50 SURE SHOT QUESTIONS
(LONG ANSWER TYPE) [3 & 4 marks]

Q1. Define a class Computer in C++ with following description:

private Members:

- Processor _speed
- Price
- Processor_type

Public Members:

- A constructor to initialize the data members.
- A function cpu_input() to enter value of processor_speed.
- A function void setcostANDtype( ) to change the speed of the processor and also find the cost and type depending on the speed:

Processor_speed	Price	Processor_type
4000 MHz	Rs 30000	C2D
<4000 & >=2000	Rs 25000	PIV
< 2000	Rs 20000	Celeron

- A function cpu_output() to display values of all the data members.

Q2. Define a class BALANCED_MEAL in C++ with following description:

Private Members:

Access number	Integer
Name of Food	String of 25 characters
Calories	Integer
Food type	String
Cost	Float

AssignAccess( )-- Generates random numbers between 0 to 99 and return it.

Public Members

- A function INTAKE( ) to allow the user to enter the values of Name of Food, Calories, Food type cost and call function AssignAccess() to assign Access number.
- A function OUTPUT( ) to allow user to view the content of all the data members, if the Food type is fruit.

Q3. Define a class in C++ with following description:

Private Members

a. A data member Flight number of type integer

b. A data member Destination of type string
c. A data member Distance of type float
d. A data member Fuel of type float
e. A member function CALFUEL() to calculate the value of Fuel as per the following criteria

Distance	Fuel
<=1000	500
more than 1000 and <=2000	1100
more than 2000	2200

Public Members

- A function FEEDINFO() to allow user to enter values for Flight Number, Destination, Distance & call function CALFUEL() to calculate the quantity of Fuel
- A function SHOWINFO() to allow user to view the content of all the data members

Q4. Define a class TAXPAYER in C++ with following description:
Private members :

- Name of type string
- PanNo of type string
- Taxabincm (Taxable income) of type float
- TotTax of type double
- A function CompTax( ) to calculate tax according to the following slab:

Taxable Income	Tax%
Up to 160000	0
>160000 and <=300000	5
>300000 and <=500000	10
>500000	15

Public members :

- A parameterized constructor to initialize all the members
- A function INTAX( ) to enter data for the tax payer and call function CompTax( ) to assign TotTax.
- A function OUTAX( ) to allow user to view the content of all the data members.

Q5. Define a class HOTEL in C++ with the following description:
Private Members

- Rno //Data Member to store Room No
- Name //Data Member to store customer Name
- Tariff //Data Member to store per day charge
- NOD //Data Member to store Number of days
- CALC //A function to calculate and return amount as NOD*Tariff and if the value of NOD*Tariff is more than 10000 then as 1.05*NOD*Tariff

Public Members:

- Checkin( ) //A function to enter the content RNo,Name, Tariff and NOD
- Checkout() //A function to display Rno, Name, Tariff, NOD and Amount (Amount to be displayed by calling function CALC( )

Q6. Define a class TEST in C++ with following description:
Private Members
• TestCode of type integer
• Description of type string
• NoCandidate of type integer
• CenterReqd (number of centers required) of type integer
• A member function CALCNTR() to calculate and return the number of centers as (NoCandidates/100+1)
Public Members
• A function SCHEDULE() to allow user to enter values for TestCode, Description, NoCandidate & call function CALCNTR() to calculate the number of Centres
• A function DISPTEST() to allow user to view the content of all the data members

Q 7. Consider the following declarations and answer the questions given below :

```
class living_being
{
        char name[20];
protected:
        int jaws;
public:
        void inputdata(char, int);
        void outputdata();
}
class animal : protected living_being
{
        int tail;
protected:
        int legs;
public:
        void readdata(int, int);
        void writedata();
};
class cow : private animal
{       char horn_size;
public:
        void fetchdata(char);
        void displaydata();
};
```

(i) Name the base class and derived class of the class animal.
(ii) Name the data member(s) that can be accessed from function displaydata.

(iii)Name the data member(s) that can be accessed by an object of cow class.
(iv)Is the member function outputdata accessible to the objects of animal class.

Q8. Answer the questions (i) to (iv) based on the following code:

```
class engineering
{
private:
        char streamcode[5];
protected:
        int seats;
        void allot();
public:
         engineering();
          void streamread();
           void streamwrite();
};
class dept : protected engineering
{
      char deptname[20];
      int strength;
public:
        dept();
                void deptread();
        void deptwrite();
};
class course: public dept
{
        char coursename[20];
        float fees;
public:
        course();
        void courseread();
        void coursewrite();
};
```

(i) Which type of inheritance is shown in the above example?
(ii) How many bytes will be required by an object of the class dept and course?
(iii) Write the name of all the data members accessible from member functions of the class course.
(iv) Write the members which are accessible from the object of the class dept.

Q9. Answer the questions (i) to (iv) based on the following code :

```
class Employee
```

```
{
        int id;
        protected :
        char name[20];
        char doj[20];
        public :
        Employee();
        ~Employee();
        void get();
        void show();
};
class Daily_wager : protected Employee
{
        int wphour;
        protected :
        int nofhworked;
        public :
        void getd();
        void showd();
};
class Payment : private Daily_wager
{
        char date[10];
        protected :
        int amount;
        public :
        Payment();
        ~Payment();
        void show();
};
```

(i) Name the type of Inheritance depicted in the above example.

(ii) Name the member functions, which are accessible by the objects of class Payment.

(iii) From the following, Identify the member function(s) that can be called directly from the object of class Daily_wager class
show(), getd(), get()

(iv) Will the constructors of class Employee be copied in class Payment?.

