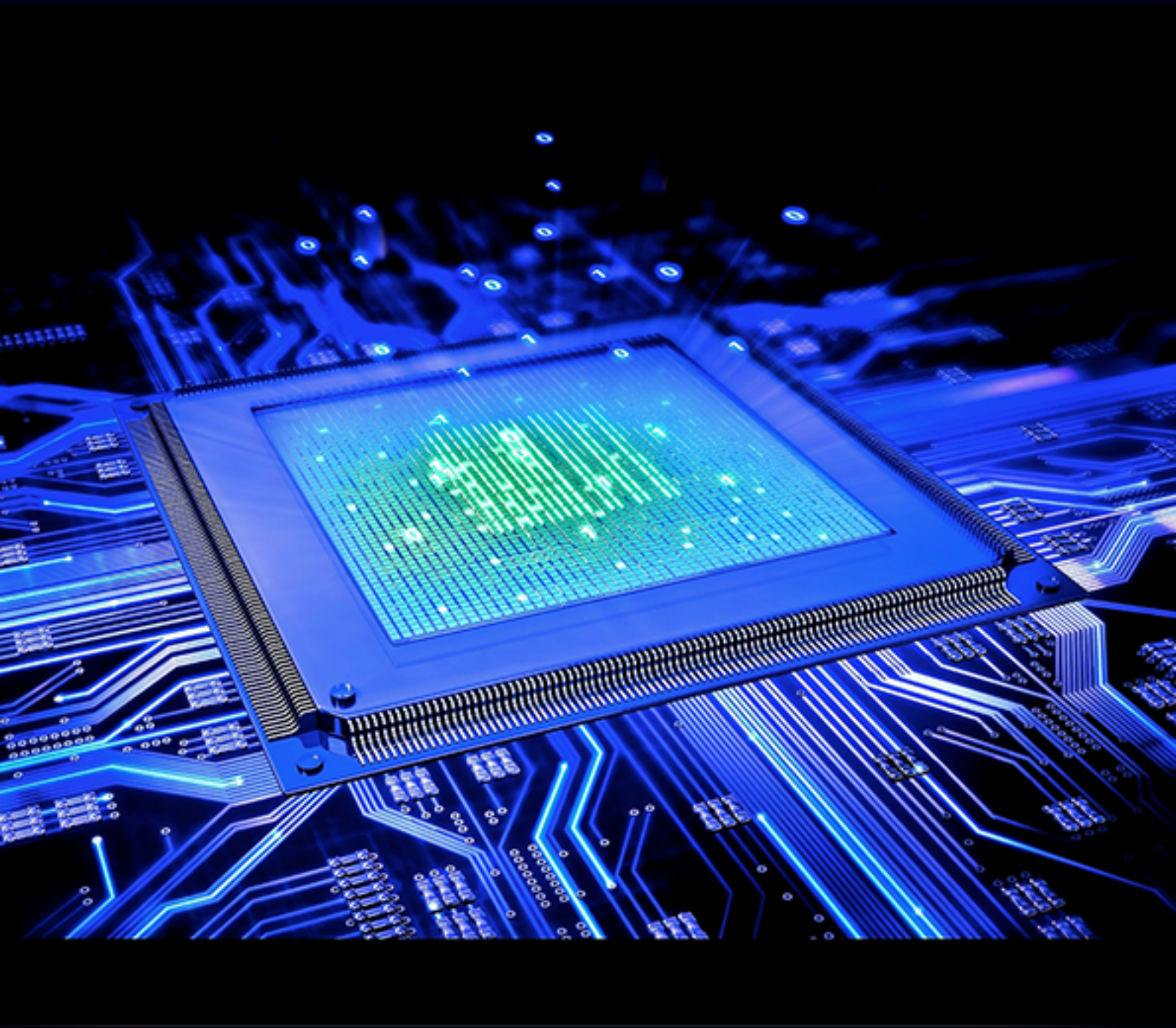
Cbse Class 12



Sample Question Papers Computer Science With Solutions

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CLASS XII –COMMON PRE-BOARD EXAMINATION

Subject: COMPUTER SCIENCE (083) Time Allotted: 3 Hrs. Max. Marks: 70

Note. (i) All questions are compulsory.

