

50 Sure Shot Questions

Class XII

Subject: Computer Science

Type: Short Question

1.	What is the difference between automatic type conversion and type casting? Also, give a suitable C++ code to illustrate both.
2.	What is the difference between call by value and call by reference? Give an example in C++ to illustrate both.
3.	What is the benefit of using default parameter/argument in a function? Give a suitable example to illustrate it using C++ code
4.	What is the difference between #define and const? Explain with suitable example.
5.	What is the purpose of using a typedef command in C++? Explain with suitable example.
6.	Which C++ header file(s) will be essentially required to be included to run/ execute the following C++ code? <pre>void main() { int Eno=123, char Ename[]="Rehan Swamp"; cout<<setw(5)<<Eno<<setw(25)<<Ename<<endl; }</pre>
7.	. Write the names of the header files, which is/are essentially required to run/execute the following C++ code: <pre>void main() { char CH,Text[]="+ve Attitude"; for(int I=0;Text[I]!='\0';I++) if(Text[I]=='') cout<<endl; else { CH=toupper(Text[I]); cout<<CH; } }</pre>
8.	What do you mean by self-referential structure.
9.	Observe the following C++ code carefully and rewrite the same after removing all the syntax error(s) present in the code. Ensure that you underline each correction in the code. Important Note: <ul style="list-style-type: none"> All the desired header files are already included, which are required to run the code. Correction should not change the logic of the program. <pre>#define Change(A,B) 2*A+B; void main() { Float X,Y,F; cin>>X>>Y; F=Change[X,Y]; cout<<"Result:"<<F<<endl; }</pre>
10.	Study the following program and select the possible output from it: <pre>#include<iostream.h></pre>

	<pre>#include<stdlib.h> void main() { randomize(); int Points; Points = 100 + random(4); for (int P=Points; P>=100;P--) cout<<P<<"#"; cout<<endl; } (i) 103#102#101#100# (ii) 100#101#102#103# (iii) 100#101#102#103#104# (iv) 104#103#102#101#100#</pre>
11.	<p>Go through the C++ code shown below, and find out which of the following is not possible output or outputs from the suggested Output options(i) to (iv), Also write the minimum and maximum values, which can be assigned to the variable MyNum.</p> <pre>#include<iostream.h> #include<stdlib.h> void main() { randomize(); int MyNum,Max=5; MyNum=20+random(Max); for (int N=MyNum;N<=25;N++) cout<<N<<"*"; } (i) 20*21*22*23*24*25 (ii) 22*23*24*25 (iii) 23*24 (iv) 21*22*23*24*25</pre>
12.	What is copy constructor? Give an example in C++ to illustrate copy constructor.
13.	What do you understand by Polymorphism? Also, give an example in C++ to illustrate the same.
14.	Difference between Constructor and Destructor function with respect to Object Oriented Programming.
15.	. What is the difference between the members in private visibility mode and the members in protected visibility mode inside a class? Also, give a suitable C++ code to illustrate both.
16.	What is "this" pointer? Give an example to illustrate the use of it in C++.
17.	Define the term Data Hiding in the context of Object Oriented Programming. Give a suitable example using a C++ code to illustrate the same.
18.	<p>Answer the questions (i) and (ii) after going through the following class:</p> <pre>class Exam { int year; public: Exam(it y) { year=y; } //Constructor 1 Exam(Exam &t) //Constructor 1 };</pre> <p>(i) Create an object, such that it invokes Constructor 1. (ii) Write complete definition for constructor 2.</p>
19.	<p>Answer the question (i) and (ii) after going through the following program:</p> <pre>#include<iostream.h> #include<string.h> class Retail</pre>

```

{
    char Category[20];
    char Item[20];
    int Qty;
    float Price;
    Retail()          //Function 1
    {
        strcpy(Category,"Cereal");
        strcpy(Item,"Rice");
        Qty=100;
        Price=25;
    }
public:
    void Show()        //Function 2
    {
        cout<<Category<<"="<<Item<<":"<<Qty<<"@"<<Price<<endl;
    }
}
void main()
{
    Retail R           //Statement 1
    R.Show();          //Statement 2
}

