CS/BCA/SEM-1/BCA-103/2009-10

2009
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 x 1 = 10

   i)   A filter point is a

        a)   stream pointer

        b)   buffer point

        c)   pointer to FILE data type

        d)   all of these.

   ii) Which is not a storage class ?

        a)   auto   b)   struct

        c)   typedef   d)   static.

   iii) 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.

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iv) How is a variable accessed from another file ?

    a) The global variable referenced via the global specifier

    b) The global variable is referenced via, the auto-specifier

    c) The global variable is referenced via the extern specifier

    d) The global variable is referenced via the pointer specifier.

v) main ( )

    {

      int a = 3;

      printf("%d%d%d%d%d",a++, ++a, ++a, a++);

    }

    a) 3566   b) 6653

    c) 3565   d) 6666.

vi) main ( )

    {

    printf(%d%d%d%d",sizeof(3.14f),sizeof(3.14),sizeof(314))

    }

    a) 422   b) 421

    c) 482   d) 442.

vii) If the array begins at address 6548 ?

    main ( )

    {

      int a [ ] = { 12, 14, 15, 23 };

      printf("%u%u",a,&a);

    }

    a) 6548 6558   b) 6548 6548

    c) 6548 6550   d) none of these.

viii) How many times the message *Hello* will be printed in the following program ?

```
void main ( )
{
    int x;
    for(x=-1; x<=10; x++)
    {
        if (x<5)
        continue;
        else
        break;
        printf("Hello");
    }
}
```

a) 11 times   b) 10 times

c) once   d) 0 times.

ix) What would be the correct output of the following program ?

```
void 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.

x) Choose the correct output :

```
void main ( )
{
        char str[20]="Hello';
        char * const p=str;
        *p='M';
        printf("%s",str);
}
```

a) Mello   b) Hello

c) HMello   d) MHello.

GROUP – B
(Short Answer Type Questions)

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

2. a) What do you mean by Recursion ? Give example.   3

b) What are strings ? Explain with example.   2

3. a) Explain the difference between structure & union with examples.   4

b) What is Pointer ?   1

4. Using pointer write a program to find out length of the given string without using strlen ( ) function.   5

5. Write a program to check whether a given string palindrome or not. 5

6. What do you mean by scope of a variable ? Explain the storage classes available in C. 2 + 3

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

7. What is structure ? How does a structure differ from any array ? What do you mean by call by value and call by reference ? Write a C program, which accepts an integer numbers and prints the multiplication of the digits.

2 + 2 + 2 + 2 + 7

8. a) What do you mean by malloc ( ) and calloc ( ) ? Explain their difference. 5

   b) Using pointer write a function that will calculate maximum and minimum of a given set of numbers. 7

   c) Write a recursive function that will calculate HCF of/two numbers. 3

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9.   a)   Explain strcat ( ), strcmp ( ), strrev ( ), strlen ( )

    b)   Write C code to print

```
        1

    2   3

    4   5   6

    7   8   9   10

   11  12  13  14  15
```

    c)   Write C code to print

```
A  B  C  D  E  F  E  D  C  B  A

A  B  C  D  E     E  D  C  B  A

A  B  C              C  B  A

A  B                    B  A

A                          A
```

                                                          2 + 6 + 7

10.   a)   What is a function ?   2

    b)   What do you mean by the following :   3

           i)   Function declaration

           ii)   Function calling

           iii)   Function definition.

c) When is it necessary to declare prototype of a function ?

3

d) Write a program to arrange a group of numbers into positive & negative numbers. 7

11. What is loop ? Discuss the different types of loops with syntax and appropriate examples. Write a program to print the summation of the following series :

$$1 + \frac{1}{2^2} + \frac{1}{3^2} + \frac{1}{4^2} + \ldots\ldots + \frac{1}{N^2}.$$ 2 + 8 + 5

———————

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