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F142

ES202

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Enrol. No. .....

END SEMESTER EXAMINATION : DECEMBER, 2023

INTRODUCTION TO COMPUTERS AND PROGRAMMING IN C

Time : 3 Hrs. *Maximum Marks : 60*

Note: ***Attempt questions from all sections as directed. Use of scientific calculator is allowed.***

SECTION – A (24 Marks)

Attempt any **four** *questions out of* **five**. *Each question carries* **06** *marks.*

1. Explain system software and application software. Give 2 examples of each.

2. What do you understand by enumerated data type in C? Write a C Program to create enumerated data type of 12 months and displays their values in integer constants.

3. Differentiate between the following :

   (a) break and continue

P.T.O.

(b) do-while and while loop

(c) switch and if statement

4. (a) Using a switch statement, write a function to count the number of vowels and number of blanks in a character array passed to it as an argument. (4)

(b) What are advantages of using multiple functions in a program? (2)

5. (a) Do you think C language support 'pointer to function'? Explain it by taking an example. (3)

(b) Differentiate between function call by value and call by reference. (3)

SECTION – B (20 Marks)

Attempt any **two** *questions out of* **three**.
Each question carries **10** *marks.*

6. (a) Convert the following : (5)

(i) $(478A.BC)_{16} = ()_{10}$

(ii) $(2678)_{10} = ()_3$

(iii) $(752.13)_8 = ()_{16}$

(iv) $(3424.25)_{10} = ()_2$

(v) $(1213)_4 = ()_8$

(b) Write a program to print all the Krishnamurti number from 1 to n. Here, n is user dependent. A Krishnamurti number is a number whose sum of factorial of individual digits equals the number. For example, $145 = 1! + 4! + 5! = 1 + 24 + 120 = 145$. (5)

7. (a) Write macro definition with arguments for calculation of compound interest and amount. Store these macro definitions in a file called 'Cominterst.h". Include this file in your program and use the macro definition for calculating compound interest and amount. (5)

(b) A positive integer is entered through the keyboard, write a program to find the binary equivalent of this number using recursion. How recursion is different from iteration? (5)

8. (a) In an arithmetic expression, how operator precedence and associativity play an important role to evaluate the expression? Explain with suitable example. (6)

(b) Write a program to accept element of a matrix of size 3×3 and print transpose of it. (4)

SECTION – C (16 Marks)

(Compulsory)

9. (a) Write a C function, which accepts an array of size N containing integer values and returns mean of all the values. Call the function from main program. (4)

(b) Write a program to check whether string is palindrome or not. (4)

(c) Declare a structure which contains the following members Roll No, Name, Father's name, age, city, marks and write a program in C to list students who scored more than 75 marks. (4)

(d) In a class of 30 students, there are three major subjects- Physics, Chemistry and Mathematics. The faculty has evaluated the result and stored in a text file named "Physics.txt", "Chemistry.txt" and "Maths.txt", respectively. Write a C program to publish the result in another text file named "Resulttxt", it will contain the percentage marks obtained be summing the marks of the subjects. (4)