

B.Sc.(IT) Semester - 1 (CBCS) Examination**Oct/Nov-2023 (Syllabus Year - 2016)****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.
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- Que.1(A) Answer the following questions. (all four) (04)
1. Define constant.
 2. C contains total 36 keywords : (True/False)
 3. Who invented C language?
 4. A character variable occupies _____ bytes in the memory.
- Que.1(B) Answer the following questions. (any one) (02)
1. What is variable? Explain with example.
 2. List various data types in C. explain the types which hold real numbers.
- Que.1(C) Answer the following questions. (any one) (03)
1. What is type casting? Explain giving example.
 2. List and explain various flowchart symbols.
- Que.1(D) Answer the following questions. (any one) (05)
1. Explain in detail : various relational operators.
 2. What is an algorithm? Write an algorithm to print 100 to 1 in reverse (in descending order)
- Que.2(A) Answer the following questions. (all four) (04)
1. One decision structure can't be embedded into another decision structure : (True/False)
 2. _____ is an exit controlled loop.
 3. When the control comes into else part?
 4. Write the syntax of for loop header.
- Que.2(B) Answer the following questions. (any one) (02)
1. What is looping? Explain with example.
 2. Explain go to statement with example.
- Que.2(C) Answer the following questions. (any one) (03)
1. Explain with example : nested loops.
 2. Differentiate between entry controlled loop and exit controlled loop.
- Que.2(D) Answer the following questions. (any one) (05)
1. Write a C program to take 10 numbers from user. Check if any number is a prime number. If so, print it.
 2. Write a C program to take two numbers from user. display the bigger number using ternary operator.
- Que.3(A) Answer the following questions. (all four) (04)
1. _____ function is used to convert a number into a positive number.
 2. _____ file contains all necessary console input/output functions.
 3. Give full form : UDF.
 4. _____ function is used to clear the memory allocated at run time.
- Que.3(B) Answer the following questions. (any one) (02)
1. What is recursion? When it is useful?
 2. What is global variable? Explain with example.
- Que.3(C) Answer the following questions. (any one) (03)
1. Explain with syntax and example : malloc () function.
 2. What is function call by reference? Explain.

- Que.3(D) Answer the following questions. (any one) (05)
1. Write a C program which converts any string into proper case using a UDF.
 2. Write a C program which shows the use of static variable.
- Que.4(A) Answer the following questions. (all four) (04)
1. What is array?
 2. _____ is used to create our own data type in C.
 3. Define union.
 4. Each element in an array is separated from each other by its name : (True/False)
- Que.4(B) Answer the following questions. (any one) (02)
1. Explain the concept of two dimensional array.
 2. Differentiate between : structure and union.
- Que.4(C) Answer the following questions. (any one) (03)
1. What is structure? Explain in detail giving example.
 2. Explain with example : the concept of nested structures.
- Que.4(D) Answer the following questions. (any one) (05)
1. Write a C program to add two matrices using array.
 2. Write a C program which creates a structure 'emp' to store employee data like employee id, employee name, sate of birth etc. generate an array of 10 employees to store and retrieve their data. Print them on the screen.
- Que.5(A) Answer the following questions. (all four) (04)
1. Give full form : EOF
 2. A fraction is always accessed by the pointer of the type _____.
 3. Data are stored permanently on hard disk using structure : (True/False)
 4. If the file could not be created, the file pointer contains_____ value.
- Que.5(B) Answer the following questions. (any one) (02)
1. Explain with example : fopen().
 2. Explain rewind() with example.
- Que.5(C) Answer the following questions. (any one) (03)
1. What is pointer to pointer? Explain with example.
 2. Explain giving example : how to access structure variables using a pointer.
- Que.5(D) Answer the following questions. (any one) (05)
1. Write a C program to create a file which stores salary components like basic salary, DA HRA etc. obtain salaries of 5 employees. Write these data to a data file. Read those data back from the file and display them on the screen.
 2. What are command line arguments? Explain in detail giving example.
