

R18

Code No: 152AF

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech I Year II Semester Examinations, February - 2025

PROGRAMMING FOR PROBLEM SOLVING

(Common to EEE, CSE, IT, CSIT, ITE, CE (SE), CSE (CS), CSE (DS))

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) What is variable declaration and variable definition? [2]
- b) What are the steps in compilation process of a C program? [3]
- c) Define union. How is it different from a structure? [2]
- d) What are the applications of pointers? [3]
- e) What is a binary file and a Text file? [2]
- f) How do you append data to an existing file? [3]
- g) What do you mean by signature of a function? [2]
- h) What is a recursive function? Provide an example. [3]
- i) What is an algorithm? [2]
- j) What is the basic idea of bubble sort? [3]

PART - B

(50 Marks)

- 2.a) Distinguish between object code and executable code.
- b) With a clear syntax and example, explain various conditional statements in C. [3+7]

OR

- 3.a) Which type conversions are supported by C? Give example for each.
- b) List and explain various storage classes available in C. [5+5]
4. List and explain basic string functions available in C with examples. [10]

OR

- 5.a) How to declare an array and access elements from an array in C? Demonstrate.
- b) Demonstrate with a C program multiplication of two 2D arrays. [5+5]

6.a) List and explain the following preprocessor directives.
define, ifdef and ifndef

b) Write the purpose of fopen() and fread() functions. [4+6]

OR
7.a) Write a C program to count no. of lines in a given file.

b) Explain fopen() function along with its all file opening modes. [5+5]

8. Explain the functions to dynamically allocate and deallocate memory. [10]

OR

9.a) Write a recursive and non-recursive a functions to find factorial of a given number.

b) What is call by value? Give an example. [8+2]

10.a) Write an algorithm to find minimum and maximum number of given set and explain the procedure in brief.

b) How does linear search differs from binary search? [5+5]

OR

11.a) Write an algorithm to sort an array of elements using insertion sort and trace the algorithm at each phase with an example.

b) Write down the advantages of binary search. [5+5]

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