

R18

Code No: 151AC

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

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

PROGRAMMING FOR PROBLEM SOLVING

(Common to CE, ME, ECE, EIE, MCT, MMT, ECM, AE, MIE, PTM, CSBS, CSE(AI&ML),
CSE(IOT), AI&DS, AI&ML)

Time: 3 Hours

Max. Marks: 75

Note: i) Question paper consists of Part A, Part B.

ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.

iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART - A

(25 Marks)

- 1.a) Draw a flow chart to find whether a given number is even or odd. [2]
- b) What are the operator precedence rules? [3]
- c) How do you create a Pointer to Structure? [2]
- d) What are Self-Referential structures? [3]
- e) What is the purpose of undef directive? [2]
- f) Distinguish between Text and Binary files. [3]
- g) Explain about "void" return type. [2]
- h) What are the limitations of Recursive functions? [3]
- i) Write Linear Search logic. [2]
- j) Write an algorithm to find sum of two given numbers. [3]

PART - B

(50 Marks)

- 2.a) Explain the purpose of stdin, stdout and stderr in C with examples?
- b) Write a C program to print the following pattern? [3+7]

```
      1
     2 2
    3 3 3
   4 4 4 4
  5 5 5 5 5
```

OR

- 3.a) Write a C program to print Fibonacci series.
- b) What is Ternary Operator? Write the syntax for Switch – Case? [6+4]
- 4.a) Write a C program to multiply two Matrices and store the result in third Matrix.
- b) How do you create Arrays of Structures? Explain with example. [5+5]

OR

- 5.a) Write a program to find reverse of a given String.
- b) Explain about Enumeration data type. [5+5]

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- 6.a) Write a C program to count number of characters in a given text file.
b) How do you append data to an existing Text File? [5+5]

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- 7.a) **OR**
What are Preprocessing Commands? Distinguish between `ifdef` and `ifndef` Preprocessor Commands.
b) Explain about `fseek()` and `ftell()` functions with examples. Write various modes for opening a Binary file in C? [5+5]

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- 8.a) Write a program to swap two numbers using Call by Value Parameter Passing Technique.
b) Explain how the memory for arrays can be allocated using dynamic memory allocation methods? [5+5]

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OR

- 9.a) Write a C Program to find the sum of the squares of first N natural Numbers using recursion?
b) How do you pass pointers to a function? Explain with suitable examples? [6+4]

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- 10.a) Write an algorithm for Bubble sort? Sort the give Input Data using it: 55, 96, 61, 99, 14, 87, 112, 135, 567, 16.
b) Compute time complexity of Bubble Sort algorithm. [7+3]

OR

- 11.a) Write an algorithm to find minimum and maximum numbers of a given Set.
b) Write major principle of Insertion sort? Derive the time complexity of it. [6+4]

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QA QA QA QA QA QA QA G

QA QA QA QA QA QA QA G

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