

R18

Code No: 152AF

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY, HYDERABAD

B.Tech I Year II Semester Examinations, May - 2019

PROGRAMMING FOR PROBLEM SOLVING

(Common to EEE, CSE, IT)

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) Name any two secondary storage devices and mention their characteristics. [2]
- b) Why is it necessary to give the size of an array in an array declaration? [2]
- c) Define the terms: Binary file and text file. [2]
- d) How does a recursive function differ from an iterative function? [2]
- e) Differentiate between selection sort and insertion sort. [2]
- f) What is an operating system? List out its goals and functions. [3]
- g) Mention the advantages and disadvantages of arrays. [3]
- h) What is the purpose of feof() function? [3]
- i) Write the syntax and purpose of malloc() function. [3]
- j) Write an algorithm to find the maximum number in a given set. [3]

PART-B

(50 Marks)

- 2.a) What is precedence and associativity in an expression? What is their need? [10]
 - b) Write down the significance of break statement inside a switch statement.
 - c) Discuss the concept of type conversion in C. [10]
- OR**
- 3.a) What are command-line arguments? Explain briefly.
 - b) List and explain various storage classes available in C and state the reason why register storage classes are less frequently used. [5+5]
- 4.a) What is a multidimensional array? Explain how a multidimensional array is defined in terms of a pointer to a collection of contiguous arrays of lower dimensionality. [10]
 - b) Differentiate between structure and union in C.
 - c) Write down the applications of using arrays. [10]
- OR**
- 5.a) Write and explain the general format for declaring and accessing members of a structure.
 - b) How to use pointers as arguments in a function? Explain with a program. [5+5]

6. List and explain various file read/write functions available in C with examples illustrating their usage and implementation. [10]

OR

7.a) Write the syntax of `fseek()` function in C and explain the same. [5+5]
b) Explain the concept of streams and their significance in I/O operations.

8.a) Explain the call-by-value and call-by-reference parameter passing methods. [5+5]
b) Write a C program to generate Fibonacci series using recursive functions.

OR

9.a) State the need for user-defined functions. [5+5]
b) List and explain the functions used to allocate and free memory dynamically.

10.a) Devise an algorithm for linear search and explain with an illustration. [5+5]
b) Write a C program to determine whether a given number is prime or not.

OR

11.a) Devise an algorithm for selection sort and explain with an illustration. [10]
b) Give a brief note on asymptotic notations.
c) Mention the complexity of linear search and binary search algorithms.

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