INDIAN SCHOOL DARSAIT
SAMPLE PAPER II FOR SECOND TERM EXAMINATION
COMPUTER SCIENCE (083)

Class: XI   Max. Marks: 70

General Instructions:

   (i)   ***All questions are compulsory.***

1. a) What are variables in C++. State any 4 rules for naming the variables.   2
   b) What is the difference between increment and decrement operator. Also state how the evaluation takes place while cascading them.   2

   c) Give the output for the following expression: 3
      (i)   not12==12
      (ii)   true and not false
   d) Write a program to check if a given number is positive or negative using a conditional operator.   3

2. a) Explain do…while loop with an example.   2
   b) Convert the following code snippet to do..while loop in C++   2
   ```
   void main(){
   int k=10,sum=0;
   while(k>90){
    sum+=100;
   k+=10;}
   cout<<sum;
   getch();}
   ```
   c) Write a program to print the reverse of a given number.   3
   d) Write a menu driven program in C++ to perform the following operations,   3
      1. Factorial of a number
      2. Fibonacci series
      3. Sum of series 1+2+3…N

3. a) What is an array? Write the C++ statement to declare a 1D array with 10 elements.   2
   b) Write a C++ program to find the sum and average of one dimensional integer array.   2
   c) Write a C++ program to print only that number ending with 3 in a 1D array.   3
   d) Write a C++ program to accept a 1D array of size N and display the occurrence of a given number from the user.   3

4. a) Write C++ program to accept a MxN matrix and display all the positive elements.   2
   b) Write C++ program to accept a MxN matrix and print sum of all the elements in the upper triangle.   4
   c) Write a C++ program to accept two matrices of size MxN and PxQ, add both the matrices and display the sum of the resultant matrix.   4

5. a) Name the functions belonging to <string.h> header file.   2
   b) Write a C++ program to count the number of lowercase and uppercase letters in a string.   2
   c) Find and write the output of the following C++ program code: 3
   ```
   int main(){
      char name[] = "CoMPutER";
      for (int x = 0; x < strlen(name); x++)
        if (islower(name [x]))
          name [x] = toupper(name[x]);
        else
          if (isupper(name[x]))
            if (x % 2 == 0)
              name[x] = tolower(name[x]);
   ```

```
        else
            name[x] = name[x-1];
        cout << name;
        return 0;
    }
```

d) Write a C++ program to toggle the case of the string (i.e if the letter is lowercase then change to uppercase and vice versa.) also display the string.   3

6. a) What are the different types of arguments in a user defined function?   1
    b)   Explain what a function prototype is and function definition in C++, with an example.   3
    c) Find and write the output of the following C++ program code: 3
```
int global = 10;
void func(int &x, int y){
    x = x - y;
    y = x * 10;
    cout << x << ", " << y << '\n';}
int main(){
    int global = 7;
    func (::global, global);
    cout << global << ", " << ::global << '\n';
    func(global, ::global);
    cout << global << ", " << ::global << '\n';}
```
    d) Explain call by reference with an example.   3

7. a) Which of the following is a properly defined structure?   1
        a) struct {int a;}
        b) struct a_struct {int a;}
        c) struct a_struct int a;
        d) struct a_struct {int a;};
    b) Create a structure Employee with data member's eno, ename, and salary. Declare an object and assign value to it.   2
    c) Find and write the output of the following c++ program code: 3
```
struct MyBox{int length, breadth, height;};
void dimension (MyBox M){
        cout << M.length << "x" << M.breadth << "x";
        cout << M.height << endl;}
int main (){
        MyBox B1 = {10, 15, 5}, B2, B3;
        ++B1.height;
        dimension(B1);
        B3 = B1;
        ++B3.length;
        B3.breadth++;
        dimension(B3);
        B2 = B3;
        B2.height += 5;
        B2.length--;
        dimension(B2);}
```
    d) Create a structure Candidate (cno,cname,age). Write a C++ program to accept details of N candidates and display all those candidates whose age is between 10to 19. If no record found display 'No Candidate Found'.   4