(ii) Programming Language: C+ +

Q1 (a) Differentiate between Actual & Formal Parameter with the help of examples. 2

(b) Which header file(s) will be essentially required to be included to execute the following C++ code? 1

```
void main( )
{
int Eno = 123;
char EName[ ] = " CBSE AISSCE";
cout<<setw(5)<<Eno<<setw(25)<<EName<<endl;
}
```

(c) Rewrite the following code after removing syntactical error(s), if any. Underline each correction made. 2

```
#include<iostream.h>
void main( )
{
one = 10, two = 20;
call(one, two);
call(two);
}
void call(int n1, int n2 = 20)
{
n1 = n1 + n2
cout<<n1>>n2;
}
```

(d) Go through the C++ Code shown below & find the possible output from the suggested output options (i) to (iv). 2

```
#include<iostream.h>

#include<stdlib.h>

const int LOW = 25;

void main( )

{

randomize( );

int num, point = 5;

for(int i = 1; i<= 4; i++)

{

num = LOW + random(point);

cout<<num<<":" ;

point- - ;

}

}
```

i) 29 : 26 : 25 : 28: ii) 24 : 28 : 25 : 26 iii) 29 : 26 : 24 : 28 iv) 29 : 26 : 25 : 26 :

(e) Find the output of the following program: 2

```
#include<iostream.h>

void switch(int a[ ], int n, int split)

{

for(int k = 0; k < n; k++)

if(k < split)

a[k] += k;

else

a[k] *= k;

}
```

```
void display(int a[ ], int n)
{
for(int k = 0; k < n; k++)
   (k % 2 = = 0) ? cout<<a[k]<<"%" : cout<<a[k]<<endl;
}
void main( )
{
int h[ ] = {30, 40, 50, 20, 10, 5};
switch(h, 6, 3);
display(h, 6);
}
```

(f) Find the output of the following program: 3

```
#include<iostream.h>
struct Package
{
int L, b, h;
};
void occupy(Package M)
{
Cout<<M.L<<"x"<<M.b<<"x"<<M.h<<endl;
}
void main( )
{
 Package B1 = { 100, 150, 50}, B2, B3;
 ++B1.L;
occupy(B1);
 B3 = B1;
```

```
 ++B3.b;

 B3.b++;

occupy(B3);

 B2 = B3;

 B2.b += 50;

 B2.h- -;

occupy(B2);

}
```

Q2(a) What is an object with reference to Encapsulation? State the different ways to assign values to the data members of an object. 2

(b) Answer the questions (i) and (ii) after going through the following class Complex: 2

```
{

int img;

int real;

public:

Complex();  //function 1

Complex(int , int ); //function 2

   ~Complex(); //function 3

};
```

(i) What is function3 known as? When will it be invoked in a class?

(ii) Name the function 1 and function 2 and expand the function 2.

(c) Define a class Ticket in C++ with following description: 4

Private members

- Tno of type integer (Ticket number)
- Name of type string(Passenger name)
- Distance of type integer (distance to be travelled in kms)
- Berth of type string(“SL” , “2AC” , “3AC”)
- Psngr of type integer(no of passengers)
- Fare of type float(Ticket fare)
- A member function calcFare() to calculate the fare as per the following

Berth	Rate per km
SL	10
3AC	25
2AC	35

Service charge of Rs.200/- for 2AC and 3AC

Public members

- A member function Book() to enter Tno,Name, Distance, berth , Psngr

A member function Print() to display Tno, Name, Distance, berth, Psngr and call calcFare() to calculate the journey fare.

(d) Consider the following and answer the following questions: 4

```
class ADDRESS
{
        char Hno[10];
char City[15];
protected:
        long Pincode;
public:
char phone[11];
        ADDRESS();
        void get();
        void show();
};
class OFFICE
{
char Name[15];
char Manager[20];
char code[10];
public:
int totalEmp;
```

```
OFFICE();
void Input();
void Output();
};
class EMPLOYEE: private ADDRESS, public OFFICE
{
        int Icode;
char Ename[25];
        float Salary;
public:
char Dept[15];
        EMPLOYEE();
        void getEmp();
        void showEmp();
};
```

(i) Name the type of inheritance is shown in above example.

(ii) Write the names of all the member functions which are accessible from objects of class EMPLOYEE.

(iii) Write the names of all the members which are accessible from member functions of class EMPLOYEE.

(iv) How many bytes will be allocated to an object belonging to class EMPLOYEE?

