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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD MCA I Semester Examinations, January - 2020 **COMPUTER PROGRAMMING AND DATA STRUCTURES**

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Note: This question paper contains two parts A and B. Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A

1.a)	What are the different data types available in 'C'?	[5]
b)	Differentiate Break and Continue statement. Give examples.	[5]
c)	What is dynamic memory allocation? What are the various dynamic memory a	llocation
	functions?	[5]
d)	Compare arrays and structures.	[5]
e)	What are the applications of stack?	[5]
	PAPT - R	
$5 \times 10 \text{ Marks} = 50$		
2.a)	What are the components of the computer systems?	
b)	What is Flowchart? What is the need of Flowchart symbols?	[5+5]
3.a)	What are Operators? Mention their types in C.	
b)	What do you mean by conditional or ternary operator? Explain.	[5+5]
4.	List out the Conditional and Control statements in C and explain with examples. OR	[10]
5.a)	What is Recursion? List out merits and demerits.	
b)	Explain the following:	
	i) Actual and formal arguments ii) Global and local variables	[5+5]
6.	How arrays are passed to function? Explain with example.	[10]
	OR	[-•]
7.	Write a C program to multiply two matrices using functions.	[10]
8.a)	Define self-referential structure with example.	
b)	What is an array of structure and give example.	[5+5]
,	OR	
9.	Explain about copying and comparing structure variables with example program.	[10]
10.	Explain the operations and the implementation of Stack using Linked list.	[10]
	OR	
11.	Sort the following elements using selection sort: 45, 8, 69, 75, 14, 138, 92, 53, 13,	158. [10]

Code No: 861AC

Time: 3hrs

Max.Marks:75

R19

[5]

 5×5 Marks = 25