)	The header at the transport layer should at least include the source and destination port number. This means the size of the header is at least 2 + 2 = 4 bytes. The header at the data link layer should at least include the physical source and destination addresses. This means the size of the header is at least 6 + 6 = 12 bytes. At the physical layer, the signal representing the bit stream is broadcast to all stations in a network. Every station receives it; there is no need for addresses in this layer. The destination address is needed to define the recipient of the message; the source address is needed if the receiver of the message has to respond or the intermediate nodes has to report any error the source.	05	CO1	3	1.2.1

Q2 a)	When IPSec is used in the transport mode, two parties need to first create cryptographic secrets between themselves before exchanging secure data. This cannot be done using the connectionless service provided by IP. The two parties need to create a virtual connection-oriented service between themselves over the services provided by IP. This is done using the security association (SA) described in the text.3. SSL provides both entity and message authentications. Two entities are authenticated for each other using the handshake protocol. The record protocol provides message authentication when it encapsulates messages from the application layer.	02	CO2	4	2.1.3
Q2 b)	 OR One of the common client/server remote login program is called *putty*.The client *putty* program can be freely downloaded and installed on your local computer. If the remote server that you have account on is using the *putty* server program, you can easily use this software. It provides both SSH, TELNET.	03	CO3	5	2.2.4
Q.3	**Packet-Filter Firewall** A firewall can be used as a packet filter. It can forward or block packets based on the information in the network layer and transport layer headers: source and destination IP addresses, source and destination port addresses, and type of protocol (TCP or UDP).A **packet-filter firewall** is a router that uses a filtering table to decide which packets must be discarded (not forwarded). Figure 30.33 shows an example of a filtering table for this kind of a firewall.According to the figure, the following packets are filtered:1. Incoming packets from network 131.34.0.0. are blocked (security precaution). Note that the * (asterisk) means "any."2. Incoming packets destined for any internal TELNET server (port 23) are blocked. 3. Incoming packets destined for internal host 194.78.20.8. are blocked. The organization wants this host for internal use only.4. Outgoing packets destined for an HTTP server (port 80) are blocked. The organization does not want employees to browse the Internet. 	05	CO3	2	1.2.1