CHAROTARUNIVERSITY OF SCIENCE & TECHNOLOGY

First Semester of B.Tech. Examination (CE / IT / EC)

November 2013

CE103 –Computer Concepts & Programming

Date: 30.11.2013, Saturday **Time: 10:00 a.m. to 01:00 p.m.** **Maximum Marks: 70**

Instructions:

1. Attempt all questions.
2. Section I and II must be attempted in separate answer sheets.
3. Write down output for programs being asked and draw neat figures wherever required.

SECTION - I

Q - 1 (a) Do as directed.

1. What is the difference between High-Level language and Low-Level Language? **[02]**
2. Classify whether following Symbolic Constants are valid or invalid and give reasons if any of the following Symbolic Constants are invalid. **[03]**

   (i) #define PI = 3.14 (ii) #define PI 3.14; (iii) #Define PI 3.14
3. Explain the significance of *sizeof* operator in C. **[01]**
4. Explain any one character test function of *ctype.h*. **[01]**

(b) What is the output of the following code? **[04]**

1.
```
void main()
{
  int a=7,b=5,c,d;
  c=a % b;
  d=++c  – a-- ;
  printf("c = %d \n",c);
  printf("d = %d \n",d);
}
```

2.
```
void main()
{
  int a=9,b=12,c=3,y,z;
   y = a - b / ( 3 + c ) * ( 2 - 1 ) + b;
    z  = a - ( b / ( 3 + c ) * 2 ) - 1 - c;
   printf("y = %d \n",y);
   printf("z = %d \n",z);
}
```

Q - 2(a) Explain the basic structure of a C Program with neat diagram. **[05]**

(b) List down operators available in C and explain any two with an example. **[05]**

(c) Differentiate: compiler - interpreter **[02]**

OR

Q - 2(a) Draw a flowchart to find largest of three integer numbers. **[05]**

(b) Explain else-if ladder with an example. **[05]**

(c) Differentiate: Entry Controlled loop - Exit controlled loop **[02]**

Q -3 (a) Write a program to print first N numbers of Fibonacci series using do…while loop. **[6]**

1 1 2 3 5 8 13 21 ….

(b) Write a program to print all numbers between 20 and 30 which are not divisible by 7. **[6]**

OR

Q -3 (a) Write a program to check whether given the number is prime number or not. **[6]**

(b) Write a program that performs following operation using switch…case statement. **[6]**

If input is 1: it checks whether the number is odd or even.

If input is 2: it checks whether the number is positive or negative. (0 is positive)

If input is 3: it finds the factorial of a given number.

SECTION – II

Q - 4 (a) Answer the following. **[07]**

1. int a[3][4] is declared as an array. Memory address of a[0][0] is 2000. What is the memory address of a [1][2]?
2. List down any two library functions defined in *string.h* with syntax.
3. Explain any one storage class.
4. State True or false. When we define the structure, memory is allocated to it.
5. State True or false. If p1 and p2 are two integer pointers, p1+ p2 is valid statement.
6. If the file exists then content of the file will be lost; if it is opened in _____ mode.
7. The return type of *malloc*() function is _____.

Q - 4 (b) Give the difference between the following. (Any Two) **[04]**

1. Arrays and Structure.
2. Local variable and Global variable.
3. Structure and Union.

Q - 5 (a) Explain actual arguments and formal arguments using example in detail. **[06]**

(b) List all categories of function and explain any two with example. **[06]**

OR

Q - 5 (a) Explain Recursive function. Write a recursive function to calculate factorial of a given number. **[06]**

(b) Explain the difference between *call by value* and *call by reference* with example. **[06]**

Q - 6 (a) Write a program using 2-D array to add two 3*3 matrix. **[06]**

(b) Write a program to reverse the case of a given string without using library function of *ctype.h*. (e.g.AbCd →aBcD) **[06]**

OR

Q - 6 (a) Define a structure name country having members like country name, population, and national language. Input data of 3 countries, using arrays of structure and find country having highest population. **[06]**

(b) Write a program to evaluate the series: $1! - 2! + 3! - 4! \ldots \pm n!$. Define *fact*( ) function that takes a number as an argument and returns its factorial. **[06]**

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