

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, IT, CSIT, CE(SE), CSE(CS), CSE(DS), CSD)

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) Write the syntax of switch-case in C. [1]
- b) What are syntax and logical errors? [1]
- c) When to use enumerated datatype? [1]
- d) What is dereference operator in pointers? [1]
- e) What is the difference between Random access file and Sequential access file? [1]
- f) Write an example for binary file? [1]
- g) What is the return type of a function in C? [1]
- h) What is Call by value? [1]
- i) How many comparisons are required to search for a key in an array of n elements using binary search technique? [1]
- j) Write the time complexity of selection sort. [1]

PART - B

(50 Marks)

- 2.a) Write about various storage classes in C.
- b) Write a C program that implements a program to check if a given number is a palindrome using loops. [4+6]

OR

- 3.a) Write about various bit-wise operators in C.
- b) Write a C program that calculates and prints the sum of cubes of odd numbers from 10 to 30 using a for loop. [4+6]

- 4.a) How to create pointers to the structures? Explain using example.
- b) Write a C program to reverse a given array elements. [5+5]

OR

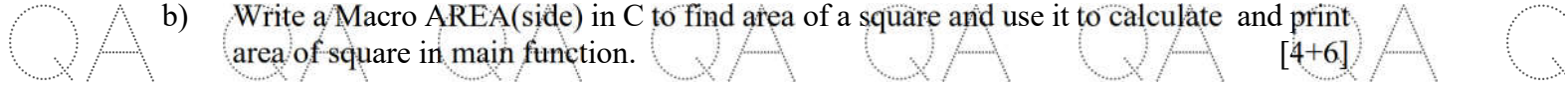
- 5.a) What is Union? How to create it in C? How is it different from structure?
- b) Write a C program to compare two given strings. [4+6]



- 6.a) How to utilize rewind() and ftell() functions in C?
b) Write a C program to find number of lines in a given file. [4+6]

OR

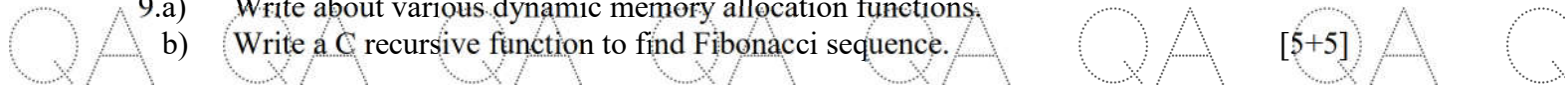
- 7.a) Write about preprocessor directives #if, #else and #elif.
b) Write a Macro AREA(side) in C to find area of a square and use it to calculate and print area of square in main function. [4+6]



- 8.a) How to pass arrays to functions in C? Explain with an example.
b) Write a C function to find product of all the array elements. Call this function in main by passing array as an argument to this function. [5+5]

OR

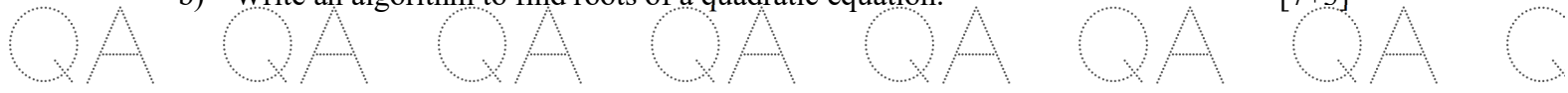
- 9.a) Write about various dynamic memory allocation functions.
b) Write a C recursive function to find Fibonacci sequence. [5+5]



- 10.a) Explain linear search algorithm with an example.
b) Write an algorithm to find biggest of three numbers. [6+4]

OR

- 11.a) Apply Bubble sort technique to sort the data: 34,12,23,56,45,89,67,59,4, 2.
b) Write an algorithm to find roots of a quadratic equation. [7+3]



---ooOoo---

