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PRANVEER SINGH INSTITUTE OF TECHNOLOGY KANPUR

Even Semester Session 2021-22 CT-I

B. Tech. II Semester (CS-AI/CS-DS/CS-IoT/EC)

Subject: Programming for Problem Solving (KCS-201T)

M. M. 15

Time: 1.5 Hrs.

S.N	Course Outcomes
CO1	Able to **define** [L1-Knowledge] basics of computer and C programming concepts, algorithms and **draw** [L1-Knowledge] flow charts.
CO2	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	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	Able to **analyze** [L4- Analysis] various C programming constructs.

Section A

(1X3 = 3 Marks)

Q1. Attempt all questions:

a) Discuss 'goto' statement. CO2

b) Find the output of following program. CO1

```
main()
  {
     switch(printf("Hello"))
        {
         default: printf("Lets Party");
         case 1: printf("Welcome");
         case 2: printf("Good day");break;
         case 3: printf("Bye Bye"); break;

        }
  }
```

c) Find the output of following program CO1

```
int main()
{
   int x=12, y=7, z;
   z = x!=4 || y == 2;

   while( z )
   {
       printf("Hello");
       z=z-1;
   }
   return 0;
}
```

Section B

(2X4 = 8 Mark

Q2. Attempt all questions:

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

Or

ii) Explain implicit and explicit type conversion with suitable examples.

b i) List all operators in C and compare their precedence and associativity with examples. CO4

Or

ii) Compare break and continue statements with suitable examples. CO4

c i) Develop a C program to find the GCD(Greatest Common Divisor) of two numbers. CO3

Or

ii) Develop a C program to convert a decimal number into binary. CO3

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

Or

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

Section C

(4X1 = 4 Marks)

Q3

i) Illustrate 'switch' statement with its syntax. Develop a C program to input a number N and perform following task according to given user choice:

1. To find factorial
2. To print its Multiplication Table
3. To find sum of its digits.

Or CO3

ii) Illustrate Loops, entry controlled and exit controlled. Develop a C program to print all Prime numbers between a given range. CO3

(E.g Range is 1 to 20 then Prime nos. between 1 to 20 are: 2,3,5,7,11,13,17,19)