Candidate seat No: _____

Charotar University of Science and Technology [CHARUSAT]
Faculty of Technology and Engineering
U & P U Patel Department of Computer Engineering

Subject: CE141 Computer Concepts & Programming
First Internal Exam

Semester: 1st SEM B. Tech.
Branch: CE/IT/EC/DCE/DIT/DCSE   **Maximum Marks: 30**
Date: 11/09/2017 (Monday)   **Time: 11:10 a.m. to 12:10 p.m.**

Instructions:
(i) Attempt *all* the questions.
(ii) Figures to the right indicate *full* marks.
(iii) Make suitable assumptions and draw neat figures wherever if required.

Q-1   Do as directed.

(a) State whether the following statements are **True or False.**   **[01]**

     (1) It is necessary that a loop counter must only be an int. It cannot be a float.
     (2) The case values used in switch statement must be an integral type like int, char and enum.

(b) **Calculate number of iterations for the given code.**   **[02]**

```
(1)
#include<stdio.h>
#include<conio.h>
void main()
{
int count=0,i,j;
clrscr();
for(i=0;i<5; )
{
   i++;
   for(j=i+1;j<20;j=j+5)
     {
           count++;
     }
}
printf("%d",count);
getch();
}
```

```
(2)
#include <conio.h>
#include <stdio.h>
enum {true, false};
int main()
{
   int i = 1;
   clrscr();
   do
   {
      printf("%d\n", i);
      i++;
      if (i < 15)
        continue;
   } while(false);

   getch();
   return 0;
}
```

(c) **Select the most appropriate option from following Multi-Choice Questions.**   **[02]**
     (1) In $z = 7.8/x + (2*y + (3*m)/x*m)/(2/y);$
     which operation will be performed first?

         (i)   7.8/x   **(ii)**   2/y
         (iii)   3*m   **(iv)**   2*y

(2) Which of the following is an invalid method for input?

   (i)   `scanf("%d%d%d",&a,&b,&c);`

   (ii)   `scanf("Three values are %d %d %d",&a,&b,&c);`

   (iii)   `scanf("%d%*d%d", &a,&b,&c);`

   (iv)   `None of the mentioned`

Q-2   **Answer the following question.**

(a) Explain all the primary Data Types in C. **[02]**

(b) Draw the flowchart to find whether a number is Perfect Number or not. **[03]**

OR

(a) Convert the following conditional operator to else…if ladder. **[02]**

```
(((sub1>=55)&&(sub2>=45))||(((sub1>=45)&&(sub1<55))&&(sub2>=5
5)))?printf("passed\n"):((sub2<45)&&(sub1>=65))?printf("Reapp
ear for sub2\n"):printf("failed\n");
```

(b) Mention whether the following are **VALID/INVALID** variable names and symbolic constants. **[03]**

Sr. No	Variable Name	Sr. No	Symbolic Constant
1.	`Double`	4.	`#Define MAX=100`
2.	`20Rupees`	5.	`#define STENGTH 60;`
3.	`Avg  weight`	6.	`#define TAXRATE 1.10`

Q-3   **Write down following programs in C. (Any one)** **[05]**

(a) Write a program to compute the electricity bill using **else..if ladder**. The Steps for generating electricity bill are as follows:

   (a) Rules for Computing the unit charges:

No of Units Consumed	Rate/ Unit
For first 50 Units	Rs. 0.50
For Next 50 Units	Rs. 0.75
For Next 100 Units	Rs. 1.00
For Units Above 200	Rs. 1.50

   (b) Calculate GST tax by Government is 20% of the Unit Charge.

   (c) Meter Rent is fixed Rs. 25.

   (d) Total Bill = sum of (a) , (b) and (c).

(b) Write a Program to evaluate the following series using looping concept.

$1/1! + 2/2! + 3/3! + \ldots\ldots N/N!$

Q-4   Do as directed.

(a) Fill in the blank with most appropriate word.   **[02]**

1. The value of `sizeof(8.67)` would be _____ bytes.
2. _____ is used to skip current iteration of a loop.

(b) Find out the output of the following code.   **[02]**

```
#include<stdio.h>
#include<conio.h>
void main()
{
int st,ts=sizeof(double),ans;
int ac =2 , ca =3;
clrscr();
st=ts--;
ans=st<<2&&(ts>72-7%2||ts/st+3);

 if(st&ts&&ans==0)
    {
      printf("Honesty\n");
    }
  else if(ac^ca&&ans==1)
    {
printf("is the best policy\n");
    }
  getch();
     }
```

(c) Select the most appropriate option from following Multi-Choice Questions.   **[1]**

What is the output of the following code:

```
#include<stdio.h>
#include<conio.h>
void main()
{
   int c;
   clrscr();
   for(c=0;c++;c++)
    {
       printf("hello\r");
       printf("Joy\b\0Macwan");
    }
    printf("\nThe value of c is %d",c);
    getch();
}
```

(i)   Joylo   **(ii)** The value of c is 1
          The value of c is 0
(iii) Infinite loop   **(iv)** Joylo
                                               The value of c is 1

Q-5 **Answer the following question. (Any one)** [05]

(a) Explain the difference between **Compiler** and **Interpreter.**

(b) Explain **Type Conversion** in C in detail with example.

(c) Explain the difference between **pre-test loop** and **post-test loop.**

Q-6 **Write down following programs in C. (Any one)** [05]

(a) Write a program to print Fibonacci series up to n terms.
(Hint: 0 1 1 2 3 5 8 13……. n)

(b) In a company, worker efficiency is determined on the basis of the time required for a worker to complete a particular job. If the time taken by the worker is between 2 – 3 hours, then the worker is said to be highly efficient. If the time required by the worker is between 3 – 4 hours, then the worker is ordered to improve speed. If the time taken is between 4 – 5 hours, the worker is given training to improve his speed, and if the time taken by the worker is more than 5 hours, then the worker has to leave the company. If the time taken by the worker is input through the keyboard, print appropriate message regarding the efficiency of the worker. Use **Else..if Ladder.**

(c) Write a Program to print the following Pattern using **nested do..while** loop:

```
            1
         1     2
      1     2     3
   1     2     3     4
1     2     3     4     5
```

ALL THE BEST