VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS), HYDERABAD
Accredited by NAAC with A++ Grade
B.E. (E.C.E.) VI-Semester Main & Backlog Examinations, June-2022
Computer Networks

Time: **3 hours**   Max. Marks: **60**

*Note: Answer all questions from **Part-A** and any **FIVE** from **Part-B***

Part-A (10 × 2 = 20 Marks)

Q. No.	Stem of the question	M	L	CO	PO
1.	Mention the advantages of a multipoint connection over a point-to-point connection?	2	1	1	1
2.	Distinguish between forward error correction versus error correction by retransmission.	2	2	1	1
3.	For the following transmitted data bits 10111110101011111111101010101111100000 apply bit stuffing.	2	2	2	2
4.	Specify the role of the address field in a packet traveling through a datagram network?	2	1	2	1
5.	What is a mask in IPv4 addressing? What is a default mask in IPv4 addressing?	2	2	3	1
6.	Give two example computer applications for which connection-oriented service is appropriate.	2	1	3	1
7.	Are both UDP and IP unreliable to the same degree? Why or why not?	2	2	4	1
8.	List out the elements of Transport Layer.	2	1	4	1
9.	Justify how DNS and IP address are related.	2	2	5	1
10.	Mention the importance of Simple Network Management Protocol (SNMP).	2	1	5	1

Part-B (5 × 8 = 40 Marks)

11. a)	Suppose there is a change in the service (set of operations) provided by layer k. How does this impact services at layers k-1 and k+1? Explain your answer with proper justifications.	4	2	1	2
b)	Given the dataword 1010011110 and the divisor 10111, a) Show the generation of the codeword at the sender site (using binary division). b) Show the checking of the codeword at the receiver site (assume no error).	4	4	1	2
12. a)	How long does a station, s, have to wait in the worst case before it can start transmitting its frame over a LAN that uses the Stop and wait protocol? Explain.	4	4	2	2
b)	Illustrate the Architecture and Protocol Stack of 802.11.	4	2	2	1

			M	L	CO	PO
13.	a)	Using Dijkstra Algorithm find the shortest path to reach from A to H .(Step wise procedure)	4	3	3	2
	b)	A token bucket scheme is used for traffic shaping. A new token is put into the bucket every 5 μsec. Each token is good for one short packet, which contains 48 bytes of data. What is the maximum sustainable data rate?	4	4	3	2
14.	a)	Explain the User datagram protocol used in the Transport layer with an example.	4	2	4	1
	b)	Compare the TCP header and the UDP header. List the fields in the TCP header that are missing from UDP header. Give the reason for their absence.	4	3	4	1
15.	a)	Describe the addressing system used by Simple Mail Transfer Protocol (SMTP).	4	1	5	1
	b)	In symmetric-key cryptography, how do you think two persons can establish a secret key between themselves? Explain your answer.	4	3	5	1
16.	a)	Explain the bidirectional approach for the Selective-Repeat ARQ Protocol using piggy-backing. Note that both parties need to use the same approach.	4	3	1	1
	b)	Consider the delay of pure ALOHA versus slotted ALOHA at low load. Explain with an example	4	3	2	1
17.		Answer any *two* of the following:				
	a)	Contrast and compare distance vector routing with link state routing.	4	2	3	1
	b)	Discuss the services provided by the Transport layer.	4	1	4	1
	c)	Explain any two Authentication protocols	4	2	5	1

M : Marks;   L: Bloom's Taxonomy Level;   CO; Course Outcome;   PO: Programme Outcome

i)	Blooms Taxonomy Level – 1	22.50%
ii)	Blooms Taxonomy Level – 2	37.50%
iii)	Blooms Taxonomy Level – 3 & 4	40%

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