Seat No. : _____

NC-136

December-2015

F.Y. M.Sc. (CA & IT)

Fundamentals of Programming

Time : 3 Hours] **[Max. Marks : 100**

1. (A) Draw a flowchart for the following : **8**

Calculate the bill amount for two items. Accept their quantity sold and price per unit from the user. Add 12.6% tax. Give discount of 10%, if the bill amount is more than 2000.

(B) Answer the following : (Any **two**) **12**

(i) Explain primary datatypes available in C.

(ii) Explain Implicit and Explicit type conversion with example.

(iii) Explain any two categories of datatypes with example.

2. Attempt any **two** :

(A) Answer the following : **10**

(i) Explain different functions to read a single character from the user. Also give syntax and example.

(ii) Explain any two forms of if statement with syntax and example.

(B) Do as directed : **10**

(i) The variables count, price and city have the following values : **4**

count < --------- 2134

price < --------- –432.99

city < --------- Ahmedabad

Show the exact output :

(a) printf("%9dxxxx%4.2f", count, price);

(b) printf("%-10d%-12s", count,city);

(ii) Find errors, if any, in the following segment : **4**

```
if (code > 1);
        b + c = a
Else
        a = 0;
```

(iii) What will be the value of z after the execution of the following code ? Assume that $x = 6$, y = 7, and z = 6 are the initial values. **2**

```
if (x)
    if (y)
        z = 20;
else
    z = 0;
```

(C) Write an interactive program to demonstrate the process of multiplication. Program should ask the user to enter 2 two-digit integers. Check that the numbers are greater than 9 and less than 100 or not. Else display appropriate error message. If proper numbers are entered, print the product of integers as shown below. (For printing, proper formatting is required) **10**

```
                    32
                 ×  72
                ------
7 × 32 × 10 is   2240
2 × 32      is     64
                ------
Add         them 2304
```

3. (A) Answer the following : (Any **two**) **10**

(i) Explain either break or continue statement with example.

(ii) Differentiate between while and do..while loops.

(iii) Write a short note on nested loops.

(B) Do as directed : (Any **2**) **10**

(i) Write a loop to search a given key number in the given array.

(ii) Write a for loop to print the following :

1, 4, 9, 16, ……, n^2

(iii) Write a loop to find a factorial of a given number.

(e.g. 5! = 1 * 2 * 3 * 4 * 5)

4. Answer the following : (Any **four**) **20**

(A) Define array. Write syntax for declaring an array. Explain different ways of initializing an array.

(B) How can we declare, scan and print 3×4 matrix ? Explain with example.

(C) Write a loop to add 10 to all the elements of an array. Assume that, array [5] is declared and already scanned.

(D) Count number of zeroes in the given two dimensional array.

(E) Identify errors in each of the following array declaration statements.

(i) int array (50);

(ii) float matrix [5,4];

(iii) char string [10]

(iv) int i = 10;
double salary [i];

(v) float matrix [3], [4];

5. Answer the following : (Any **four**) **20**

(A) Explain different ways of reading a string from the user.

(B) Explain different ways of initializing a string at the time of declaration.

(C) Explain any two string handling functions with syntax, purpose and example.

(D) Compare the working of the functions : strcpy and strncpy

(E) Write a C program to print the following :

A
AL
ALL
ALLT
ALLTH
ALLTHE
ALLTHEB
ALLTHEBE
ALLTHEBES
ALLTHEBEST

———————