Roll Number			

SET   C

INDIAN SCHOOL MUSCAT
FIRST TERM EXAMINATION
COMPUTER SCIENCE

CLASS: XI   Sub. Code: 083   Time Allotted: 3 Hrs

30.09.2018   Max. Marks: 70

General Instructions:
- **Answer all questions.**
- **Answer all the subdivisions of a question in sequence.**
- **Programming language is C++.**
- **Write programs neatly and clearly.**

1. a. What is a Cache memory? Why it is considered crucial for a microprocessors performance?   1

   b. What do you mean by Bluetooth? Explain.   1

   c. What is the difference between CISC and RISC Computers?   1

   d. Explain Parallel Port.   1

   e. What is the difference between RAM and ROM?   1

   f. What are the basic characteristics of a Microprocessor?   1

   g. What do you mean by a port in a computer? Explain InfraRed Port.   2

   h. Write a note on: 2
      i) Blu Ray Disc   ii) Hard Disks

2. a. What does the file iostream.h consist of?   1

   b. What do you mean by cascading of I/O operators? Give an example.   2

   c. What is the difference between a keyword and an identifier?   2

3. a. Consider the following two C++ statements. Are they equivalent? Explain.   1
      char x = 'A' ;
      char x = 65 ;

b. In how many ways can a variable be declared in C++? Give examples.   2

c. Define the following terms: 2
        i) Data type modifier   ii) Reference variable

4. a. What do you mean by implicit and explicit type conversion? Explain.   1

b. Use conditional operator, to represent the following in C++   1
        If amount>30000, tax=5000 otherwise tax=2500.

c. Given the following expressions: 2
        (a) val = 80   (b) val == 80
        i)   How are these two different?
        ii)   What will be the result of (a) and (b) if the value of val is 90 initially?

d. Construct logical expressions to represent the following conditions: 2
        i) salary is greater than or equal to 30000 but less than 35000
        ii) x is even and more than 50.

e. Write the output of the following: 2
        i)   int a, b, c=12;
        a=(b=7, b+2);
        cout<< "A=" <<a<< '\n'<< "B=" <<b;
        ii)   int a=5;
        int b =++a + 50;
        int c = a-- + 40;
        cout<<"b=" <<b << "\n" << "c=" <<c;

f. Write the corresponding C++ expressions for the following mathematical expressions: 2
        i) $\sqrt{\tan^{-1} a - \cos a + e^x}$

        ii)   -b + $\sqrt{(b^2 - 4ac)}$ / 2a

5. a. What is meant by exit-controlled loop? Which C++ loops are exit-controlled?   1

b. Briefly explain goto statement in C++ with suitable example.   1

c. What is the significance of a break statement in a switch statement? Explain with an   2
    example.

d. Rewrite the following code using while loop: 2
    int x, sum;
    for(x=5, sum=0; x<25; x+=5)
    sum+=x;
    cout<<"sum= "<<sum;

e. Predict the output of the following C++ program: 2
```
#include<iostream.h>
void main()
{
for(int  i=0;  i<2;  i++)
{ for(int j=1;  j<=12;  j=j+3)
 cout<< j << " ";
 cout<<endl;
}}
```

f. Rewrite the following program after removing the syntactical error(s), if any.   2
 Underline each correction.
```
#include<iostream.h>
void main( )
{ int n1=5;
do
{ n2 =* n1;
 cout<n2;
} while(n1<10) }
```

g. Rewrite the following code fragment using switch…case statement :   2
```
        char gr;
        if (gr=='A')
           cout<<"Grade A";
         else if (gr=='B')
           cout<<"Grade B";
         else if (gr=='C')
           cout<<"Grade C";
         else
           cout<<"Fail";
```

6. a. Write a program to input three integers and print the smallest of the three.   3

b. Write a program to print the following series.   3
    1   -4 7 -10 ………… .-40

c. Write a C++ program to generate the following pattern: 3
5 4 3 2 1
5 4 3 2
5 4 3
5 4
5

d. Write a program to print sum of even numbers and sum of odd numbers from a list of   3
numbers entered by the user. The list terminates when the number entered is zero.

7. a. Write a program to accept monthly salary from the user. Find and display Bonus with   4
the help of following rules:

Monthly Salary	Bonus
50001 onwards	30% of Monthly Salary
30001 - 50000	20% of Monthly Salary
10001 – 30000	10% of Monthly Salary
0 – 10000	5% of Monthly Salary

b. Write a menu driven Program in C++ which displays the following menu: 4

MENU

1. Check positive or negative
2. Display the factors
3. Exit

The Program reads a choice (1, 2 or 3) from the user and performs the following :

If the user enters a choice 1, read a non zero integer from the user and check if it is positive or negative.

If the choice is 2, read an integer from the user and display all its factors.

If the choice is 3, the Program terminates.

Any other choice should display an error message.

The menu should keep on displaying till the user wants it .

c. Write a program to accept the value of x and n and display the sum of the following   4
series:

$$x + \frac{x^2}{2!} + \frac{x^3}{3!} + \frac{x^4}{4!} \ldots \ldots \ldots \frac{x^n}{n!}$$

d. Write a program to accept an integer and check whether it is an Armstrong number or   4
not and display proper message as output.

e.g . 153 is an Armstrong number, ($153 = 1^3 + 5^3 + 3^3$)

End of the Question Paper