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.** **½ Marks for each correct answer** **(1)** It is necessary that a loop counter must only be an int. It cannot be a float. **False** **(2)** The case values used in switch statement must be an integral type like int, char and enum. **True**	**[01]**
(b)	**Calculate number of iterations for the given code.** **1 Marks for each correct answer**	**[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();
}
```

Ans:
18

(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;
}
```

Ans:
Infinite Loop

(c)	**Select the most appropriate option from following Multi-Choice Questions.** **1 Marks for each correct answer** **(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`	**[02]**
Q-2	**Answer the following question.**	
(a)	Explain all the primary Data Types in C. **½ Marks for char** **½ Marks for int** **½ Marks for float** **½ Marks for double**	**[02]**
(b)	Draw the flowchart to find whether a number is Perfect Number or not. **1 Marks for correct Input/output start and end symbol** **1 Marks for correct condition/decision symbol** **1 Marks for showing loop**	**[03]**
	OR	

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

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

1 Marks for if(condition)
1 Marks for else if(condition) & else

Ans:

```
if(((sub1>=55)&&(sub2>=45))||(((sub1>=45)&&(sub1<55))&&(sub2>=55)))
{
   printf("passed\n");
}
else if((sub2<45)&&(sub1>=65))
{
printf("Reappear for sub2\n");
}
else
{
printf("failed\n");
}
```

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

½ Marks for each correct Valid / Invalid statement

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

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). **1 Marks for correct Declaration** **1 Marks for correct Input Statement** **2 Marks for correct Logic** **1 Marks for correct Output Statement**	
(b)	Write a Program to evaluate the following series using looping concept. 1/1! + 2/2! + 3/3! + ……N/N! **1 Marks for correct Declaration** **1 Marks for correct Input Statement** **2 Marks for correct Logic** **1 Marks for correct Output Statement**	

Q-4	**Do as directed.**	
(a)	**Fill in the blank with most appropriate word.** **1 Marks for each correct answer** 1. The value of `sizeof(8.67)` would be **8** bytes. 2. **continue** is used to skip current iteration of a loop.	**[02]**

(b)	**Find out the output of the following code.**
	
	2 Marks for correct output
	
	`#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();`
		[02]

	} **Ans:** **is the best policy**	

(c)	**Select the most appropriate option from following Multi-Choice Questions.**
	What is the output of the following code:
	1 Marks for correct answer
	
	`#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
	The value of c is 0
	(ii) **The value of c is 1**
	(iii) Infinite loop
	(iv) Joylo
	The value of c is 1
		[1]

Q-5	**Answer the following question. (Any one)**	**[05]**
(a)	Explain the difference between **Compiler** and **Interpreter.** **5 Marks – 5 Difference : 1 marks for each difference**	
(b)	Explain **Type Conversion** in C in detail with example. **2 ½ Marks for Implicit conversion** **2 ½ Marks for explicit conversion**	
(c)	Explain the difference between **pre-test loop** and **post-test loop.** **5 Marks – 5 Difference : 1 marks for each difference**	
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) **1 Marks for correct Declaration** **1 Marks for correct Input Statement** **2 Marks for correct Logic** **1 Marks for correct Output Statement**	

(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.** **1 Marks for correct Declaration** **1 Marks for correct Input Statement** **2 Marks for correct Logic** **1 Marks for correct Output Statement**	
(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 **1 Marks for correct Declaration** **1 Marks for correct Input Statement** **2 Marks for correct Logic** **1 Marks for correct Output Statement**	

ALL THE BEST