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PES University, Bengaluru-85

(Established under Karnataka Act No. 16 of 2013)

UE19CS253

JULY 2021: END SEMESTER ASSESSMENT, B.TECH, LATERAL ENTRY

UE19CS253 – COMPUTER NETWORKS

Time: 03 Hours **Answer All Questions** **Max Marks: 100**

All the questions are compulsory
Draw the diagrams wherever necessary
Figures to the right indicates marks

1	a)	What is an Internet? Using a diagram explain the components required for developing any communication Network.	5
	b)	What is cloud computing? Briefly explain 3 cloud computing service models.	5
	c)	Suppose there are 10 users and only one user is active and generates one thousand packets containing 1000 bit each. The link capacity is 1 Mbps**.** Which switching technique will you suggest for this situation? Justify your answer. Also mention at least two scenarios in which the performance of packet switching network can be superior to that of circuit switching?	5
	d)	What is a packet switch? Which are the two most prominent packet switches in today's Internet? Explain each in brief.	5
2	a)	What is access networks? With the help of diagram explain DSL Internet access in detail.	5
	b)	Which mechanism is adapted by HTTP to verify the cache objects are up to date? Illustrate with an example.	5
	c)	Using a diagram, explain how a process running at one end of internet communicates with the process at another end?	4
	d)	Write a short note on: 1. SNMP 2. Telnet	6
3	a)	Draw and Explain UDP segment structure. Name any two applications/protocols which uses UDP as underlying transport protocol.	5
	b)	Which are the three additional capabilities required in ARQ protocol to handle the presence of bit errors as compared to rdt 1.0	5
	c)	Draw the TCP segment structure and explain all the six falgs in brief.	5
	d)	Compare and Contrast Stop-and-wait protocol and Sliding Window Protocol:	5
4	a)	1. Find the class of the following IP address.	6

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		i. 11000111 11110011 10001111 11011111 ii. 194.168.25.1 iii. 167.25.33.2 iv. 11001010 10101111 10010011 10101010 2. If the IP address of one of the host in the network is 125.64.12.56/24, what will be the first address in the network and what will be the last address in the network?	
	b)	Expalin the IP Fragmentation concept adapted at router by illustrating an example.	5
	c)	When the new host arrives in the network how it obtains the IP address with the help of DHCP? Explain the four step process by drawing DHCP Client server interactions	5
	d)	List down four objections IETF community has for widespread deployment of NAT.	4
5	a)	What are different bit level error detection techniques? Explain one bit even parity and two dimensional even parity techniques with example.	5
	b)	What is wireless LAN? Explain the Access Point, Basic Service Set and Extended Service Set terminologies in detail.	5
	c)	By drawing the switch table explain why switch is called as an intelligent device.	5
	d)	Write Short notes on: i. VLAN WPA2	5