



DOON UNIVERSITY, DEHRADUN
Mid Semester Examination, First Semester, 2014
School of Technology
Integrated MCA
Course: STM – 504: Programming Language 'C'

Time Allowed: 2Hours

Maximum Marks: 30

Note: Attempt All Sections A,B,C.

SECTION: A

Short Answer Type Questions/ to be answered in about 50 words. Attempt All Questions.

(Marks:10X1/2=5)

Find errors, if any in the following:

1.

```
int main()
{
}
```
2.

```
#include<stdio.h>
void main(void)
{
    printf("Hello World");
}
```
3.

```
for( ; ; )
```
4.

```
#include<stdio.h>
void main()
{
    if(1)
        printf("Hello");
        printf("World");
    else
        printf("Bye");
}
```
5.

```
#include<stdio.h>
void main()
{
    clrscr();
    printf("Hello World");
    getch();
}
```

What is the output of the following programs?

6.

```
#include<stdio.h>
void main()
{
    int k,num=30;
```

```

        k=(num>5?(num<=10?100:200):500);
        printf("%d %d",num,k);
    }
7. #include<stdio.h>
   void main()
   {
       int x=12, y=7,z;
       z= x!=4 || y==2;
       printf("z = %d",z);
   }
8. #include<stdio.h>
   void main()
   {
       int x, y,z;
       x=y=z=1;
       z=++x || ++y && ++z;
       printf("x = %d y = %d z = %d", x, y, z);
   }
9. #include<stdio.h>
   void main()
   {
       int x=55;
       printf("%d %d %d", x<=55, x=40, x>=10);
   }
10. #include<stdio.h>
    void main()
    {
        int x=0;
        do
        {
            If(x>10)
                continue;
            x=x+10;
        } while(x<50);
        printf("%d", x);
    }

```

SECTION: B (Short Answer Type Questions)

Attempt All Questions.

(Marks: 5X2=10)

1. Discuss the characteristics of programming language.
2. Describe the structure of a C program.
3. Write Definition of following with suitable examples:
 - a. Qualifiers
 - b. Data types
 - c. Variables
 - d. Keywords
4. Differentiate between following with suitable example:
 - a. While and do...while
 - b. Break and continue

5. Write a C program to count negative and positive numbers in a given set of numbers. Use `scanf()` to read the numbers. Reading should be terminated when the number 0 is entered.

SECTION: C (Long Answer Type Questions)

Attempt any three Questions

(Marks: 5X3=15)

1. Write a C program to find greatest among three numbers using conditional operator.
2. Write a C program to print sum of following harmonic series:
 $1 + 1/2 + 1/3 + 1/4 + \dots + 1/n$ [The value of n should be given interactively through the terminal]
3. Write a C program to compute and print the values of square root and squares of the numbers 0 to 100.
4. Write a C program to compute the real roots of a quadratic equation: $ax^2 + bx + c = 0$
5. Write a C program to produce the following triangle:

```
1
0 1
1 0 1
0 1 0 1
1 0 1 0 1
```
