



D.Y. PATIL COLLEGE OF ENGINEERING & TECHNOLOGY
KASABA BAWADA KOLHAPUR-416006
 (An Autonomous Institute)

Q. Paper Code:
22SYETC

S. Y. B. Tech-ETC (Semester-III)

END SEMESTER EXAMINATION, OCT/NOV- 2021-22

COURSE NAME: Data Structures and Algorithms, COURSE CODE: 201ETL204

Day and Date: Tuesday, 25/01/2022
Time: 11.00 am to 12.30Pm

Seat No :
Max. Marks- 50

Instructions:

- i. All Questions are compulsory.
- ii. Figure to the right indicate full marks.
- iii. Give suitable general Instructions
- iv. Any other Course Specific Instructions.

BT	CO's	Q. No.		Marks
		Q.1	Attempt the following	20
2	CO1	a	Distinguish between array and linked list data structure.	7
2	CO2	b	Explain sparse matrices and their types with the help suitable examples	7
2	CO3	c	What is time space tradeoff? Explain with examples.	6
		Q.2	Attempt the following	15
2	CO4	a	What is priority queue? Write an algorithm to add or remove item from priority queue	7
2	CO2	b	Write an algorithm to evaluate a postfix expression and explain it with suitable example. OR Write an algorithm/pseudocode to convert a given infix expression to postfix expression? Trace the steps involved in converting the given infix expression $((A + B)^C) - ((D * C) / F)$ to postfix expression	8
		Q.3		15
2	CO4	a	Explain tree traversal techniques with examples	7
2	CO4	b	Give algorithm/ pseudocode for DFS. Demonstrate DFS using suitable example OR Demonstrate the insertion of the keys 5, 28, 15, 20, 33, 12, 17, 32 into a hash table with collisions resolved by linear probing. Let the table have 9 slots, with the starting index 0. Let the hash function be $h(k) = k \text{ mod } 9$	8