/* Q1. Write following program using turbo c++ syntax 1.implement a class temperature to convert degree.fahernheit value to degree celcuis value (Hint:(C/5=F-32/9) where C is temperature in degree celcius and F is temperature in ferhernhiet degree)*/

```
#include <iostream.h>
#include <conio.h>

class temperature
{
   float f, c;

public:
   void getdata()
   {
      cout << "Enter temperature in Fahrenheit: ";
      cin >> f;
   }
   void convert()
   {
      c = (5 * (f - 32)) / 9;
   }
   void display()
   {
      cout << "Temperature in Celsius = " << c;
   }
};
void main()
{
   clrscr();
   temperature t;
   t.getdata();
   t.convert();
   t.display();
   getch();
}
```

/*Q2. Write a program in C++ to accept a positive integer and display its multiplication table(Hint-if n=5 then 5,10,15,20,25...50)*/

```
#include <iostream.h>
#include <conio.h>

void main()
{
   int n, i;

   clrscr();

   cout << "Enter a positive integer: ";
   cin >> n;

   cout << "\nMultiplication Table of " << n << ":\n";

   for(i = 1; i <= 10; i++)
   {
      cout << n * i << endl;
   }

   getch();
}
```

/*Q3. Write a C++ program to find Greatest Common Divisor(GCD) of two inputted numbers.*/

```
#include <iostream.h>
#include <conio.h>
void main()
{
   int a, b;
   clrscr();
   cout << "Enter first number: ";
   cin >> a;
   cout << "Enter second number: ";
   cin >> b;
   while(a != b)
   {
      if(a > b)
         a = a - b;
      else
         b = b - a;
   }
   cout << "GCD = " << a;
   getch();
}
```

```
/*Q4. Write a program in C++ to accept 10 integers in an array from keyboard and find largest element of an array*/
#include <iostream.h>
#include <conio.h>
void main()
{
   int a[10], i, max;
   clrscr();
   cout << "Enter 10 integers:\n";
   for(i = 0; i < 10; i++)
      cin >> a[i];
   max = a[0];
   for(i = 1; i < 10; i++)
   {
      if(a[i] > max)
         max = a[i];
   }
   cout << "Largest element = " << max;
   getch();
}
//*Q5.Write a program in C++  create a class test having member function getmarks() to read marks of two subjects and showsum() to display the total marks.*/
#include <iostream.h>
#include <conio.h>
class test
{
   int m1, m2, total;
public:
   void getmarks()
   {
      cout << "Enter marks of subject 1: ";
      cin >> m1;
      cout << "Enter marks of subject 2: ";
      cin >> m2;
   }
  void showsum()
   {
      total = m1 + m2;
      cout << "Total Marks = " << total;
   }
};
void main()
{
   clrscr();
   test t;
   t.getmarks();
   t.showsum();
   getch();}
```

```
//Q6.Write a program in C++ to read three integers and find smallst of these numbers
#include <iostream.h>
#include <conio.h>
void main()
{
   int a, b, c, min;
   clrscr();
   cout << "Enter three integers:\n";
   cin >> a >> b >> c;
   min = a;
   if(b < min)
      min = b;
   if(c < min)
      min = c;
   cout << "Smallest number = " << min;
   getch();
}
```

```
//Q7.Write  a program in a C++ which finds Fibonacci series of ‘n’ terms.
#include <iostream.h>
#include <conio.h>
void main()
{
   int n, t1 = 0, t2 = 1, t3, i;
   clrscr();
   cout << "Enter number of terms: ";
   cin >> n;
   cout << "Fibonacci Series:\n";
   if(n >= 1)
      cout << t1 << " ";
   if(n >= 2)
      cout << t2 << " ";
   for(i = 3; i <= n; i++)
   {
       t3 = t1 + t2;
      cout << t3<< " ";
      t1 = t2;
      t2= t3;
   }
   getch();
}
```

//Q8.Write a C++ program to find factorial of a number during execution by using constructor function

```
#include <iostream.h>
#include <conio.h>
class factorial
{
   int n, fact, i;
public:
   factorial()
   {
      cout << "Enter a number: ";
      cin >> n;
      fact = 1;
      for(i = 1; i <= n; i++)
         fact = fact * i;
      cout << "Factorial = " << fact;
   }
};
void main()
{
   clrscr();
   factorial ob;   // Constructor is called automatically
   getch();
}
```

