Candidate ID No: _____

Charotar University of Science and Technology [CHARUSAT]

Faculty of Technology and Engineering

U & P U Patel Department of Computer Engineering

Subject: CE 103 Computer Concepts & Programming

First Internal Exam **(IT)**

Semester: 1st Sem B. Tech. **Maximum Marks: 30**

Date: 23/09/2014 (Wednesday) **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 (a) Do as directed.

1. Fill in the blanks with appropriate words. **[02]**

(a) Smallest individual unit in C program is known as **C Token**.

(b) There are **32** keywords in C.

(c) ASCII value is used to store **CHARACTER(char)** constant in memory.

(d) **Conditional operator (? :)** is the ternary operator in C.

2. State whether the following statements are TRUE or FALSE. **[02]**

FALSE (a) 3.4f is an example of float variable.

TRUE (b) All the three parts in a for loop statement, are optional.

FALSE (c) OX33 is an example of Octal constant.

FALSE (d) *goto* is a conditional jump statement.

3. Evaluate the expression step by step in detail. **[02]**

```
(9/6+2)*(4-3/2+1)+2%(3+1)=14
```

[02]

```
(9/6+2)*(4-3/2+1)+2%(3+1)
(1+2)*(4-3/2+1)+2%(3+1)
3*(4-3/2+1)+2%(3+1)
3*(4-1+1)+2%(3+1)
3*(3+1)+2%(3+1)
3*4+2%(3+1)
3*4+2%4
3*4+2
12+2 = 14
```

4. Classify the variable names in valid or invalid. If invalid specify reason.

(i) intgetch **VALID** (iii) constant **VALID** (v) ascii **VALID**

(ii) #define **INVALID** (iv) size of **INVALID** (vi)typeconversioin **V**

(b) Attempt the following questions. (Any Three) **[03]**

1. Explain the fundamental data types of C.
2. Explain the syntax of *if…else*.
3. Explain casting a value.
4. Explain short hand operator.
5. Differentiate getch() and scanf() functions.

(c) 1. Differentiate: Assignment Operator vs. Comparison Operator **[04]**
2. List out the six sections of any C program.

Q-2 (a) Attempt any Two. **[10]**

1. Write a program to add all the odd numbers from 1 to *n* using while loop.
2. Write a program that prints whether the entered number is between 1 to 100, 101 to 500, 501 to 999 or greater than 999.
3. Write a program to calculate a^n where a is in float and n in integer.

(b) What is the output of the following code? **[03]**

(1)
```
void main()
{
 int as=3,sa=5,Sa,aS;
 Sa=sa<<1; as++;
 aS=Sa++ + as;
 printf("%d\n",sa++);
 printf("%d",--as);
}
```
5
3

(2)
```
void main()
 {
   int o=1%2,p=sizeof(float);
   int q,r=5,s=10/2,t;
   q=r>>2 && p>31-12%4 || r/q+3;
   t=(p>q)?(s*r-2):(o/4%2);
   printf("%d %d",o,s);
 }
```
1 5

(3)
```
void main()
  {
    int a,b;
    a=3%4;
    switch(a/1)
    {
        default:printf("I");
        case 3:printf("T");
        case 2:printf("W");
        case 1:printf("O");
    }
}
```
TWO

(c) Calculate total number of iterations for the given loop. **[01]**

(1)
```
void main()
{
    int x,y=2,z=3;
    for(x=1;y<=z;z++)
    {
        y=z%2;
        printf("%d",x--);
        y++;
    }
}
```
infinite

(2)
```
void main()
{
   float d=3.14;
   short int b=1,c=4;
   while(b<c)
   {
      b=(int)d;
      --b;
      c=c+1/2;
      printf("%d %d\n",b,c);
    }
}
```
infinite

(d) Replace the following code with if…else. (Here x,z,m,n,d are variables) **[01]**

```
x=(x<100.5)?500*4.8/2:((x==100.5)?z+5%d:(m+n)/2);
```

Ans:

```
if(x<100.5)
   x=500*4.8/2;
else
{
   if(x==100.5)
      x=z+5%d;
   else
      x=(m+n)/2;
}
```

****