RAJKIYA ENGINEERING COLLEGE, AMBEDKAR NAGAR, UP

1st Sessional Examination December -2023 (Odd Semester)

Subject Name: Data Structure

Subject Code: BCS-301

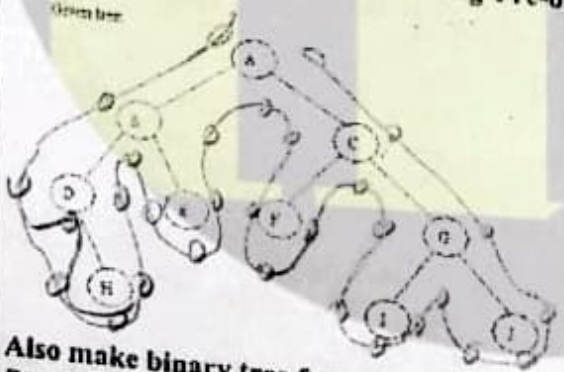
Max Marks: 20

Time: 1.5 Hours

Branch & Year: B.Tech (IT) Second year

Roll No: | | | | | | | | | | |

Section 1: Attempt all Questions. All Questions carry equal marks. (5×4=20)

Q. No.	Questions	CO	Bloom's Taxonomy Level
1	Convert infix to postfix and prefix using stack: ((A + B /G^H) — C * (D / E)) + F. Also show how the output will be calculated. (Put integer values for A=5, B=27, C=2, D=8, E=4, F=8, G=3, H=2).	CO 5	K5, K6
2	Construct Humffman Coding and calculate number of bits per character-	CO 3	K3
3	Explain Stack with its basic operations. Perform following operations on stack with size 4 and give the output with steps. PUSH(3), PUSH(4), PUSH(5), PUSH(6), PUSH(7), PUSH(8), POP(), PUSH(10), PUSH(11), POP(), POP(), POP(), POP(), PUSH(12), PUSH(13), POP(), PUSH(23)	CO 3	K3
4	If total number of elements are 6 in singly linked list and doubly link list then explain the steps to delete 5th element in the lists. (Assume elements from 1-6 and explain separately for singly linked list and doubly linked list)	CO 1	K1, K2
5	Traverse the below given tree using Pre-order, Post-order and In-order.  Also make binary tree from the given In-order and Pre-Order- Pre-Order:10, 20, 40, 50, 30, 60 In-Order: 40, 20, 50, 10, 60, 30	CO 4	K4

Character	a	b	c	d	e	f
Frequency	5	9	12	13	16	45