

**Charotar University of Science and Technology [CHARUSAT]**  
**Faculty of Technology and Engineering**  
**CE / IT / EC**

**Subject: CE 101 Fundamentals of Computing and Programming**  
**First Internal Exam**

Semester: 2<sup>nd</sup> Sem B. Tech. (CE/IT/EC)

Maximum Marks: 30

Date: 31/01/2013 (Thursday)Time: 09:45 a.m. to 10:45 a.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.

<b>Q-1</b>	<b>Do as Directed.</b>	<b>[15]</b>
(a)	Give the differences between Compiler and Interpreter.	<b>[01]</b>
(b)	Explain the basic structure of C program.	<b>[03]</b>
(c)	<p>Write a program to calculate the sum of 10 numbers, entered by user using if and goto statement.</p> <pre> #include&lt;stdio.h&gt; #include&lt;conio.h&gt; void main() {     int sum=0;     int cnt=1,temp;     clrscr();      start:      printf("\n enter number:");     scanf("%d",&amp;temp);     sum=sum+temp;     cnt++;     if(cnt&lt;=10)         goto start;     printf("\n sum=%d",sum);     getch(); }</pre>	<b>[04]</b>
(d)	What are different types of C tokens? Explain them in detail.	<b>[04]</b>
	<b>OR</b>	

(e)	List out different forms (types) of if statement and explain how does else...if ladder and nested if differ with example?	[04]
(f)	<p>Give an output of the following codes.</p> <pre>(1) main() {     int a, b=10;     char c = 'B';     a = b + c;     printf("A = %c",a); }</pre> <p><b>OUTPUT: L</b></p> <pre>(2) main() {     int x = 2, y = 1, z = 0;     switch(x)     {         case 2:             x=1;    y=x+1;         case 1:             x=0;    break;         default:             x=1;    y=0;     }     printf("X = %d , Y = %d , Z = %d",x,y,z); }</pre> <p><b>OUTPUT: x=0, y=2, z=0</b></p>	[02]
(g)	List down the rules for identifiers.	[01]
<b>Q-2</b>	<b>Answer the following questions.</b>	<b>[15]</b>
(a)	List out all categories of operators in 'C' and explain any two briefly.	[03]
(b)	Differentiate between getchar() and scanf().	[01]
(d)	Find binary equivalent of (20.9) <sub>10</sub> .	[01]
(c)	<p>Give an output of the following codes:</p> <pre>(1) main() {     int i=1;     while(i&lt;10);     {         printf("I = %d",i);         i++;     } }</pre> <p><b>OUTPUT: infinite loop</b></p>	[02]

	<pre> (2) main() {     int x=10,y=8,ans;     ans = ++x + ++y - 10 + x++ + --x + y++;     printf("%d %d %d", ans , x , y ); } </pre> <p><b>OUTPUT: 38,11,10</b></p>	
(d)	Write down an algorithm and draw the flow chart to find whether given number is Prime or not.	[02]
(e)	<p>Write a program to find the left most integer digit of a given floating point number.</p> <pre> #include&lt;stdio.h&gt; #include&lt;conio.h&gt; void main() {     float num;     int lft;     clrscr();     printf("\n enter number:");     scanf("%f", &amp;num);     lft=num;     while(lft&gt;9)     {         lft/=10;     }     printf("\n left most digit is %d",lft);     getch(); } </pre>	[02]
(f)	<p>Write a program to print all integers that are not divisible by either 2 or 3 and lie between 1 and 100 using do...while loop.</p> <pre> #include&lt;stdio.h&gt; #include&lt;conio.h&gt; void main() {     int i;     clrscr();     i=1;     do     {         if((i%2!=0    i%3!=0))         {             printf("\n %d",i);         }         i++;     }     while(i&lt;100); } </pre>	[04]

	<pre> }while(i&lt;=100); getch(); } </pre>	
	OR	
(f)	<p>Write a program to evaluate series: <math>1^2/1! + 2^2/2! + 3^2/3! + \dots + n^2/n!</math></p> <pre> #include&lt;stdio.h&gt; #include&lt;conio.h&gt; #include&lt;math.h&gt;  void main() {     float result=0,fact;     int i,num;     clrscr();      printf("\n enter the number:");     scanf("%d",&amp;num);     for(i=1;i&lt;=num;i++)     {         fact=1;         for(j=1;j&lt;=i;j++)         {             fact=fact*j;         }         result=result+(pow(i,2)/fact);     }     printf("\n answer is=%f",result);     getch(); } </pre>	[04]

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