//Q9.Write a C++ program to find entered number is Armstrong number OR NOT Armstrong.

```
#include <iostream.h>
#include <conio.h>
void main()
{
   int n, temp, r, sum = 0;
   clrscr();
   cout << "Enter a number: ";
   cin >> n;
   temp = n;
   while(temp != 0)
   {
      r = temp % 10;
      sum = sum + (r * r * r);
      temp = temp / 10;
   }
   if(sum == n)
      cout << "Armstrong Number";
   else
      cout << "Not an Armstrong Number";
   getch();
}
```

```
/*Q10.Implement a class average that accepts value ot three floats variables another function print()
average of three numbers.*/
#include <iostream.h>
#include <conio.h>
void main()
{
   float a, b, c, avg;
   clrscr();
   cout << "Enter three numbers: ";
   cin >> a >> b >> c;
   avg = (a + b + c) / 3;
   cout << "Average = " << avg;
   getch();
}
//Q11.Write a C++ program to find factorial of integers from 1 to 5
#include <iostream.h>
#include <conio.h>
void main()
{
   int i, j, fact;
   clrscr();
   for(i = 1; i <= 5; i++)
   {
      fact = 1;
      for(j = 1; j <= i; j++)
         fact = fact * j;
      cout << "Factorial of " << i << " = " << fact << endl;
   }
   getch();
}
/*Q12.Write a program in C++ to count and print occurance of the character ‘M’ in a given string of maximum 79 characters*/
#include <iostream.h>
#include <conio.h>
#include <string.h>
void main()
{
   char str[80];
   int i, count = 0;
   clrscr();
   cout << "Enter a string: ";
   cin.getline(str, 79);
   for(i = 0; str[i] != '\0'; i++)
   {
      if(str[i] == 'M')
         count++;
   }
   cout << "Occurrence of character 'M' = " << count;
   getch();
}
```

```
//Q13.Write a C++ program to read any integers and then check whether its prime or not.
#include <iostream.h>
#include <conio.h>
void main()
{
   int n, i, flag = 0;
   clrscr();
   cout << "Enter an integer: ";
   cin >> n;
   if(n <= 1)
      flag = 1;
   for(i = 2; i <= n/2; i++)
   {
      if(n % i == 0)
      {
         flag = 1;
         break;
      }
   }
   if(flag == 0)
      cout << "Prime Number";
   else
      cout << "Not a Prime Number";
   getch();
}

//Q14. Write a C++ program to generate and print first 15 terms of fibonacci series (1,1,2,3,5….)OR
//Q14.Write a C++ program to display a series of 15 terms of the fibonacci series.OR
//Q14.Write a C++ program to print 20 terms of fibonacci series(Series is- 0,1,1,2,3,5,8…..)
//Program Without using class
#include <iostream.h>
#include <conio.h>
void main()
{
   int a = 1, b = 1, c, i;
   clrscr();
   cout << "First 15 terms of Fibonacci series:\n";
   cout << a << " " << b << " ";
   for(i = 3; i <= 15; i++)
   {
      c = a + b;
      cout << c << " ";
      a = b;
      b = c;
   }
   getch();
}
```

```
/*Q15. Write a proagram in C++ using OOP technique to compute circumference of circle*/
#include <iostream.h>
#include <conio.h>
class circle
{
   float r, c;
public:
   void getdata()
   {
      cout << "Enter radius of circle: ";
      cin >> r;
   }
   void calculate()
   {
      c = 2 * 3.14 * r;
   }
   void display()
   {
      cout << "Circumference of circle = " << c;
   }
};
void main()
{
   clrscr();
   circle obj;
   obj.getdata();
   obj.calculate();
   obj.display();
   getch();
}
```

```
//*Q16.Write a C++ program to find the smallest of four given integers using function min() that returns the smallest of four given integers.The function prototype is as below int min(int,int,int,int).*/
#include <iostream.h>
#include <conio.h>
int min(int a, int b, int c, int d)
{
   int m;
   m = a;
   if(b < m)
      m = b;
   if(c < m)
      m = c;
   if(d < m)
      m = d;
   return m;
}
void main()
{
   int a, b, c, d, result;
   clrscr();
   cout << "Enter four integers:\n";
   cin >> a >> b >> c >> d;
   result = min(a, b, c, d);
   cout << "Smallest number = " << result;
   getch();
}
```

```
/*Q17.Write an object oriented program in C++ to read an integer number and find the sum of digits of
integer[Hint:input 125 output 8 i.e 1+2+5=8]*/
#include <iostream.h>
#include <conio.h>
class sumdigits
{
   int n, temp, r, sum;
public:
   void getdata()
   {
      cout << "Enter an integer number: ";
      cin >> n;
   }
   void calculate()
   {
      sum = 0;
      temp = n;

      while(temp != 0)
      {
         r = temp % 10;
         sum = sum + r;
         temp = temp / 10;
      }
   }
   void display()
   {
      cout << "Sum of digits = " << sum;
   }
};
void main()
{
   clrscr();
   sumdigits s;
   s.getdata();
   s.calculate();
   s.display();
   getch();
}
```

