

**R16**

**Code No: 131AD**

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**

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

**COMPUTER PROGRAMMING IN C**

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

**Time: 3 Hours**

**Max. Marks: 75**

**Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub-questions.

**PART- A**

**(25 Marks)**

- 1.a) Differentiate between Algorithm and Flowchart. [2]
- b) What are the commonly used input functions in C? How are they accessed? [3]
- c) List down array applications. [2]
- d) What is recursive function? What are the limitations of recursion? Explain. [3]
- e) How strings are represented in C? Explain. [2]
- f) What is a pointer variable? Explain the applications of pointers. [3]
- g) Explain about enumerated data types with examples. [2]
- h) What are self-referential structures? Explain. [3]
- i) Distinguish between fseek and ftell commands. [2]
- j) Differentiate between text and binary files. [3]

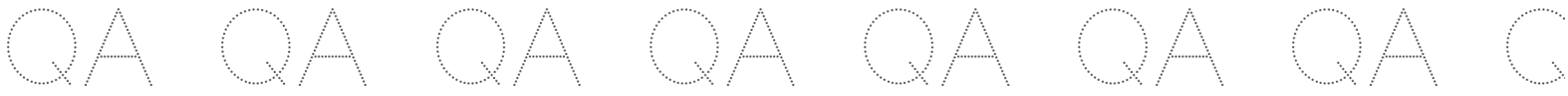
**PART-B**

**(50 Marks)**

- 2.a) Explain the steps involved in the development of C algorithms.
  - b) What are operators in C? Explain with example.
  - c) Explain different primary data types used in C language. [4+3+3]
- OR**
- 3.a) Explain the conversion of Decimal number to Hexadecimal number with an example.
  - b) List the rules required to form variable names in C. Differentiate between declaration and definition of a variable.
  - c) Write a program showing the use of if else and switch statements in C. [4+3+3]
- 4.a) What is a library function? List out different mathematical library functions available in C programming and mention their functions and uses.
  - b) Write a recursive function to print Fibonacci sequence.
  - c) What are the applications of Arrays? Explain. [3+4+3]

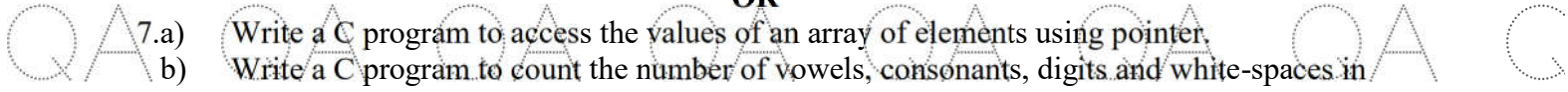
**OR**

- 5.a) Explain the concept of declaring, accessing and storing elements in a 1-dimensional array.
- b) Write a program to sort the elements by using bubble sort. [5+5]



- 6.a) Write a C program to compare two strings for equality without using strcmp( ) function.
- b) Write a C program to copy input to output, replacing each string of one or more blanks by a single blank. [5+5]

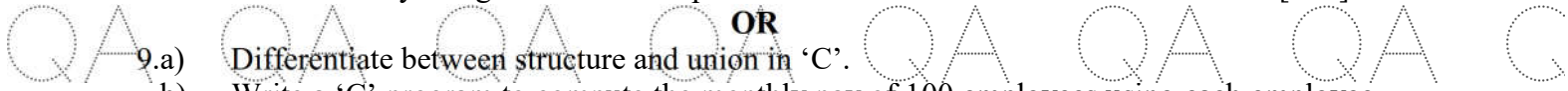
**OR**



- 7.a) Write a C program to access the values of an array of elements using pointer.
- b) Write a C program to count the number of vowels, consonants, digits and white-spaces in a string which is entered by the user. [5+5]

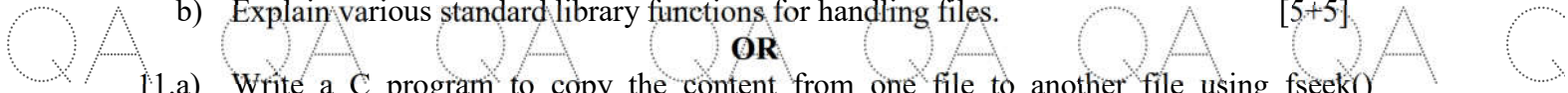
- 8.a) With suitable example in 'C', Illustrate and explain the process of declaring union.
- b) Write a program to calculate grade, average marks and total marks in a class of 60 students by using structure concept. [5+5]

**OR**



- 9.a) Differentiate between structure and union in 'C'.
- b) Write a 'C' program to compute the monthly pay of 100 employees using each employee name and basic pay. The DA is computed as 2.5% of the basic pay, Gross salary (Basic pay + DA). Display the employees name and gross salary. [5+5]

- 10.a) Write a 'C' program to count the number of characters in a file.
- b) Explain various standard library functions for handling files. [5+5]



**OR**

- 11.a) Write a C program to copy the content from one file to another file using fseek() function.
- b) Explain about various file status/error handling functions in 'C'. [5+5]

