Name : ....

Roll No. : ....

Invigilator's Signature : ....

CS/BCA/SEM-1/BCA-103/2013-14
2013
INTRODUCTION TO PROGRAMMING

Time Allotted : 3 Hours   *Full Marks* : 70

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

GROUP – A
(Multiple Choice Type Questions)

1.   Choose the correct alternatives for the following : $10 \times 1 = 10$

   i)   Which of the following is a valid typecast ?

   a)   `To(int, x)`   b)   `X(int)`

   c)   `(int)X`   d)   `(integer)X`.

   ii)   How many times is a do while loop guaranteed to loop ?

   a)   0   b)   1

   c)   Infinite   d)   Variable.

   iii)   Which of the following operators represent logical AND ?

   a)   `&`   b)   `AND`

   c)   `&&`   d)   `||` .

   iv)   Which of the following characters ends all strings ?

   a)   `'\n'`   b)   `'\t'`

   c)   `'\s'`   d)   `'\0'`.

v) Which of the following is a complete function ?

a) int fn(int a){return a--;}

b) int fn();

c) int fn(int a){return a--}

d) int fn(int a){return a--};

vi) Which of the following adds one string to the end of another ?

a) append()   b) strcat()

c) strconcat() d) stradd()

vii) Which is not the correct variable type in c ?

a) int   b) float

c) char   d) real.

viii) What is the index number of the last element of an array with 50 elements ?

a) 50   b) 49

c) 0   d) 1.

ix) Union item {char name; int code; float price;} u;

How much space is occupied by this union ?

a) 1 byte   b) 2 bytes

c) 4 bytes   d) 7 bytes.

x) Conditional operator is a .... operator.

a) unary   b) binary

c) ternary   d) quaternary.

GROUP – B
(Short Answer Type Questions)
Answer any *three* of the following. $3 \times 5 = 15$

2. What do you mean by local variable and global variable ? Discuss various available storage classes in C. $2 + 3$

3. Write a program to print the sum of the following series.

   $S = 1 \wedge 2 + 2 \wedge 2 + 3 \wedge 2 + \ldots\ldots\ldots + n \wedge 2.$

4. Write down the difference between structure and union. Write a function to print the sum of the even numbers from 1 to n. $2 + 3$

5. Discuss call by value and call by reference with example.

6. What is header file in C ? What are the differences between inbuilt and user defined function ? What is pre-processor directive ? $1 + 3 + 1$

GROUP – C
(Long Answer Type Questions)
Answer any *three* of the following. $3 \times 15 = 45$

7. a) What are the basic differences between while, do while and for loop ?

   b) Write a C program to print natural numbers from 1 to n.

   c) Write a C program to find factorial of a given integer.

   $5 + 5 + 5$

8. a) Write a C program to print integers from 1 to n omitting those integers which are divisible by 10.

    b) Write a C program to find the square of the sum of the digits of any given positive integer. 7 + 8

9. a) Is printf a function ? If yes, then what does it return ?

    b) Determine how much money is in a piggy bank that contains several 50, 25, 20, 10 and 5 paise coins. Use the following values to test the program : five 50 paise, three 25 paise, two 20 paise, one 10 paise and fifteen 5 paise.

    c) Write a C program to find out the biggest among three numbers using one extra variable. 4 + 6 + 5

10. a) What are the basic advantages of using recursive function ?

    b) Write a C program to display the Fibonacci Series of n numbers using recursion.

    c) Write a C program to check whether a number is prime or not. 5 + 5 + 5

11. a) Write a program to print the series as given alongwith the sum :

        1 – 2 + 3 – 4 + 5 – ...... n.

    b) Write a program to find the LCM of two numbers. 8 + 7