

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) <code>To(int, x)</code> | b) <code>X(int)</code> |
| c) <code>(int)X</code> | d) <code>(integer)X.</code> |

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) <code>&</code> | b) <code>AND</code> |
| c) <code>&&</code> | d) <code> </code> . |

iv) Which of the following characters ends all strings ?

- | | |
|----------------------|-----------------------|
| a) <code>\\n'</code> | b) <code>\\t'</code> |
| c) <code>\\s'</code> | d) <code>\\0'.</code> |

- 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.
$$S = 1 \wedge 2 + 2 \wedge 2 + 3 \wedge 2 + \dots + n \wedge 2.$$
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 :
 $1 - 2 + 3 - 4 + 5 - \dots n.$
- b) Write a program to find the LCM of two numbers. $8 + 7$
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