Q3 (a) Write a function in C++ which accepts an integer array & its size as arguments and assigns the elements into a 2D array of integer in the following format. 3

e.g. If A[ ] contains 1, 2, 3, 4 Resultant Array will be :

1	0	0	0
1	2	0	0
1	2	3	0
1	2	3	4

(b) An Array A[5][5] is stored in the memory with each element occupying 4 Bytes of space. Assume the Base Address of A to be 1000, compute the address of B[2][4], when the array is stored: (i) Row Wise (ii) Column Wise. 3

(c) Write a function in C++ to delete an element from a dynamically allocated Stack of Student implemented with the help of following structure: 4

```
struct Student

{

int Rollno;

char Name[20];

 Student * Link;

};
```

(d) Write a function C++ which accepts 2D integer array & its size as arguments and displays the elements which lies on the Diagonals 2

e.g. If the array is :

20	40	10
40	50	2
60	10	20

Output should be:

Diagonal 1: 20 50 20

Diagonal 2: 10 50 60

(e) Convert the following INFIX expression to equivalent POSTFIX expression. Show status of Stack after every step of evaluation 2

A + B * (C – D) / E

Q4 (a) Fill in the blanks marked as Statement 1 and statement 2 in the below code according to the context: 1

```
#include <fstream.h>

class Customer

{

int Cno;

char Cname[20];



public:

    //Function to count the total number of records
```

```
int Countrec();
};
int Customer::Countrec()
{
        fstream f;
        f.open("Cust.dat",ios::binary|ios::in);
        _______________________ //Statement 1


        int Bytes =_____________________        //Statement 2
        int count = Bytes / sizeof(Customer);
        f.close();
        return count;
}
```

(b) Write a function in C++ to count number of words starting with "amend" in the text file named as "Amendment.txt" 2

Eg:-

A contract to deliver something to a customer once a month can be amended if the customer wants it delivered once a week. Usually, everyone involved in the contract must agree to the amendment before it goes into effect. Most contracts are written with rules about amendments

The Output should be

No of words starting with amend : 3

(c) Following is the class of each record in a data file named "Employee.dat": 3

```
class EMPLOYEE
{
int id;
char name[15];
char desg[10];
public:
```

```
void input();
void output();
};
```

Write a function in C++ to add a new employee's record in the file.

Q5 (a) Explain Cardinality & Degree with the help of Examples. 2

Consider following tables SENDER &RECIPIENT:

Table: SENDER

SenderID	SenderName	SenderAddress	SenderCity
ND01	R jain	2, ABC Appts	New Delhi
MU02	H Sinha	12, Newtown	Mumbai
MU15	S Jha	27/A, Park street	Mumbai
ND50	T Prasad	12, Newtown	New Delhi

Table: RECIPIENT

RecID	SenderID	RecName	RecAddress	RecCity
KO05	ND01	R Bajpayee	5, Central Avenue	Kolkata
ND08	MU02	S Mahajan	116, A Vihar	New Delhi
MU19	ND01	H Singh	2A, Andheri East	Mumbai
MU32	MU15	P K Swamy	B5, C S Terminus	Mumbai
ND48	ND50	S Tripathi	13, B1 D, MayurVihar	New Delhi

(b) Write Queries for the following statements: 4

(i) To display the name of all Senders from Mumbai.

(ii) To display the RecID, SenderName, Senderaddress, RecName, RecAddress for every Receipient.

(iii) To display Receipient details in ascending order of RecName.

(iv) To display number of Receipients from each city.

(c) Give the output of the following Queries: 2

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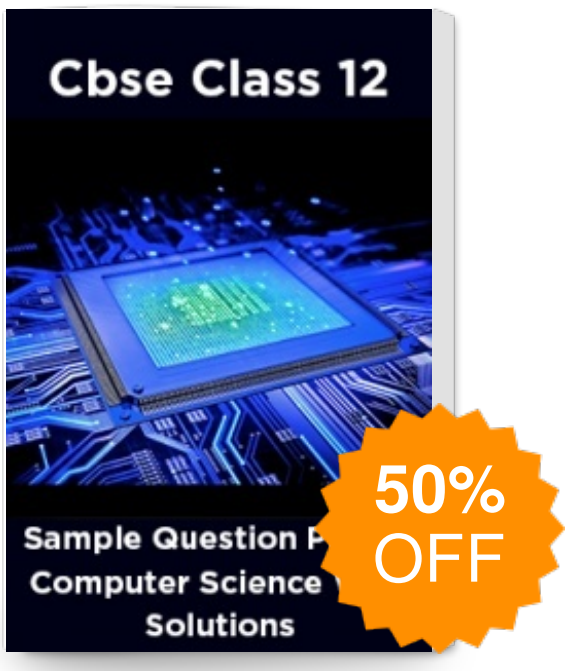

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