



CAT II – October 2022

Programme	: M.Tech CSE BA (Integrated)	Semester	: Fall 2022-2023
Course	: Computer Network Essentials	Code	: CSE 3039
Faculty	: Dr. T. Subbulakshmi	Class Nbr	: CH2022231000997, CH2022231000998
		Slot	: B1
Time	: 1.5 Hours	Max. Marks	: 50

Answer ALL Questions

Instructions : Non-programmable calculators could be used. Use the question numbers which are given only in the question

Q.No.	Sub. Sec.	Question Description	Marks
1		<p>Consider the IP address 189.189.189.189 was sanctioned to an organization. The requirement of IP addresses for different labs are given below</p> <ul style="list-style-type: none">• Lab1 : 15000 devices needs allocation of addresses• Lab2 : 16000 devices needs allocation of addresses• Lab3 : 14000 devices needs allocation of addresses• Lab 4 : 16200 devices needs allocation of addresses <p>Allocate the given IP to the four networks using the subnetting procedure and write the following for every subnet.</p> <ul style="list-style-type: none">• The network address in CIDR notation• The broadcast address• The network mask for the class• The first and last address• The first and last usable address• The subnetwork mask of the lab• The total number of addresses allocated to the lab• The number of allocated addresses• The number of unallocated addresses	10
2		<p>Consider the IP address 152.16.55.22/22. Find out the 10th address in the first four subnets of the given IP.</p>	10
3		<p>A bank uses the integrity checking mechanism for the transmission of OTPs. Demonstrate the same using the hamming code for checking the integrity for the OTP data "9834"</p> <p>(Note : Generate the parity bits for the first 14 bits of the given data)</p> <p>Analyze the given sliding window protocols for the following cases for the transmission of 10 frames.</p> <p>Stop and Wait ARQ – all the odd numbered frames are lost</p>	10
4		<p>Go Back and ARQ – timer expired for all the 3 and 3 multiple frames.</p> <p>Selective repeat – ack not received for all the even numbered frames</p> <p>Draw the sequence of reception of all the 10 frames from sender to receiver. Assume the window size and mention your assumption in the answer sheet.</p> <p>(Note: Use ONLY line diagrams with a bit of description to explain the same)</p>	10
5		<p>Consider that Go-Back-N ARQ is used for the flow control at the level of the Data Link Layer. The size of the sending window is fixed as 7. Present a detailed analysis of the number of attempts required to send 15 frames when every 6th frame is getting lost.</p>	10