647510 **0305112C2020** **Seat No :_____**

B.C.A Semester - 1 (*CBCS*) Examination

Nov/Dec - 2022 (OLD COURSE)

PROBLEM SOLVING METHODOLOGIES AND PROGRAMMING IN C (CORE)

Time: 2:30 Hours **Marks: 70**

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate marks.

Q.1.

(a) Answer the following **[4]**

1. C has total _____ keywords
2. A double variable occupies _____ bytes in the memory
3. Which datatype is used to store whole numbers?
4. Define variable

(b) Answer any one **[2]**

1. What is constant? Explain with example
2. Which datatype is used to store alphabets? Explain with example.

(c) Answer any one **[3]**

1. List various logic development techniques. Explain any one
2. Differentiate between type casting and type conversion

(d) Answer any one **[5]**

1. List various categories of operators. Explain logical operators
2. What is a flow chart? Explain with example

Q.2

(a) Answer the following **[4]**

1. What is exit controlled loop?
2. _____keyword is used to jump out of the running loop
3. One loop can be embedded into another loop : (True/False)
4. An if clause contains _____ part to execute when condition goes wrong

(b) Answer any one **[2]**

1. Explain if statement with example
2. Explain for loop with example

(c) Answer any one **[3]**

1. Differentiate between entry controlled loop and exit controlled loop
2. Explain with example : if else if ladder

(d) Answer any one **[5]**

1. Demonstrate the use of goto statement with a C program
2. What is ternary operator? Write a program to show its use

Q.3

(a) Answer the following **[4]**

1. What is a library function?
2. _____ file contains all necessary standard input/output functions
3. Give full form : UDF
4. _____ function is used to clear the screen

(b) Answer any one **[2]**

1. What is a header file? Why such files are used in programs?
2. Explain any two mathematical functions with example

(c) Answer any one **[3]**

1. What are memory allocation functions? Explain any one giving example
2. Differentiate between function call by value and function call by reference

(d) Answer any one **[5]**

1. List and explain various C storage classes with example
2. Write a program which shows the use of a UDF with two arguments.

Q.4

(a) Answer the following **[4]**

1. Define string array
2. We can create a new datatype using array : (True/False)
3. What is a Union?
4. Each element in an array can be separated from each other by its _____

(b) Answer any one **[2]**

1. Write in detail : usefulness of array
2. What is the use of structure? Explain with example

(c) Answer any one **[3]**

1. List and explain various types of array
2. Differentiate between structure and union

(d) Answer any one **[5]**

1. Write a program which nests the structure DOB(Date of Birth) within another structure 'Stud'(which records students information like name, roll number etc.). Allow the user to enter 5 records of students. Display all of them properly on screen
2. Write a program which shows how to use a pointer to access the data stored in the above 'Stud' structure

Q.5

(a) Answer the following **[4]**

1. _____function is used to clear the buffer attached to a file stream and send the data to the associated file
2. Define pointer
3. To access a variable containing a whole number, a pointer must be declared of the type _____
4. A data file is stored in RAM : (True/False)

(b) Answer any one **[2]**

1. List and explain different modes in which file can be opened
2. Explain with example : how can we use a pointer to access an array

(c) Answer any one **[3]**

1. Explain giving example : how pointer can be used for the dynamic memory allocation
2. Explain fseek( ) and ftell( ) with example

(d) Answer any one **[5]**

1. Write a program which shows the use of pointer to pointer
2. Write a program to create a file which stores various Item data like item id, item name etc. Read those data back from the file and display them on the screen

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