F·E·(Sem II) Choice Based.

27/05/2019

Time: 3 Hours

Total Marks: 80

N.B
(1) Question no. 1 is compulsory.
(2) Attempt any 3 from the remaining questions.
(3) Assume suitable data if necessary.
(4) Figures to right indicate full marks.

Q.1 a Attempt the Multiple Choice Questions

6

i)#include<stdio.h>
```
int main()
{
  int a=0;
  a=a++ + a++ - a++ + ++a;
  printf("%d\n", a);
  return 0;
}
```
The output of above program is
(a) 2   (b) 0   (c) 3   (d) Error

ii) Which of the following operator can be used to access value at address stored in a pointer variable?

(a) *   (b) @   (c) &   (d) &&

iii)In C Programming which of the operator have the highest precedence
(a) Relational   (b) Arithmetic   (c)Bitwise   (d) Logical

iv) Which of the following are themselves a collection of different data types?
(a) string   (b) 2D Arrays   (c) structures   (d) char

v) If x and b are the float variable what is the value of x when x=sizeof(b).
(a) 2   (b) 3   (c) 4   (d) Null

vi)The default value of static storage class variable is
(a) Zero   (b) Garbage   (c) One   (d) None of above

b) Find the output of following

4

i)) #include <stdio.h>
```
int main()
{     int a=1;
      do{
            a++;
            ++a;
      }while(a++>25);

      printf("%d\n",a);

      return 0;
}
```

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```
ii) #include <stdio.h>
int main()
{       int x;
        x = 10;
        if(x > 10)
            x -= 10;
        else if(x >= 0)
                x += 00;
        else if(x)
                x += 10;
        else
                x -= 10;

        printf("%d\n",x);
        return 0;
}
```

c) Convert the following   6
    i)153 from base 10 to Hexadecimal
    ii)1100 1101 1001 1011 from base 2 to decimal
    iii) 143 from base 8 to decimal

d) Differentiate between Structure and Union   4

Q.2 a) What is recursion? Write a program using recursion to calculate the value of $Z=X^Y$. 8

     b) Write a function to reverse a 3 digit number   6
     c) Write a program to display following pattern   6

```
        0
       0 1
      0 1 0
     0 1 0 1
    0 1 0 1 0
```

Q.3 a) Write a program to find the frequency of digits in a set of numbers and remove duplicates 10
         from an array .For ex. array A={1,2,3,4,2,5,2} frequency of 2 is 3 and resultant array is
         A={1,2,3,4,5}.
     b) Explain the concept of nested structure? Declare a structure to enter employee 10
         Information like name, id, salary, date of joining. Use nested structure to get the address
         of an employee. Write a program to read 10 records and display them.

Q.4 a) Explain strncat() & strcpy() with example. Also write a program to check whether entered 10
         string is palindrome or not without using inbuilt string functions.
     b) Differentiate between call by value and call by reference. Write a program to calculate 10

         Factorial of a number using call by reference.

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Q.5   a)   What is file? Explain the functions available for Reading & Writing data of files?   10
           Write a program to take student information from user and store it in file.
      b)   Write a program to calculate sum of diagonal elements of a matrix.   10
           For ex.
           1 2 3
           5 9 8
           1 4 7
           Calculate the sum of diagonal elements=3+9+1=13

Q.6   a)   Explain storage classes with example.   10

      b)   Write a program to find greatest number among three entered number using ternary   4
           operator
      c)   Write a program to calculate the sum of series   6
           x-x/2!+x/3!-x/4!.....x/n!

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