/*Q18.Write a program in C++ to read a set of 10 numbers from keyboard and findout largest number in the given array.*/

```
#include <iostream.h>
#include <conio.h>
void main()
{
   int a[10], i, max;
   clrscr();
   cout << "Enter 10 numbers:\n";
   for(i = 0; i < 10; i++)
      cin >> a[i];
   max = a[0];
   for(i = 1; i < 10; i++)
   {
      if(a[i] > max)
         max = a[i];
   }
   cout << "Largest number = " << max;
   getch();
}
```

//Q19. Write a C++ program to find the factorial of entered number.

```
#include <iostream.h>
#include <conio.h>
void main()
{
   int n, i;
   long fact = 1;
   clrscr();
   cout << "Enter a number: ";
   cin >> n;
   for(i = 1; i <= n; i++)
      fact = fact * i;
   cout << "Factorial = " << fact;
   getch();
}
```

/*Q20.Implement a class GCD which have function gcd() which calculate greatest common divisor of two numbers entered during execution print() will print the GCD of two numbers.*/

```
#include <iostream.h>
#include <conio.h>

class GCD
{
   int a, b;
public:
   void getdata()
   {
      cout << "Enter first number: ";
      cin >> a;
      cout << "Enter second number: ";
      cin >> b;
   }
   void gcd()
   {
      while(a != b)
      {
         if(a > b)
            a = a - b;
         else
            b = b - a;
      }
   }
   void print()
   {
      cout << "GCD = " << a;
   }
};

void main()
{
   clrscr();
   GCD ob;
   ob.getdata();
   ob.gcd();
   ob.print();
   getch();
}
```

/Q21.Implement a class average. Include a constructor in it which will accept value of these variables from user.include two more function in it ,one function calculate average and other print it./*

```
#include <iostream.h>
#include <conio.h>
class average
{
   float a, b, c, avg;
   public:
   average()
   {
      cout << "Enter three numbers: ";
      cin >> a >> b >> c;
   }
   void calculate()
   {
      avg = (a + b + c) / 3;
   }
   void print()
   {
      cout << "Average = " << avg;
   }
};
void main()
{
   clrscr();
   average obj;     // Constructor called automatically
   obj.calculate();
   obj.print();
   getch();
}
```

/*Q22.Implement the above class hierarchy of the inheritance.Class student accepts roll number of student,class marks accepts marks of three subjects and class result calculate the total and print details(create object of class result) hierarchy is Student→Marks→Result*/

```
#include <iostream.h>
#include <conio.h>
class Student
{
protected:
   int roll;
public:
   void getroll()
   {
      cout << "Enter Roll Number: ";
      cin >> roll;
   }
};
class Marks : public Student
{
protected:
   int m1, m2, m3;
public:
   void getmarks()
   {
      cout << "Enter marks of three subjects:\n";
      cin >> m1 >> m2 >> m3;
   }
};
class Result : public Marks
{
   int total;
public:
   void calculate()
   {
      total = m1 + m2 + m3;
   }
   void display()
   {
      cout << "\nRoll Number: " << roll;
      cout << "\nMarks: " << m1 << ", " << m2 << ", " << m3;
      cout << "\nTotal Marks = " << total;
   }
};
```

```
void main()
{
   clrscr();
  Result r;         // Object of Result class
   r.getroll();
   r.getmarks();
   r.calculate();
   r.display();
   getch();
}
```