

**VIT**Vellore Institute of Technology
Approved by the Government of Tamil Nadu, Government of India**Slot : B2 + TB2****School of Computer Science Engineering and Information Systems****Fall Semester 2024-2025****Continuous Assessment Test – II****Programme Name & Branch : BTech (IT)****Course Name & code: Computer Networks / BITE305L****Class Number (s): VL2024250103370, VL2024250103358, VL2024250103364****Faculty Name (s) : Dr.C Navaneethan , Dr.Vani M.P, Dr. Rahamathunnisa.U****Exam Duration: 90 Min.****Maximum Marks: 50**

Q.No.	Question	Max Marks	CO	BL																																																																								
1.	Consider a dataword to be transmitted is 10010001. Determine the sent codewords for (i) even parity scheme (ii) odd parity scheme. During transmission, the codeword is modified to 101100111. Determine the Hamming distance between sent and received codewords for (i) even parity scheme (ii) odd parity scheme. Which parity scheme can detect the error? Justify your answer.	10	CO3	BL5																																																																								
2.	The message HELLO WORLD! has to be transferred. At the sender end, determine the internet checksum and the transmitted data. How does the receiver conclude that there is no error in the received message? Show the calculations at the receiver end if there are no errors. ASCII-Hexadecimal table <table><tr><td>Symbo l</td><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td></tr><tr><td>Hex Value</td><td>41</td><td>42</td><td>43</td><td>44</td><td>45</td><td>46</td><td>47</td><td>48</td></tr><tr><td>Symbo l</td><td>I</td><td>J</td><td>K</td><td>L</td><td>M</td><td>N</td><td>O</td><td>P</td></tr><tr><td>Hex Value</td><td>49</td><td>4A</td><td>4B</td><td>4C</td><td>4D</td><td>4E</td><td>4F</td><td>50</td></tr><tr><td>Symbo l</td><td>Q</td><td>R</td><td>S</td><td>T</td><td>U</td><td>V</td><td>W</td><td>X</td></tr><tr><td>Hex Value</td><td>51</td><td>52</td><td>53</td><td>54</td><td>55</td><td>56</td><td>57</td><td>58</td></tr><tr><td>Symbo l</td><td>Y</td><td>Z</td><td><spa ce></td><td>!</td><td></td><td></td><td></td><td></td></tr><tr><td>Hex Value</td><td>59</td><td>5A</td><td>20</td><td>21</td><td></td><td></td><td></td><td></td></tr></table>	Symbo l	A	B	C	D	E	F	G	H	Hex Value	41	42	43	44	45	46	47	48	Symbo l	I	J	K	L	M	N	O	P	Hex Value	49	4A	4B	4C	4D	4E	4F	50	Symbo l	Q	R	S	T	U	V	W	X	Hex Value	51	52	53	54	55	56	57	58	Symbo l	Y	Z	<spa ce>	!					Hex Value	59	5A	20	21					10	CO3	BL5
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3.	Assume that you have been appointed as a network administrator for the NetShare ISP Company. Your company was allocated the IP address of 155.156.0.0/16. Your company requires planning minimum of 5 groups of sub service providers with the following details. i. Group 1 customer requires 1024 addresses. ii. Group 2 customer requires 512 addresses. iii. Group 3 customer requires 256 addresses. iv. Group 4 customer requires 120 addresses. v. Group 5 customer requires 60 addresses. Being the network administrator of the ISP service provider, design the sub blocks of your company with proper range and slash notation representation and identify the subnet mask of each group. Also identify the remaining IP address to be used.	10	CO4	BL6
4.	Suppose a network with IP Address 221.162.183.0 is divided into 3 subnets. Find the following for each subnet: a. Total number of hosts per subnet b. Subnet Address c. First Host ID d. Last Host ID e. Direct Broadcast Address f. Subnet mask	10	CO4	BL6
5.	An IPv4 datagram has arrived with the following information in the header (in hexadecimal): 0x45 00 00 54 00 03 58 50 20 06 00 00 7C 4E 03 02 B4 0E 0F 02 a. What is the header size? b. Are there any options in the packet? c. What is the size of data? d. Is the packet fragmented? e. How many more routers can the packet travel to? f. What is the protocol number of the payload being carried by the packet?	10	CO4	BL4

