



14/12/24
 PRN: **XXXXXXXXXX**

Term End Examination

Nov/Dec 2024

CSE2PM01A/CSF2PM01A/AID2PM01A - Data Structures

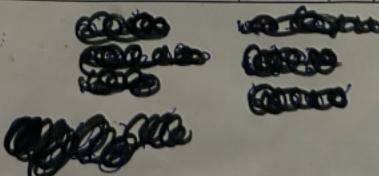
Question Paper ID: 048260

Faculty/School	School of Computer Science and Engineering	Term	Semester III
Program	Second Year CSE/CSF/AIDS	Duration	1 hour 30 minutes
Specialization	-	Max. Marks	40

Section - 1 (8 X 5 Marks)

Answer any 8 questions

1	f(n) = n ³ + 10n ² + 6, f(n) = Ω(n ²) for c > 0 and for all values of n, n >= n ₀ , for c = 1, What will be the values of n ₀ ?	5 marks	CO1, CO2, CO3	Understanding
2	Write the pseudo C code for Polynomial Evaluation and represent the following polynomial using sequential organization: a. 8 y ⁴ X ² +5xy+7y ² -8y-x+10 b. -8x ³ y ³ z ³ + 10x ³ y ² z + 5xyz ² + 15yz ² + 54x ³ z ² + 10	5 marks	CO1, CO3	Understanding
3	Explain the difference between recursion and iteration with examples. Also, list the applications of a stack.	5 marks	CO1, CO3	Understanding
4	Write a C function for inserting an integer value in Circular Linked List .	5 marks	CO1, CO3	Understanding
5	Write a psuedo C code to sort singly linked list using swap by pointers.	5 marks	CO1, CO3	Understanding
6	Write a node structure for Generalized Linked List. Represent the following list using Generalized Linked List. (a, b, (c, d, (e, f, g), h, i))	5 marks	CO1, CO3	Understanding



975

7	<p>For the following binary tree, show (draw) threaded binary tree (inorder).</p> <pre> graph TD 100((100)) --- 40((40)) 100 --- 120((120)) 40 --- 60((60)) 40 --- 50((50)) 60 --- 70((70)) </pre>	5 marks	CO3, CO4	Understanding
8	<p>Build max heap for the following data. 60,80,35,75,43,32,78,15,55,68. Show the steps for deletion of element 75. Show the final max heap.</p>	5 marks	CO3, CO4	Applying
9	<p>Enlist the difference between a general tree & binary tree. Convert the given general tree to binary tree and write down the steps required for the same.</p> <pre> graph TD A((A)) --- B((B)) A --- C((C)) A --- D((D)) B --- E((E)) F((F)) --- G((G)) F --- H((H)) F --- J((J)) </pre>	5 marks	CO3, CO4	Understanding
10	<p>Write pseudo C code for deleting a node in BST considering the case of a node which has two children.</p>	5 marks	CO3, CO4	Understanding

END OF QUESTION PAPER



22/05/25

PRN:

Term End Examination

May/June 2025

CSE2PM01A/CSF2PM01A/AID2PM01A - Data Structures

Question Paper ID: 056219

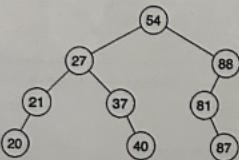
Faculty/School	School of Computer Science and Engineering	Term	Semester III
Program	SY B.Tech CSE/CSF/AIDS	Duration	1 hour 30 minutes
Specialization	-	Max. Marks	40

Section - 1 (8 X 5 Marks)**Answer any 8 questions**

1	Define and explain the following terms: i) Linear data structure ii) Non-linear data structure iii) Time complexity iv) Data Structures v) Data object	5 marks	CO1, Remembering CO2, CO3
2	For the given matrix, find the compact matrix and Transpose matrix using Fast Transpose algorithm and also write the contents of S[] and T[] array. 	5 marks	CO1, Understanding CO3
3	Briefly explain Double-Ended Queue (Deque). Also, list the applications of Queue.	5 marks	CO1, Understanding CO3
4	Assume a singly linked list where each node contains student details like name, rollno and percentage of marks. Write a 'C' function COUNT () to traverse the linked list and count how many students have obtained more than 60% marks.	5 marks	CO1, Applying CO3
5	Write a node structure of Doubly linked list. Enlist the advantages and disadvantages of Doubly Linked List over Singly Linked List.	5 marks	CO1, Understanding CO3
6	Write a node structure for Generalized Linked List. Represent the following list using Generalized Linked List. (x, (y, z), (a, (b, c)), d)	5 marks	CO1, Understanding CO3
7	Write a node structures of general tree, binary search tree and threaded binary tree. Explain each of them.	5 marks	CO3, Understanding CO4

350

8	Write a pseudo C code to implement non-recursive inorder traversal of binary tree.	5 marks	CO3, CO4	Understanding
9	Create Min heap for Data 25, 12, 27, 30, 5, 10, 17, 29, 40, 3.	5 marks	CO3, CO4	Applying
10	Given the following tree find the following properties for same 1) Ancestors of left most node at level 4 2) Descendant of right most level of 3 3) The height of tree 4) Degree of tree 5) List all the leaf nodes	5 marks	CO3, CO4	Understanding



END OF QUESTION PAPER