```

- (i) Will statement 1 initialize all the data members for object R with the values given in the Function 1? (Yes OR No). Justify your answer suggesting the correction(s) to be made in the above code.
- (ii) What shall be the possible output when the program gets executed? (Assuming, if required – the suggested correction(s) are made in the program)

20.	Evaluate the following postfix notation of expression: (Show status of Stack after each operation) False, True, NOT, OR, True, False, AND, OR
21.	Write an equivalent infix expression for <i>a, b, AND, a, c, AND, OR</i> .
22.	Evaluate the following postfix notation of expression: 25 8 3 - / 6 * 10 +
23.	Observe the program segment given below carefully and fill the blanks marked as statement 1 and statement 2 using seekg(), seekp(), tellp(), and tellg() functions for performing the required task. <pre> #include<fstream.h> class ITEM { int Ino; char Iname[20]; float price; public: void ModifyPrice(); //the function is to modify price of a particular ITEM }; void Item::ModifyPrice() { fstream File; File.open("ITEM.DAT",ios::binary ios::in ios::out); int CIno; cout<<"Item no to modify price:"; cin>>CIno; </pre>

```

while(File.read((char*)this,sizeof(ITEM)))
{
    if(CIno==Ino)
    {
        cout<<"present Price:"<<price<<endl;
        cout<<"changed Price:";
        cin>>Price;
        int Filepos= _____; //statement 1
        _____; //statement 2
        File.write((char*)this,sizeof(ITEM)); //Re-writing the record
    }
}
File.close();
}

```

- 24.** Fill in the blanks marked as Statement 1 and Statement 2, in the program segment given below with appropriate functions for the required task.

```

class Club
{
    long int MNo; // Member Number
    char MName[20]; // Member Name
    char Email[30]; //Email of Member
public:
    void Register(); // Function to register member
    void Disp(); // Function to display details
    void ChangeEmail() // Function to change Email
    {
        cout<<"Enter Changed Email:";
        cin>>Email;
    }
    long int GetMno() { return MNo;}
};

void ModifyData()
{
    fstream File;
    File.open("CLUB.DAT",ios::binary|ios::in|ios::out);
    int Modify=0,Position;
    long int ModiMno;
    cout<<"Mno - whose email required to be modified:";
    cin>>ModiMno;
    Club CL;
    while(!Modify && File.read((char*)&CL,sizeof(CL)))
    {
        if(CL.GetMno()==ModiMno)
        {
            CL.ChangeEmail();
            Position=File.tellg()-sizeof(CL);
            //Statement 1: To place file pointer to the required position
            _____;

            //Statement 2: To write the object CL on to the binary file
            _____;
            Modify++;
        }
    }
}

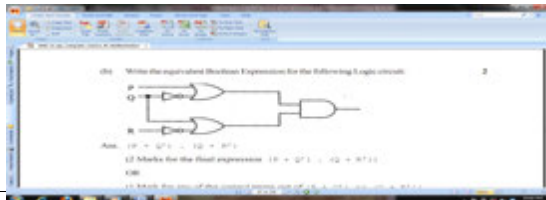
```

```

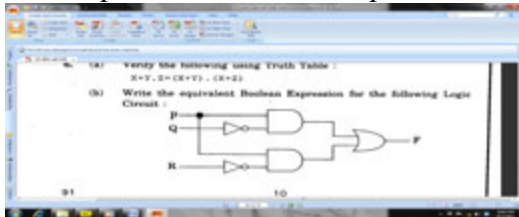
if(Modify)
    cout<<"Email changed....."<<endl;
else
    cout<<"Member not found...."<<endl;
File.close();
}

