PRANVEER SINGH INSTITUTE OF TECHNOLOGY KANPUR

Odd Semester   Session 2023-24   CT -I

B. Tech.- I. Semester

Programming for Problem Solving (BCS-101)

CO Number	Course Outcome
CO1	To be able to **Define [L1: Knowledge]** basics of computer and C programming concepts, algorithms and draw [L1-Knowledge] flow charts.
CO2	To be able to **Explain [L2: Comprehension]** the C programming constructs such as data types (primitive and non-primitive), operators, conditions and looping, modular programming, pointer, preprocessor directives and file management.
CO3	To be able to **Apply [L3: Application]** the C programming constructs such as data types (primitive and non-primitive), operators, conditions and looping, modular programming, pointer, preprocessor directives and file management.
CO4	To be able to **Analyze [L4: Analysis]** various C programming constructs.

Time: 1.5 Hrs.   M. M. 20

Section A

Q1. Attempt all questions: (1X5 = 5 Marks)

a)   Define and list all C Tokens.   CO1

b)   Differentiate between break and continue statements.   CO4

c)   Differentiate between Entry and Exit controlled loop.   CO4

d)   Identify the output of the following program.   CO1
```
#include<stdio.h>
main()
{   int i, j=1;
    for(i=1;i<3;i++){
      for(j=1;j<4;j++){
        if(j==2) continue;
        printf("%d %d",i, j);
    } }
}
```

e)   Identify the output of the following program.   CO1
```
#include<stdio.h>
main( )
{ switch(!printf("Hi"))
  {
      case 1:
          printf("China");
      case 2:
          printf("India");
      default:
          printf("World Cup");
      case 0:
          printf("T20");
} }
```

Section B

Q2. Attempt all questions: (2.5X4 = 10 Marks)

a i)   Define various Data Types in C with their size, range and format specifiers.   CO1

Or

ii)   List all operators in C with their precedence and associativity.   CO1

b i)   Explain 'switch' case statements with suitable example.   CO2

Or

ii)   Explain Implicit and Explicit type conversion with examples.   CO2

c i)   Develop a C program to print all Prime numbers between a given range.   CO3

Or

ii)   Develop a C program to check whether entered number is Armstrong number or not.   CO3

d i)   Develop a C program to check whether given number is Perfect number or not.   CO3

Or

ii)   Develop a C program to print Fibonacci series up to n terms.   CO3

Section C

Q3 Attempt any one question: (5X1 = 5 Marks)

i)   Develop a C program to read an integer number from user and perform the following tasks
according to user's choice: CO3

1-   To find factorial
2-   To find sum of digits
3-   To print multiplication table
4-   To check even-odd
Other-   Invalid choice

Or

ii) Develop a C program to print the following patterns: CO3
a)   A
B C
C D E
D E F G
E F G H I
b)
*
* * *
* * * * *
* * * * * * *
* * * * * * * * *