



# ADAMAS UNIVERSITY

## END SEMESTER EXAMINATION

(Academic Session: 2020 – 21)

<b>Name of the Program:</b>	B.Sc.	<b>Semester:</b>	II
<b>Paper Title:</b>	Data Structure	<b>Paper Code:</b>	CSE11305
<b>Maximum Marks:</b>	50	<b>Time Duration:</b>	3 Hrs
<b>Total No. of Questions:</b>	17	<b>Total No of Pages:</b>	2
(Any other information for the student may be mentioned here)	<ol style="list-style-type: none"> <li>At top sheet, clearly mention Name, Univ. Roll No., Enrolment No., Paper Name &amp; Code, Date of Exam.</li> <li>All parts of a Question should be answered consecutively. Each Answer should start from a fresh page.</li> <li>Assumptions made if any, should be stated clearly at the beginning of your answer.</li> </ol>		

Group A			
Answer All the Questions (5 x 1 = 5)			
1	Define Data Structure.	U	CO1
2	Give examples of Linear Data Structure.	U	CO2
3	Give examples of Non Linear Data Structure	R	CO3
4	State the difference between Data Structure and Database.	Ap	CO4
5	State the difference between constant and variable in C language.	An	CO5
Group B			
Answer All the Questions (5 x 2 = 10)			
6 a)	i) Define Pre-processor Directive in C language. ii) Give examples of Pre-processor Directive in C language	Ap	CO1
(OR)			
6 b)	i) State the difference between array and pointer. ii) State the similarity between array and pointer.	R	CO1
7 a)	Define Abstract Data Type (ADT).	U	CO2
(OR)			
7 b)	Define Structure Array in C language.	R	CO2
8 a)	Define Structure Pointer in C language.	R	CO3
(OR)			
8 b)	Mention the operations that are possible over integer array.	An	CO3
9 a)	Define Linear Search Algorithm	U	CO4
(OR)			
9 b)	Define Binary Search Algorithm	U	CO4
10 a)	Define Last In First Out Algorithm.	R	CO5
(OR)			
10 b)	Define First In First Out Algorithm.	R	CO5
Group C			
Answer All the Questions (7 x 5 = 35)			
11 a)	i) Write a C program to implement Linear Search Algorithm using integer array. ii) State the drawback of Linear Search Algorithm.	An	CO1
(OR)			

11 b)	i) Write a C program to implement Binary Search Algorithm using integer array ii) State the advantage of Binary Search Algorithm.	<b>An</b>	<b>CO1</b>
12 a)	Define Circular Queue.	<b>U</b>	<b>CO2</b>
<b>(OR)</b>			
12 b)	State the difference between Queue and Circular Queue.	<b>An</b>	<b>CO2</b>
13 a)	Write a C program to implement Circular Queue using integer array.	<b>An</b>	<b>CO3</b>
<b>(OR)</b>			
13 b)	Write a C program to implement Linked List using integer pointer.	<b>An</b>	<b>CO3</b>
14 a)	Write a C program to implement Bubble Sort Algorithm over integer array	<b>An</b>	<b>CO4</b>
<b>(OR)</b>			
14 b)	Explain Dynamic Memory Allocation with suitable example.	<b>U</b>	<b>CO4</b>
15 a)	Explain the feature of <i>sizeof</i> operator	<b>U</b>	<b>CO4</b>
<b>(OR)</b>			
15 b)	Explain the feature of <i>fflush(stdin)</i>	<b>R</b>	<b>CO4</b>
16 a)	Explain the feature of <i>fflush(stdout)</i>	<b>R</b>	<b>CO5</b>
<b>(OR)</b>			
16 b)	State the difference between 0 (i.e. Zero) and NULL	<b>Ap</b>	<b>CO5</b>
17 a)	Explain Root node in tree data structure.	<b>Ap</b>	<b>CO5</b>
<b>(OR)</b>			
17 b)	Explain Leaf node in tree data structure.	<b>U</b>	<b>CO5</b>

Note: The Sample prepared by assuming 5 COs in a course, considering one CO for one Module.

- i) If the COs are higher in numbers that can be managed by equating sub-divisional questions
- ii) If the COs are lower in numbers, the questions can be increased by equating the number of COs