CS/BCA/SEM-1/BCA-103/2011-12

2011
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
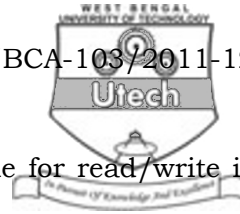*as far as practicable.*

GROUP – A
(Multiple Choice Type Questions)

1.   Choose the correct alternatives for any *ten* of the following :

                                                                $10 \times 1 = 10$

   i)   Which of the following operators accepts only integer operands ?

   a)   +   b)   *

   c)   /   d)   %

   ii)   Do-While loop is called .... in C language.

   a)   entry controlled loop   b)   exit controlled loop

   c)   both (a) and (b)   d)   none of these.

   iii)   C supports the .... statement to branch unconditionally from one point to another in the program.

   a)   Continue   b)   Break

   c)   Goto   d)   Switch.

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iv) An array of string ends with

   a)   NULL

   b)   last character of the string

   c)   0

   d)   none of these.

v) The declaration of float *a[5]; is

   a)   a normal pointer

   b)   an ordinary array

   c)   an array of pointer

   d)   a pointer to an array

vi) When the pointer is incremented by one, it results the pointer to

   a)   point the next element

   b)   increment its data value by one

   c)   both (a) & (b)

   d)   none of these.

vii) Call by reference is done with the .... of the variable.

   a)   contents

   b)   address

   c)   both (a) and (b)

   d)   none of these.

viii) Static memory allocation means allocation during .... time.

   a)   compile   b)   run

   c)   allocation   d)   de-allocation.

ix) The mode used for creating a text file for read/write is

(a) r+ (b) w+ (c) a+ (d) w

x) What should be the correct output of the following program ?

main ( )

{

    int k, num = 30;

    k = (num > 5 ? (num < 10 ? 100 : 200) : 500) ;

    printf ("%d %d", num, k) ;

}

a) 200 30   b) 30 100

c) 30 200   d) 30 500.

xi) What is the value of y in the following code ?

$x = 7;$ $y = 0;$

if ($x = 6$)

    $y = 7 ;$

else

    $y = 1;$

a) 7   b) 0

c) 1   d) 6.

xii) Determine the out put :

```
f( )
{
static int i = 0;
i++;
if ( i < = 3 )
{
print f ( "\n%d", i );
f ( );
}
else
exit ( O );
}
main ( ) { f ( ) ; }
```

a)   1, 2   b)   2, 3

c)   1 2 3   d)   None of these.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following.   3 × 5 = 15

2. a) What do you mean by local variable and global variable ?

    b) Discuss on various available storage classes in C.   2 + 3

3. What do you mean by recursion ? Write a recursive function called power ( ) to calculate *x* rise to the power *n*.   2 + 3

4. Compare array and linked list.

5. a) Distinguish betwen structure and union.

   b) Write down the following program in C :

      Input an M-digit number. Print its digit one by one. (least significant but first)   2 + 3

6. Write a program to print the sum of the following series of n terms :

   $S = 1 + (1 + 2) + (1 + 2 + 3) + \ldots\ldots\ldots\ldots$

GROUP – C
(Long Answer Type Questions)

Answer any *three* of the following. $3 \times 15 = 45$

7. a) Do you have the facility of multiple way branching in C ? If so, how ? Explain your answer with an example. 5

   b) Write down the differences between 'do-while' and 'while-do' statements in C.   5

   c) What is a macro ? Write down the advantages of macro over function.   5

8. a) Give example of each of the following :

   i) Function returning a pointer to an array of float.

   ii) Function returning a pointer to a function returning float.

    iii)   Pointer to pointer to integer

    iv)   Pointer to an array of integers.

    v)   Pointer to an array of pointers to a function returning character. 5×2

b)   Discuss on call by value and call by reference.   5

9.   a)   Explain with examples the meaning of explicit and implicit type casting.   5

   b)   Compare between static memory allocation and dynamic memory allocation.   5

   c)   Write down program in C that will accept a string from the user and print the frequency of each characters of the string entered.   5

10. a)   What do you mean by integer division in C?   3

   b)   Write a note on logical operators available in C.   5

   c)   Write down a program that will find out the maximum and the minimum of the given set of n numbers (you can examine the set of numbers only once).   7

11. Differentiate between any *three* of the following :   3 × 5

    a)   Declaring a variable

    b)   Break and exit

    c)   Union and structure

    d)   auto and extern.