

Code No: 181AE

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech I Year I Semester Examinations, September - 2023

C PROGRAMMING AND DATA STRUCTURES

(Common to CE, EEE, ME, AE, BT, PCE)

Time: 3 Hours

Max. Marks: 60

Note: This question paper contains two parts A and B.i) **Part - A** for 10 marks, ii) **Part - B** for 50 marks.

- Part-A is a compulsory question which consists of ten sub-questions from all units carrying equal marks.
- Part-B consists of **ten questions** (numbered from 2 to 11) **carrying 10 marks each**. From each unit, there are two questions and the student should answer one of them. Hence, the student should answer five questions from Part-B.

PART - A**(10 Marks)**

- What is an identifier? [1]
- What is a statement in c? [1]
- Write a C program to find greatest of two numbers. [1]
- When do you use "continue" statement? [1]
- How do you create a "pointer to pointer" in C? [1]
- How do you pass an array to a function? [1]
- What is the significance of typedef? [1]
- List the standard library functions for files. [1]
- Give array representation of stack. [1]
- What is the time complexity of linear search method? [1]

PART - B**(50 Marks)**

- Write about precedence and associativity of operators.
- Write a c program to convert an integer to float. [5+5]

OR

- Which basic data types are supported by c? What are their size in terms of bytes? How are they declared? Explain with examples. [10]

- Write a program to print below sequence:

```

1
2 3
4 5 6
7 8 9 10

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- Write a recursive function to find factorial of given number. [5+5]

OR

- Write a C program to perform an arithmetic operation using switch statement.(read the operator and operands from console) [10]

- 6.a) Write a program to find whether a given string is palindrome or not.
b) What is array of pointers? In which situations is it useful? [5+5]

OR

- 7.a) Write a program to sort the characters in given string alphabetically.
b) What are the applications of pointer? [5+5]

8. Write a program to copy the contents of one file to another file. [10]

OR

9. What is the difference between structure and union? Illustrate with example. [10]

- 10.a) What are the application of stacks?
b) Write a C program for binary search. [5+5]

OR

- 11.a) Simulate insertion sort on following data:

4,5,3,2,7,8,9,11

- b) What is a queue? Give linked representation of a queue. What operations can be performed on queue. [5+5]

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PAPERS-2023