

CLASS IX

SAMPLE PAPER

COMPUTER SCIENCE-083

Time: 3 hours

Marks: 70

Instructions:

1. All Questions are compulsory
 2. Programming language: c++
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Q1.

- a. Differentiate between Data Abstraction and Data Encapsulation. Give suitable examples. 2
- b. What do you understand by polymorphism a OOPs concept? Give example. 2
- c. What are Base class and Derived class? How is this related to derived class? 2
- d. What are keywords? What are comments and explain its types. 3
- e. What are predefined stream objects in C++? 1
- f. What are syntax and logical errors? Quote example. 2

Q2.

- a. Explain conditional operator in comparison with alternative if statement.
Give an example. 2
- b. What will be the result of the following expression? Show the order of evaluation.
a=3, b=6, c=4, d=2 1

$a + b > c \ \&\& \ b - c < d \ || \ b + d > a + c$

- c. Explain unary, binary and ternary operators with example. 3
- d. Explain type conversions and Data type modifiers with examples. 4
- e. Explain the order of precedence of logical and relational operators. 2

Q3.

- a. What is the difference between “while” & “do while” loop? 1
- b. Draw flow diagram of while loop. 2
- c. Differentiate between break & continue statement with an example. 2
- d. Find the error(s) from the following code segment and rewrite the corrected code underlining the correction made. 3

```
# include (iostream.h)
void main ( )
int X,Y;
cin >> X;
for (Y = 0,Y < 10, Y++)
if X == Y
cout << Y + X;
else
cout >> Y;
```

- e. Convert the following code segment into switch case construct. 2

```
int ch;
cout<<"enter your choice(1 to 3)";
cin >> ch;
```

```

if ( ch == 1 ) cout << " Laptop " ;
else if ( ch == 2 ) cout << " Desktop " ;
else if ( ch== 3 ) cout << " Notebook " ;
else cout << " Invalid Choice " ;

```

Q4.

- a. Name the header files for the following code. 1

```

char mpass[7] = "Master" , npass[7] ;
int ctr = 0;
cout << " enter your password name: " ;
cin >> npass;
cout << "HELLO" << setw(7) << "World" ;
ctr = strcpy ( mpass , npass );
cout << ctr;
if ( ctr == 0 )
cout << "correct password" ;
else
cout << " incorrect password " ;

```

- b. Write a program to swap two numbers using call by value and call by reference methods. 2

- c. How does a function prototype differ from a function header in a function definition? What will be the output of the following code? 2

```

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

void Execute (int &X, int Y=200)

```

```

{
    int Temp = X + Y;
    X += Temp;
    if (Y != 200)
        cout << Temp << " " << X << " " << Y << endl;
}

void main( )
{
    int A = 50, B = 20;
    Execute ( B );
    cout << A << " " << B << endl;
    Execute ( A, B );
    cout << A << " " << B << endl;
    getch();
}

```

- d.** Explain static variable with a program. 2
- e.** What are global and local variables? Give examples. 1
- f.** Predict the output of the following: 2
- i. `cout << strcat ("ABC", "XYZ");`
 - ii. `int ch = toupper ('b'); cout << ch;`
 - iii. `int y = strlen ("INDIA"); cout << y;`
 - iv. `int turn = random (4) + 5;`

What will be the max and min value assigned to the variable *turn*?

Q5.

a. How are strings manipulated in C++? Support your answer with examples. **2**

b. Give output of the following: **1**

```
int arr [6] = {1, 4 , 5, 9, 13, 91}, flag;
for ( int j = 0; j < 6 ; j++)
{
    flag = 1;
    if ( arr [ j ] == 1 )
        cout << arr [ j ] << "abcdef" << endl;
    else if (arr [j] > 1)
    {
        for ( int g = 2; g <= arr [ j ] / 2; g ++ )
        {
            if ( arr [j] % g == 0)
            {
                flag = 0;
                break;
            }
        }
        if ( flag == 1)
            cout << arr [j] << endl;
    }
}
```

c. Write a function to print the upper and lower triangle of a matrix. **2**

Input: 1	2	3	output:	1	2	3
4	5	6		4	5	6
7	8	9		7	8	9

- d. Give logic that doubles every element of a 1-D array and for searching an element in 1-D array using linear search technique. 2
- e. Explain the concept of matrix multiplication and write a function to multiply two matrices. 3
- f. Is it necessary to declare the array along with the size? If not, justify your answer with the syntax for 1 D and 2 D array (both char and int data type). 2

Q6.

- a. How is a structure different from an array? Explain with example. 2
- b. Declare a structure that can store the data of a country. This data will include the name of the country, the name of its president and his/her age in years. Define an array that contains ten variables of this structure. 2
- c. What is a self referential structure? What purpose we use typedef keyword in c++? Give example. 3
- d. Write a function that takes a blank structure as argument and returns the structure with the values that are input by user. The statements to take values from the user should be in function. The main program (calling) should display the value as returned by the function. The structure should be able to store the details of a salesman like salesman number, name & the amount due to be paid to him as commission by company. Use appropriate identifiers and data types. 3
- e. What will be the output of the following code, if it compiles successfully? If you think it will not compile, give reason. 2

```

void main( )
{
    clrscr ( );
    struct age
    {
        int age;
    };
    age age;
    float age;
    age. age =16;
    cout << “ \n \t Age:” << age. age;
    getch ( );
}

```

f. Find the output of the following C++ code:

2

(Assume all header files are already included in the program)

```

typedef char Text [80] ;
void Jumbleup ( Text T )
{
    int L = strlen ( T );
    for ( int C = 0; C < L-1; C += 2)
    {
        char CT = T [C] ;
        T [ C ] = T [ C + 1] ;
        T [ C + 1] = CT ;
    }
    if ( T [ C ] >= 'M' && T [ C ] <= 'U' )
        T [ C ] = '@' ;
}

```

```
void main ( )
{
    Text str = "HARMONIOUS";
    Jumbleup (str) ;
    cout << str << endl ;
    getch ( ) ;
}
```

Arundhati .L.B : arunalokesh30@gmail.com

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