

Maharashtra Institute of Technology, Aurangabad

(An Autonomous Institute)

END SEMESTER EXAMINATION

Second Year B.Tech (ECE) – Feb/Mar-2023

Course Code :ECE203

Course Name : Data Structure & Algorithm

Duration : 2 Hrs

Max. Marks : 50

Date :

08 FEB 2023

Instructions :

- All questions are compulsory
- Assume suitable data wherever necessary and clearly state it
- Figures to right indicate full marks

Q. 1	Answer any five(Marks:10)	Marks	CO	BL	PI
a)	Draw circular Lined list	2	4	1	2.1.1
b)	What is binary search tree?	2	4	1	2.1.2
c)	What is linked list?	2	1	1	2.1.2
d)	Draw diagram for push operation of stack	2	1	1	2.1.2
e)	Write formula for address calculation of row major	2	2	1	2.1.2
f)	Give classification of data types	2	1	1	2.1.3
g)	What is non primitive data types ? Give example	2	1	1	1.1.1
h)	Draw heap for $a[8] = \{2,80,24,30,12,8,7,2\}$	2	3	2	1.1.1
Q.2	Explain heap sort method by giving suitable example	8	3	2	2.1.3
	OR				2.1.3
Q.2	Explain address calculation by row major method for integer type array	8	2	3	1.2.1
Q.3	Explain Queue and static implementation of Queue with neat diagram	8		3	1.2.1
	OR				
Q.3	Explain stack and dynamic implementation of stack with neat diagram	8	2	3	2.1.3
Q.4	Sort the following array using merge sort method $a[10] = \{27,15,78,45,32,10,8,4,90,6\}$	8	4	3	2.1.3
	OR				
Q.4	Sort following array using insertion sort method $a[6] = \{20,13,2,6,48,15,10\}$	8	4	3	2.1.3
	OR				
Q.5	Explain binary search tree by giving suitable example	8	4	3	2.1.3
	OR				
Q.5	Explain doubly linked list and its implementation with example	8	4	3	2.1.3
Q.6	Explain hashing in detail with necessary diagram OR	8	4	3	2.1.3
Q.6	Explain AVL-tree with neat diagram	8	4	3	2.1.3