```

25. What are candidate keys in a table? Give a suitable example of candidate keys in a table.
26. What do you understand by Selection & Projection operation in relational algebra?
27. Give a suitable example of a table with sample data and illustrate Primary and Alternate Keys in it.
28. Verify the following using Truth Table:
 $X+Y.Z=(X+Y).(X+Z)$
29. Verify $X'Y + X.Y' + X'.Y' = (X'+Y')$ using truth table.
30. Verify the following using truth table:
 (i) $X.X'=0$
 (ii) $X+1=1$
31. State and verify Distributive Law using truth table.
32. Write the equivalent Boolean Expression for the following Logic circuit:



33. Write the equivalent Boolean Expression for the following Logic Circuit:



34. Draw a Logical circuit Diagram for the following Boolean Expression
 $X'.(Y' + Z)$

35. Write the POS form of a Boolean Function H, which represented in a truth table as follows:

A	B	C	H
0	0	0	0
0	0	1	1
0	1	0	1
0	1	1	1
1	0	0	1
1	0	1	0
1	1	0	0
1	1	1	1

36. Write the SOP form of a Boolean function F, which is represented in a truth table as follows:

U	V	W	F
0	0	0	1
0	0	1	0
0	1	0	0
0	1	1	1
1	0	0	0
1	0	1	0
1	1	0	1

	1	1	1	1
37.	Write the Product of Sum from of the function $F(X, Y, Z)$ for the following truth table representation of F:			
	X	Y	Z	F
	0	0	0	1
	0	0	1	0
	0	1	0	0
	0	1	1	1
	1	0	0	0
	1	0	1	0
	1	1	0	1
	1	1	1	1
38.	Express $P + Q'R$ in canonical SOP form.			
39.	What is the difference between STAR topology and BUS topology of network?			
40.	What was the role of ARPANET in the Computer Network?			
41.	In networking, what is WAN? How is it different from LAN?			
42.	What out of the following, will you use to have an audio-visual chat with an expert sitting in a far-away place to fix-up a technical issue? (i) VoIP (ii) email (iii) FTP			
43.	Write two advantages of using an optical fiber cable over an Ethernet cable to connect two service stations, which are 200 m away from each other.			
44.	Write two characteristics of Wi-Fi.			
45.	What is VoIP?			
46.	. When do you prefer XML over HTML and why?			
47.	<p>Study the following program and select the possible output(s) from the options (i) to (iv) following it. Also, write the maximum and the minimum values that can be assigned to the variable NUM.</p> <p>Note :</p> <ul style="list-style-type: none"> – Assume all required header files are already being included in the program. – random(n) function generates an integer between 0 and n – 1. <pre> void main() { randomize(); int NUM; NUM=random(3)+2; char TEXT[]="ABCDEFGHGIJK"; for (int I=1;I<=NUM; I++) { for(int J=NUM; J<=7;J++) cout<<TEXT[J]; cout<<endl; } } </pre> <p>(i) FGHI (ii) BCDEFGH (iii) EFGH (iv) CDEFGH FGHI BCDEFGH EFGH CDEFGH FGHI EFGH FGHI EFGH</p>			
48.	<p>Observe the following C++ code and answer the questions (i) and (ii) :</p> <pre> class Traveller { </pre>			

```

long PNR;
char TName[20];
public :
Traveller()                                //Function 1
{cout<<"Ready"<<endl;}
void Book(long P,char N[])                 //Function 2
{PNR = P; strcpy(TName, N);}
void Print()                               //Function 3
{cout<<PNR << TName <<endl;}
~Traveller() //Function 4
{cout<<"Booking cancelled!"<<endl;}
};

```

(i) Fill in the blank statements in Line 1 and Line 2 to execute Function 2 and Function 3 respectively in the following code :

```

void main()
{
    Traveller T;
    _____ //Line 1
    _____ //Line 2
} //Stops here

```

(ii) Which function will be executed at } //Stops here ? What is this function referred as ?

49.	Write the definition of a function Alter(int A[], int N) in C++, which should change all the multiples of 5 in the array to 5 and rest of the elements as 0.
50.	Convert the following infix expression to its equivalent Postfix expression, showing the stack contents for each step of conversion. $X / Y + U * (V - W)$