General Instructions:
(i) All questions are compulsory.
(ii) Programming Language: C++

1. 
   a) What is the significance of Null terminator in c++? 
   b) Why are logical errors harder to locate? 
   c) What is the difference between ‘=’ and ‘= =’? 
   d) What do you mean by cascading of I/O operators? 
   e) What is the difference between keyword and identifier? 
   f) What are the features available in OOP? Write two advantages of OOP. 
   g) What are data types? Name all predefined data types in c++. 
   h) What is a logical operator? Give order of precedence 
   i) How will you include comments in c++? How many types of comments are there in c++ language? 
   j) What are Unary and Binary operators? Give example 
   k) Explain any two string handling functions with syntax and examples. 
   l) Distinguish between if and switch statement. 

2. 
   a) What is the effect of replacing ++ch with ch+1? 
   b) Which C++ header file(s) will be essentially required to be included to run/execute the following C++ code: 
      void main() 
      { 
          char Msg[ ]="Sunset Gardens"; 
          for (int i=5;i<strlen(Msg);i++) 
              puts(Msg); 
      } 
   c) Convert the following conditional statement into its equivalent if-else statement. 
      N=((a<b)?a:b); 
   d) Construct logical expressions to represent the following conditions: 
      1. weight is greater than or equal to 115 but less than 125. 
      2. X is even 
      3. Donation is in the range 4000-5000 or guest is 1 
      4. Ch is an uppercase letter 
   e) In the following program, if the value of N given by the user is 15, what maximum and minimum values the program could possibly display? 
      #include <iostream.h> 
      #include <stdlib.h> 
      void main()
{  
  int N,Guessme;  
  randomize();  
  cin>>N;  
  Guessme=random(N)+10;  
  cout<<Guessme<<endl;  
}

f) What will be the output of the following code fragment?  
int year;  
cin>> year;  
if((year % 100==0) && (year%400==0))  
  {  
    cout<<"Leap";
  }
else  
  cout<<" Not a century year;  
    If the input given is  
    i) 2000  
    ii) 1900  
    iii) 1971  
    iv) 2012

g) What will be the sizes of the following constants: ‘\a’, “\a”, “Apeejay’s”, ‘\’.

3.

a) What is wrong in the following code.
   (i) num=4;  
       while(num<10)  
       {  
         eggs=num*12;  
         cout<<eggs;  
       }
   (ii) int i=9
       while((i<10)&&(i>24))  
       cout<<" here I am in the loop";
       i--;

b) Predict the output:
   i) if(0)  
      cout<< “Have you answered correctly”;  
      cout<< “ It will be known after the exam”;
   ii) for (int a=10; a>=0; a-=3);  
      cout<<a;  
   iii) for( int outer=1; outer<10; outer+=4)
     {  
       for(int inner = 1; inner<=outer; inner+=2)
       cout<<outer<< " "<<inner<<endl;
     }
   iv) //version 1
      int f=1,i=2;  
      while(++i<7)  
      f*=i;
   //version 2
      int f=1,i=2;  
      do{
      f*=i;
      }
cout<<f;         }while(++i<7)  
cout<<<<f;


c) Predict the output of the following code fragment when value is input as (i) 6, (ii) 0:
   int a, b =3;
   cin>> a;
   if (a)
       b = ++a -1;
   cout<< “ a=” << a << endl;
   cout<< “ b=” << b << endl;

d) Consider the following array declarations: Find the number of elements and size in bytes in each of the following cases:
   int X [50];  long Y [10];  char Z[18];  short B[20];

e) Correct the following code so that it is fully functional:
   value=4;
   do{
       total+=value;
       cout total;
       while value<=8;
   
   f) Write equivalent while loop for the following for loop:
   const int SZ=25;
   for( int i=0,sum=0;i<SZ;i++)
       sum+=i;
       cout<< sum;

4.

a) WAP to calculate simple interest with 10% rate if time is greater than 2 yrs otherwise calculate simple interest with 5%.
b) Write a C++ program to print day of the week corresponding to the number (1-7) entered using switch case statement.
c) Write a C++ program to check a number for Armstrong or not. An Armstrong number is one in which sum of cube of every digit is equal to no. E.g. (1)3+(5)3+(3)3=153 is an armstrong no.
d) Write a c++ program that accepts a string and checks whether each character is an alphabet or not. If it is an alphabet, then toggle the case.
e) Write a program to sort an array on N numbers in ascending order.
f) Write a program to accept a number and display its factorial.
g) Write a program to print the following series:
   3   6   9   12.............33.
h) Write a program to find the sum of the following series:
   s = x+ 2x/2! +3x/3!+ 4x/4!..........................