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 Question)

1.   Choose the correct alternatives for the following: 10 x 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 string?

      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 x 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.

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

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

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 x 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 mean?

   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 50paise, 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 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 along with the sum:

$1 - 2 + 3 - 4 + 5 - \ldots\ldots\ldots n.$

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

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