

Code No: 181AE

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech I Year I Semester Examinations, March/April - 2023

C PROGRAMMING AND DATA STRUCTURES

(Common to CE, ME, AE, BT, MIE, 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)**

- 1.a) What is the range of values a float data type takes? [1]
- b) How many bytes does unsigned int take? [1]
- c) What are actual parameters? [1]
- d) Why do we use continue statement? [1]
- e) Which symbol is used to access the value a pointer is pointing to? [1]
- f) List string input functions. [1]
- g) Give syntax for defining a structure. [1]
- h) What is the advantage and disadvantage of union? [1]
- i) What is queue? [1]
- j) What is the advantage of singly linked list? [1]

**PART-B****(50 Marks)**

- 2.a) What are input and output statements in C?
- b) List and explain arithmetic operators in C. [5+5]

**OR**

3. For primitive data types in C, give format specifier, range of values and memory it takes. [10]
4. Write a program to find whether a given matrix is symmetric or not. [10]

**OR**

- 5.a) Distinguish between while and do-while statements.
- b) Write a C program which uses a recursive function to find fibonacci series of given number. [5+5]

6. List and explain string manipulation functions. [10]

**OR**

7.a) What is pointer to pointer? In which situations do we need them?

b) What are dangling pointers? Why do they occur? [5+5]

8. Write a program to merge the contents of file A and file B into file C. File A has even numbers between 1 to 20 and file B has odd numbers between 1 to 20. [10]

**OR**

9. Create a union called "student" having student name, roll number, branch and marks for three subjects. Write a program to compute grade of the student based on three marks. [10]

10. Simulate bubble sort on following data and write a C program for it. [10]

3,6,8,9,1,2,22,11,5

**OR**

11. What are stacks? What operations can be performed on stack? What are the applications of stack? [10]

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Used papers 2023