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 **(CE/IT/EC)**

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

Date: 29/09/2014 (Monday) **Time: 02:20 to 03:20 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) _____ loop executes at least once if the condition is false.

(b) _____ is the keyword as well as operator in C.

(c) Character constant is stored in memory using _____ value.

(d) **double a[5]**; declaration occupies _____ bytes of memory.

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

(a) A compiler converts object code into source code.

(b) All the programs implemented in switch…case can be implemented using else...if ladder.

(c) In C, there is no bound checking for an array.

(d) Explicit type conversion is also an operator in C.

3. Write equivalent code using if…else. **[02]**

```
Z = (sal == 10000) ? ( sal*0.1) : ((sal<10000) ? 9000 : (sal*0.12));
```

4. Classify the variable names in valid or invalid. If invalid specify reason. **[02]**

(i) (keyword)	(iii) 1One	(v) USB
(ii) a.b	(iv) 2B	(vi) Char

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

1. Define unary and binary operators.
2. Explain *tolower*( ) and *isupper*( ).
3. Explain Pre-decrement & Post-increment with example.
4. Draw the memory layout for float A[3]. First element address is 2001.
5. Evaluate the expression step by step: 3 + 3 / 3 – 3 % 3 + 3 / 3

(c) Explain with diagram the basic structure of C programs. **[04]**

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

1. Write a program to reverse the entered integer number.
2. Write a program to implement simple calculator (+, - , ×, ÷) using else if ladder.
3. Write a program to evaluate the following series:

$$1 - 2 + 3 - 4 + 5 - 6 \ldots \pm n.$$

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

(1)
```
void main()
{
  int a[2]={3,2};
  a[0]=a[1]*a[1];
  a[1]=a[0]*a[0];
  printf("%d,%d",a[0],a[1]);
}
```

(2)
```
void main()
{
  int p,q,r;
  p=(int)3.25;
  q=p++ + p;
  r=p + q--;
  printf("%d %d %d",p,r,q);
}
```

(3)
```
void main()
{
    int i=20,j=1,k=5;
    for(;j<5;j++,k--)
    {
        if(i<k)
            break;
        i=i/4;
        printf("%d ",i);
    }
}
```

(c) Calculate total number of iterations for the given loop. **[02]**

(1)
```
void main()
{
  int i, j;
  for(i=1, j=4; i<=5, j>0; i=i+2, j--)
    printf("%d %d\n",i, j);
}
```

(2)
```
void main()
{
  int a,b=5,c;
  for(a=1,c=2; b!=2; a++,c--)
    printf("%d ",--b);
}
```

(3)
```
void main()
{
  int i=2, j=4, a[5]={7,2,1,9,5}, k=0;
  while(i<j)
  {
    a[i-1]=j-i+a[i];
    a[j%2]=a[i-1];
    i++;
  }
}
```

(4)
```
void main()
{
  int i=12;
  LOOP:
    if(i<=10)
    {
      i++;
      printf("1");
      i++;
    }
    goto LOOP;
}
```

****