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. (CE/IT/EC)   **Maximum Marks: 30**
Date: 21/09/2016 (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   **Do as directed.**

(1) State whether the following statements are **True or False.**   **[02]**

     1. `1000L` is an example of long integer and `422.0f` is an example of float.
     2. In explicit type conversion, data type of the variable changes permanently.
     3. `Logical NOT(!)` is a binary operator.
     4. For the correct operation in do…while loop, semicolon is must after while.

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

```
(1) void main()                 (2) void main()
{                               {
    int x=3,y=2,z;                  int a=3,b=4,c=1;
    do{                            float e=c,f=b;
    z=x<<y;                        for(;a;)
    x++;                           switch(a/b)
    y=y+2;                         {
    z=4-3+2/1%3+4;                     case 1:e=b/c;break;
    printf("%d",y);                    case 0:a=e-1;break;
    }while(z!=0);                      case 3:a=0;break;
}                                      case 2:a++;a=b-c;
                                   }
                                }
```

(3) **What is the output of the following code?**   **[01]**
```
void main()
{
    printf("%d\n",- -2);
    printf("%d\n",12&17);
}
```

Q-2   **Answer the following question.**
(1) Draw the flowchart to find the factorial of a number.   **[02]**
(2) Classify the operators based on number of operands. Explain each in detail.   **[03]**

OR

Q-2   **Answer the following question.**
(1) Write an Algorithm to find Fibonacci series upto n terms. 0 1 1 2 3 5 8 ….   **[02]**
(2) Explain the main difference between *nested* if else and *else if* ladder.   **[03]**

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

(1) Write a program to calculate the salary of an employee as per the policy of the company.

Gender	Years of Experience	Salary
Male	>=10	15000
	<10	11000
Female	>=10	12000
	<10	10000

(2) Write a program to check whether the entered number is palindrome or not. (A number is palindrome if the original and reversed numbers are equal. e.g. 1441)

Q-4 **Do as directed.**

(1) Mention whether the following are **VALID/INVALID** variable names. [02]
- **(i)** Define
- **(ii)** A.S.C.I.I.
- **(iii)** Yes&No
- **(iv)** Keyword

(2) Explain the difference between getch ( ) and getchar ( ) function. [01]

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

```
(1) main()
   {
   int xs=4/3,sx=3/4;
   sx++;
   sx=xs--;
   for(sx=3%4;sx<7;)
   {
     sx++;
     printf("%d",4);
   }}
```

```
(2) main()
   {
    int p=3,q=4,r;
    r=p++ - p;
    q=++r - r;
    p=((3+2)/3+4)-2*2;
    printf("%d %d",p,q);
   }
```

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

(1) Explain sentinel controlled loop and counter controlled loop with example.

(2) Draw and explain basic structure of a C program.

(3) Explain any four functions of ctype.h. Also explain low-level language and high-level language with example.

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

(1) Evaluate the series: $1 - 1/2 + 1/3 - 1/4 \ldots \pm 1/n$

(2) If three sides of a triangle are entered through the keyboard, write a program to check whether the triangle is isosceles, equilateral or scalene triangle.
- An isosceles triangle is a triangle with (at least) two equal sides.
- An equilateral triangle is a triangle in which all three sides are equal.
- A scalene triangle is a triangle that has three unequal sides.

ALL THE BEST