Printing Page(s) : 1 **Paper Code :DCS-104**

Roll No.

DCA-4, ADCA-4, BCA-3

1st Year Examination, Academic Batch 2017-18

Data Structure Through C

Time : 3 Hours] *[Max. Marks : 100*

***Note**. Attempt any **five** questions. Each questions carry equal marks.*

Q. 1. Write short notes on following:
(a) Structured programming
(b) Modular programming

Q. 2. What do you understand by "Data Structure"? Describe the various operations that can be performed on different data structures .

Q. 3. Explain the pointer and structure in C with syntax and example.

Q. 4. What is stack? Describe all the operations which are performed on stack with example.

Q5-a) Consider the linear arrays AAA (5:50), BBB (-5:10) and CCC (18).
(i) Find the number of elements in each array
(ii) Suppose Base (AAA) = 300 and w=4 words per memory cell for AAA. Find the address of AAA [15], AAA [35] and AAA [55]
b) Define the term 2 d-array . How will you initialize an array? Explain.

Q. 6. For a binary tree T, the pre-order and in-order travel sequences are as given below:
Pre-order : A, B, C, D, E, F, G, H, I
In-order : D, C, B, A, G, F, H, I, E
Construct the binary tree T and find its post-order traversal sequence?

Q7- Translate infix expression into its equivalent post fix expression:
i) (A-B)*(D/E)
ii) (A+B^D)/(EF)+
iii) A*(B+D)/E-F*(G+H/K)
iv) (A+(B-C))/(E*f-(g+h))

Q8- a) What is a string? What operations can be performed out with the help of a string?
b) Write an algorithm to sort the elements of linked list.