D.Y. PATIL COLLEGE OF ENGINEERING & TECHNOLOGY
KASABA BAWADA KOLHAPUR-416006
(An Autonomous Institute)
S. Y. B. Tech (ETC), Sem-III

Q. Paper Code: 23SYET204304
Set-: I

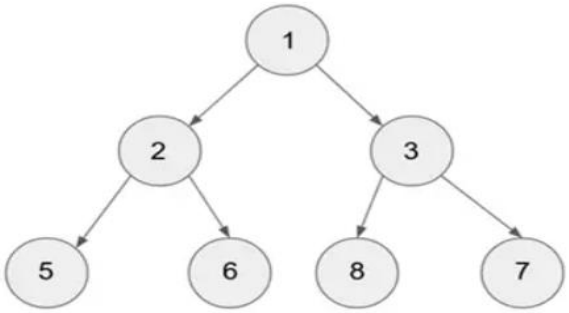
END SEMESTER EXAMINATION (ESE), Jan. – 2023
Course Name: Data Structures and Algorithms, Course Code: 201ETL204

Seat No:

Day and Date: Monday, 23.01.2023
Time: 2.00 pm to 4.00 pm **Max. Marks- 50**

Instructions:

i. All Question are compulsory.
ii. Figure to the right indicate full marks.

BT	CO's	Q.No.		Marks
		Q.1	**All Questions are compulsory**	**20**
2	CO1	**a**	Explain with example classification of data structure.	**6**
2	CO2	**b**	Explain bubble sort algorithm with example.	**7**
2	CO3	**c**	Write an algorithm and explain inserting a node at the beginning of a linked list and determine time complexity of algorithm .	**7**
		Q.2	**All Questions are compulsory**	**10**
3	CO2	**a**	Convert following infix expression into postfix expression by using stack **A * B- (C + D) + E** **OR** Evaluate following Postfix expression using stack **2 5 3 6 + * * 15 / 2 -**	**5**
2	CO2	**b**	Define Queue data structure and Explain circular Queue.	**5**
		Q.3	**All Questions are compulsory**	**10**
2	CO4	**a**	Create a binary search tree using given elements through step by step procedure. 45, 15, 79, 90, 10, 55, 12, 20, 50 **OR** What is pre-order, in-order and post-order traversal sequence for binary tree shown in figure. 	**5**

2	CO4	**b**	Explain basic terminologies used in trees	**5**
		Q.4	**Attempt any two out of three questions**	**10**
2	CO4	**a**	Explain representation of graphs using Adjacency Matrix	**5**
2	CO4	**b**	Explain different Hash function.	**5**
2	CO4	**c**	Explain BFS algorithm for graph with example.	**5**

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