

R22

Code No: 181AP

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech I Year I Semester Examinations, January/February - 2025

PROGRAMMING FOR PROBLEM SOLVING

(Common to CSE(AI&ML), CSE(IOT), AI&DS, AI&ML, CSE(IOT&CYS))

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)

- Distinguish between an algorithm and a flowchart. [1]
- What is the significance of Increment and Decrement Operators? Give an example. [1]
- What is meant by call-by value and call-by reference? [1]
- What is array of strings? [1]
- What is the use of preprocessor directive? [1]
- What are the sequential file handling functions? [1]
- What are actual parameters and formal parameters of a function? [1]
- Where the storage class variables are stored? [1]
- Compare the bubble, insertion and selection sort techniques. [1]
- Mention the complexity of linear and binary search algorithms. [1]

PART - B

(50 Marks)

- Discuss in detail about various operators used in C and its precedence with an example.
 - Draw a flowchart to find the max of three numbers and explain. [5+5]
- OR**
- Discuss the various Conditional Branching Statements used in C with its syntax and flow diagram.
 - Develop a C Program to find the power of a Number using the while loop and using pow () function. [5+5]
- Explain with example (i) Character string (ii) String literal (iii) storage classes.
 - Write a C program to find the largest element given in an array of elements. [5+5]
- OR**
- How to copy and compare structure variables? Illustrate with example.
 - Write a C program to read the elements in an array and print the same in reverse order. [5+5]

QA QA QA QA QA QA QA G

- 6.a) Explain any five preprocessor directives in C.
- b) What is a macro? Write a macro to determine whether the given number is odd or even. [5+5]

QA QA QA **OR** QA QA QA QA G

- 7.a) Write the syntax for opening a file with various modes and closing a file.
- b) Write a C program to copy the contents from one file to another file. [5+5]

- 8.a) What is recursion? What are the advantages and disadvantages of recursion?
- b) Explain recursion and write a program to find n^{th} term of Fibonacci series. [5+5]

QA QA QA **OR** QA QA QA QA G

- 9.a) Describe about the register and static storage classes with example program.
- b) Write the C coding for finding the average of number using any of the storage class declarations. [5+5]

- 10.a) Explain the methodology of Binary search algorithm. Discuss about its complexity.
- b) Write a C program for [consider integer data] sorting the given list of elements using Bubble sort. [5+5]

QA QA QA **OR** QA QA QA QA G

- 11.a) Write a C program to read N numbers into an array and perform Linear search.
- b) Describe the algorithm for finding minimum and maximum numbers of a given set. [5+5]

---ooOoo---

QA QA QA QA QA QA QA G

QA QA QA QA QA QA QA G

QA QA QA QA QA QA QA G

QA QA QA QA QA QA QA G