Code No: 151AC
JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech I Year I Semester Examinations, May/June - 2019
PROGRAMMING FOR PROBLEM SOLVING
(Common to CE, ME, ECE, EIE, MCT, MMT, AE, MIE, PTM)

Time: 3 hours   **Max. Marks: 75**

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

(25 Marks)

1.a)	Give a brief note on storage class.	[2]
b)	Give a note on unions.	[2]
c)	How can we determine whether a file is successfully opened or not using fopen() function?	[2]
d)	Give syntax to create a pointer to function.	[2]
e)	How binary search works?	[2]
f)	What is a flowchart? How it is different from an algorithm?	[3]
g)	Write the advantages and disadvantages of using pointers.	[3]
h)	Write a 'C' program to read a binary file and print it on console	[3]
i)	Write short notes on dynamic memory allocation.	[3]
j)	How linear search is different from binary search?	[3]

PART - B

(50 Marks)

2.a) Explain typical steps for entering, compiling and executing 'C' programs.
  b) Write an algorithm to find the roots of a quadratic equation considering all cases. [5+5]
OR
3.a) Distinguish between all loop statements along with a flowchart and with an example program.
  b) Write a program in 'C' to check whether a given integer number is odd or even.   [5+5]

4.a) Give a brief note on Enumeration data type.
  b) Write a 'C' program to find the biggest number and smallest number of given 'n' numbers using arrays.   [5+5]
OR
5.a) Why structures are necessary? Explain Nested Structures with a valid example.
  b) Give a detailed note on pointer expressions.   [5+5]

6.a) Explain Steps for file operations and different modes of files.
  b) Explain about preprocessor commands define, undef.   [5+5]
OR
7. Write a program to read a text file, convert all the lowercase characters into upper case and re-write the uppercase characters in the file.   [10]

8.   What is Recursion? Write a 'C' Program for Towers of Hanoi. Also specify in diagram
        for it.   [10]

                                                OR

9.a)   How to pass the structure to functions as an argument? Explain with a suitable example.
  b)   Explain about Allocating memory for arrays of different data types.   [5+5]

10.a)   Give a brief note on insertion sort with an example.
   b)   Discuss the time complexity of the bubble sort.   [5+5]

                                                OR

11.   Write a program in 'C' to print list of integers in ascending order using bubble sort and
        selection sort techniques.   [10]

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