

Scheme Of Evaluation
Internal Assessment Test 1 – April 2019

Sub:	Data Structures using C++						Code:	18MCA22	
Date:	15-04-19	Duration:	90mins	Max Marks:	50	Sem:	II	Branch:	MCA

Note: Answer Any One FULL Question from each part.

Question		Description	Marks Distribution		Max Marks
1	a)	What is Data Structure? Explain the classification of Data Structures with an example. Give any four applications of Data Structures. <ul style="list-style-type: none"> • Data Structure Definition • Classification Data Structures • Examples • Applications 	2 M 3 M 3M 2M	10 M	10 M
2	a)	What is abstract data type give an example? Describes Stack ADT and write the algorithms. <ul style="list-style-type: none"> • ADT Definition • Stack ADT • Algorithms with example 	2 M 3 M 5 M	10 M	10 M
3	a)	What is an array? Write an algorithm to Insert and Delete an element from an array <ul style="list-style-type: none"> • Definition • Algorithm Insert • Algorithm Delete 	2 M 4 M 4 M	10 M	10 M
4	a)	Describe Quicksort algorithm and sort the following set of items showing the items at each stage 65,70,75,80,85,60,55,50,45 <ul style="list-style-type: none"> • Quick Sort Description • Example • Algorithm 	2 M 4 M 4M	10 M	10 M

5	a)	<p>Explain the algorithm to convert infix expression to postfix expression? Illustrate with the example. $A+(B*C-(D/E-F)*G)*H$</p> <ul style="list-style-type: none"> • Explanation • Example Tracing • Algorithm 	2 M 4 M 4 M	10 M	10 M
6	a)	<p>Write an algorithm to evaluation of a postfix expression . Explain with an example.</p> <ul style="list-style-type: none"> • Explanation • Example Tracing • Algorithm 	2 M 4 M 4 M	10 M	10 M
7	a)	<p>What is recursion? Explain the process of recursion</p> <ul style="list-style-type: none"> • Definition • Process 	2 M 2 M	4 M	10 M
	b)	<p>Write a recursive algorithm to find the nth term if Fibonacci series. Give the recursion tree</p> <ul style="list-style-type: none"> • Explanation • Algorithm • Recursion Tree 	2 M 2 M 2M	6 M	
8	a)	<p>Write an algorithm to convert Prefix expression to Postfix expression? Illustrate with an example..</p> <ul style="list-style-type: none"> • Explanation • Algorithm • Example Tracing 	2 M 4 M 4M	10 M	10 M
9	a)	<p>Write an algorithm for selection sort. Explain with an example</p> <ul style="list-style-type: none"> • Explanation • Algorithm • Example Tracing 	1 M 2M 2M	5 M	10 M
	b)	<p>Write a recursive algorithm to find the GCD of two numbers.</p> <ul style="list-style-type: none"> • Explanation • Algorithm • Example Tracing 	1 M 2M 2M	5 M	

10	a)	Write an algorithm to search an item in a given list using binary search . Illustrate with an example <ul style="list-style-type: none"> • Explanation • Algorithm • Example Tracing 	1 M 2M 2M	5 M	10 M
	b)	Write an algorithm for Bubble sort. Explain with an example Definition <ul style="list-style-type: none"> • Explanation • Algorithm • Example Tracing 	1 M 2M 2M	5 M	