R18 Regulation *Subject code: 2P3EB & 2P3FB*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech III Semester Supplementary Examinations, July 2024

Data Structures
(Common to CSE & IT)

Maximum Marks: 70 Date:20.07.2024 Duration: 3 hours

Note: 1.This question paper contains two parts A and B.
2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit which carries 10M.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

	Part-A		
All the following questions carry equal marks (10X2M=20 Marks)		CO	Bloom Tx
1	Define Time Complexity.	1	L1
2	What are the various operations that can be performed on different Data Structures?	1	L1
3	List the basic operations carried out in a linked list?	2	L1
4	Convert the infix expression (a+b)-(c*d) into postfix form?	2	L1
5	Define tree?	3	L1
6	Define Max heap?	3	L1
7	List different types of sorting.	4	L1
8	Define linear search.	4	L1
9	Write the graph terminology?	5	L1
10	What is balanced search tree?	5	L1
	Part-B		
Answer All the following questions. (5X10M=50Marks)			
11	Discuss about various asymptotic notations with examples. [10M]	1	L2
	OR		
12	Differentiate between linear and non-linear data structure. [10M]	1	L2
13	Explain the following operations in a double linked list. [10M] A) Insert an element B) Delete an element	2	L2
	OR		
14	Explain queue operation using array and linked list with an example each. [10M]	2	L2
15	Explain max priority queue ADT. [10M]	3	L2
	OR		
16	Explain tree traversal with an example. [10M]	3	L2
17	Define Hashing and discuss hash tables and functions. [10M]	4	L2

	OR		
18	Explain radix sort with an example {82,901,100,12,150,77,55,23}. [10M]	4	L2
19	Explain about adjacency matrix and adjacency list. [10M]	5	L2
	OR		
20	List and explain the rotations to balance the AVL tree with the following values Insertion:15,20,24,10,13,7,30,36,25 [10M]	5	L2