Hall Ticket No | | | | | | | | | | | Question Paper Code:ACSC04

INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)
Dundigal-500043, Hyderabad

B.Tech II SEMESTER END EXAMINATIONS (REGULAR) - SEPTEMBER 2022
Regulation:UG20

PROGRAMMING FOR PROBLEM SOLVING USING C

(Common to CSE | CSE(AI&ML) | CSE(CS) | CSE(DS) | CSIT | IT | ECE| EEE)

Time: 3 Hours **Max Marks: 70**

Answer ALL questions in Module I and II
Answer ONE out of two questions in Modules III, IV and V
All Questions Carry Equal Marks
All parts of the question must be answered in one place only

MODULE – I

1. (a) Outline the process of compiling and running a C program. Give the basic structure of C program with example program. [BL: Understand| CO: 1|Marks: 7]

   (b) Develop a C program to find the largest numbers from given 3 numbers using conditional operator only if 3 numbers are positive integers otherwise you can read the next set three values until get the three positive integers. [BL: Apply| CO: 1|Marks: 7]

MODULE – II

2. (a) Write a short note on nested loops. Write the syntax and flow diagram **"for loop"**. Give example. [BL: Understand| CO: 2|Marks: 7]

   (b) A prime number is a finite numerical value that is higher than 1, and that can be divided only by 1 and itself. A few of the prime numbers starting in ascending order are 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, etc. Here, your task to write C function with name "IsPrime". IsPrime function can accept one integer parameter and return 1 if the parameter is prime number otherwise return 0. Note: Due to software crash, the system not accepting any loops (for, while, do-while and Goto). So, complete "IsPrime" function without using any loops. [BL: Apply| CO: 3|Marks: 7]

MODULE – III

3. (a) Discuss different methods of passing arguments to the function with an example. [BL: Apply| CO: 3|Marks: 7]

   (b) A company CEO is very curious on lucky numbers. One day he decided to know the all employees lucky numbers. A lucky number is calculate using date of birth Lucky Number:
   Date of Birth (DDMMYYYY)- 31081988
   Find sum of all digits of given DoB
   Repeat step2 until the DOB turned into single digit
   For example:
   31081988 => 3+1+0+8+1+9+8+8
   38 => 3+8
   11 => 1+1
   2
   Please help the CEO to find the lucky number by developing the C function.

Find_Lucky_Number().

Find_Lucky_Number() function take the string as argument and return the lucky number.

[BL: Apply| CO: 3|Marks: 7]

4. (a) How string is declared and initialized? Explain any four string manipulation functions with examples. [BL: Understand| CO: 3|Marks: 7]

   (b) Write a C program to check whether the given string is palindrome or not without using in-built function [BL: Apply| CO: 3|Marks: 7]

MODULE – IV

5. (a) Differentiate structure and union in specific to memory allocation with suitable example. [BL: Understand| CO: 4|Marks: 7]

   (b) Demonstrate pointers to compute the sum, mean and standard deviation of all elements stored in an array of **n** real numbers using C program. [BL: Apply| CO: 4|Marks: 7]

6. (a) What is an array? Explain the declaration and initialization of one dimensional and two dimensional array with an example [BL: Understand| CO: 4|Marks: 7]

   (b) Read your email id and write a C program to count the number of vowels, consonants, digits and spaces in it. [BL: Apply| CO: 6|Marks: 7]

MODULE – V

7. (a) Explain the following with syntax:
   i) fseek()
   ii) ftell()
   iii) rewind()
   iv) fread()
   v) fopen() [BL: Understand| CO: 5|Marks: 7]

   (b) Develop a C program to perform the given file is available or not and if available read the contents of a file using fgets() function. [BL: Apply| CO: 5|Marks: 7]

8. (a) Desribe all preprocessor directives. Briefly explain any four preprocessor directives. [BL: Understand| CO: 6|Marks: 7]

   (b) Given a number N, the task is to check whether the number is Automorphic number or not. A number is called Automorphic number if and only if its square ends in the same digits as the number itself. Read the N value from command line.

   Example: Input: N=76

   Output=Automorphic

   Explaination: As 76×76=5776

   Input: N=7

   Output=Not Automorphic

   Explaination: As 7*7=49 [BL: Apply| CO: 6|Marks: 7]

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