

Hall Ticket Number:

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Code No. : 16413

**VASAVI COLLEGE OF ENGINEERING (Autonomous), HYDERABAD**

**B.E. (E.C.E. : CBCS) VI-Semester Main Examinations, January-2021**

**Computer Networks**

Time: 2 hours

Max. Marks: 60

*Note: Answer any NINE questions from Part-A and any THREE from Part-B*

**Part-A (9 × 2 = 18 Marks)**

Q. No.	Stem of the question	M	L	CO	PO
1.	Assume 8 devices are arranged in a mesh topology. How many cable links are needed? How many ports are needed for each device?	2	3	1	2
2.	Draw the data flow diagram for the Stop and Wait ARQ protocol	2	2	2	1
3.	Compare virtual circuit and datagram techniques	2	2	2	1
4.	Consider the delay of pure ALOHA versus slotted ALOHA at low load. Which one is less? Justify your answer.	2	3	2	1
5.	Discuss about selective Flooding	2	2	3	1
6.	Given the subnet Mask 255.255.255.192, What is the host address and subnet of the following IP address 197.1.2.67	2	3	4	2
7.	Discuss Clark's Solution to the silly window syndrome	2	2	4	1
8.	List the transport layer services	2	2	3	1
9.	Discuss about POP3 protocol	2	2	4	1
10.	Message: 1111001101000000, Pad: 1010010101001011 Calculate the Ciphertext?	2	3	5	2
11.	Describe bit stuffing with a neat example	2	3	2	1
12.	Justify the usage of PAD in the MAC Frame format	2	2	2	1
<b>Part-B (3 × 14 = 42 Marks)</b>					
13. a)	Explain TCP/IP reference model	7	2	1	1
b)	With a neat diagram discuss Go Back N Protocol	7	2	2	1
14. a)	Draw IEEE 802.3 frame format and explain	8	2	2	1
b)	Describe learning bridge protocol with a neat example	6	2	2	1
15. a)	Describe Distance Vector Routing Algorithm with an example	7	2	3	1
b)	Draw the structures of IPv4 Header format and explain	7	2	4	1

Contd... 2

16. a)	Justify the usage of UDP with real-time applications	6	3	4	1
b)	If the TCP round-trip time, <i>RTT</i> , is currently 30 msec and the following acknowledgements come in after 26, 32, and 24 msec, respectively, Calculate the new <i>RTT</i> estimate using the Jacobson algorithm? Use $\alpha = 0.9$ .	8	3	3	2
17. a)	Create HTML(Use Tags) for the given formatted page: <b>Welcome to VCE Home Page</b> Thanks for visiting <b>VCE</b> home page. You can access data electronically (by WWW), by telephone, or by email. <b>ECE Information</b> . Faculty . Students <b>Contact information</b> . By telephone: +91 40 23146003 . By email: info@vce.ac.in	7	3	4	3
b)	Explain AES algorithm with an example	7	2	5	1
18. a)	$G=1\ 0\ 0\ 1$ , and suppose that $D$ has the value $1\ 0\ 1\ 1\ 1\ 0\ 0\ 0\ 0$ . Use CRC and compute remainder.	7	3	2	2
b)	Describe CSMA/CD technique	7	2	2	1
19.	Answer any <i>two</i> of the following:				
a)	A block of addresses is granted to a small organization. We know that one of the addresses is 205.16.37.39/28. What is the first address in the block?	7	3	4	2
b)	Consider the bandwidth as 50 Kbps, one way transit time=240 ms and the segment size is 1000 bit. Consider the event of a segment transmission and the corresponding ACK reception. Find the maximum number of segments that can be outstanding during this duration.	7	3	4	2
c)	Describe SNMP protocol for network management application	7	2	4	1

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

S. No.	Criteria for questions	Percentage
1	Fundamental knowledge (Level-1 & 2)	60
2	Knowledge on application and analysis (Level-3 & 4)	40
3	*Critical thinking and ability to design (Level-5 & 6) (*wherever applicable)	0

\*\*\*\*\*