Q10. Answer the questions (i) to (iv) after going through the following class:

```
class Sports
{
        char Category[10];
```

```
        char Date_of_Activity[10];
        char Name[20];
public:
        Sports( );
        void EnterDetails( );
        void ShowDetails ( );
};
class MohanClub : public Sports
{
protected:
        char Player_Name[30];
        char Player_Address[20];
public:
        float fees;
        MohanClub( );
        void EnterClubDetails( );
        void ShowClubDetails( );
};
class HealthClub : public MohanClub
{
        int Facility;
        char F_Name[20];
public:
        HealthClub( );
        void EnterHClubDetails( );
        void showHClubDetails( );
};
```

(i) How many bytes will be required by an object of class HealthClub and an object of class MohanClub respectively?

(ii) Write names of all the data members which are accessible from the object of class HealthClub?

(iii) Write the name of ALL the members accessible from the member function of class MohanClub.

(iv) Write the name of all the member functions which are accessible from the object of class HealthClub?

Q11. Consider the following and answer the questions given below:

```
class MNC
{
        char Cname[25]; // Company name
protected :
        char Hoffice[25]; // Head office
public :
        MNC( );
        char Country[25];
        void EnterDate( );
        void DisplayData( );
};
class Branch : public MNC
{
        long NOE; // Number of employees
        char Ctry[25]; // Country
protected:
        void Association( );
public :
        Branch( );
        void Add( );
        void Show( );
};
class Outlet : public Branch
{
        char State[25];
public :
        Outlet();
        void Enter();
        void Output();
};
```

(i) Which class's constructor will be called first at the time of declaration of an object of class Outlet?

(ii) How many bytes an object belonging to class Outlet require ?

(iii)Name the member function(s), which are accessed from the object(s) of class Outlet.

(iv)Name the data member(s), which are accessible from the object(s) of class Branch.

Q12. Consider the following declarations and answer the questions given below:

```
class vehicle
{
    int wheels;
protected:
    int passenger;
public:
    void inputdata( int, int);
    void outputdata();
};

class heavyvehicle : protected vehicle
{
    int dieselpetrol;
protected:
    int load;
public:
    void readdata( int, int);
    void writedata();
};
class bus:private heavyvehicle
{
    char marks[20];
public:
    void fetchdata(char);
    void displaydata();
};
```

(i) Name the class and derived class of the class heavyvehicle.

(ii) Name the data members that can be accessed from function displaydata()

(iii)Name the data members that can be accessed by an object of bus class

(iv)Is the member function outputdata() accessible to the objects of heavyvehicle class.

Q13. Consider the following declarations and answer the questions given below:

```
class book
{
        char title[20];
        char author[20];
        int noof pages;
public:
```

```
            void read();
            void show();
};
class textbook: private textbook
{
            int noofchapters, noofassignments;
protected:
            int standard;
          void readtextbook();
          void showtextbook();
};
class physicsbook: public textbook
{
            char topic[20];
public:
          void readphysicsbook();
          void showphysicsbook();
  };
```

(i) Name the members, which can be accessed from the member functions of class physicsbook.

(ii) Name the members, which can be accessed by an object of Class textbook.

(iii) Name the members, which can be accessed by an object of Class physicsbook.

(iv) What will be the size of an object (in bytes) of class physicsbook.

Q14. Answer the questions (i) to (iv) based on the following:

```
class PUBLISHER
{
        char Pub[12];
        double Turnover;
protected:
        void Register();
public:
        PUBLISHER();
        void Enter();
        void Display();
};

class BRANCH
{
        char CITY[20];
protected:
        float Employees;
public:
        BRANCH();
```

```
        void Haveit();
        void Giveit();
};

class AUTHOR:private BRANCH,public PUBLISHER
{
        int Acode;
    char Aname[20];
        float Amount;
public:
        AUTHOR();
        void Start();
        void Show();
};
```

(i) Write the names of data members, which are accessible from objects belonging to class AUTHOR.

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

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

(iv) How many bytes will be required by an object belonging to class AUTHOR?

Q15. Answer the questions (i) to (iv) based on the following:

```
class CUSTOMER
{
        int Cust_no;
        char Cust_Name[20];
protected:
        void Register();
public:
        CUSTOMER( );
        void Status( );
};
class SALESMAN
{
        int Salesman_no;
        char Salesman_Name[20];
protected:
        float Salary;
public:
        SALESMAN( );
        void Enter( );
        void Show( );
```

```
};
class SHOP : private CUSTOMER, public SALESMAN
{
        char Voucher_No[10];
        char Sales_Date[8;
public :
        SHOP( );
        void Sales_Entry( );
        void Sales_Detail( );
   };
```

(i) Write the names of data members, which are accessible from object belonging to class CUSTOMER.

(ii) Write the names of all the member functions which are accessible from object belonging to class SALESMAN.

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

(iv) How many bytes will be required by an object belonging to class SHOP?

Q16. Answer the questions (i) to (iv) based on the following code:

```
class Teacher       {
        char TNo[7],TName[25],Dept[12];
        int Wload;
    protected:
        double Sal;
        void AssignSal(double);
     public:
        Teacher( );
        Teacher(Double S);
        void TeaNew( );
        void TeaDisplay( );            };
 class Student
 {
        char ANo[6],SName[15],Group[7];
   protected:
        int Att,Total;
   public:
        Student( );
        void StuAccept( );
        void StuDisplay( );             };
  class School: public Student, private Teacher
  {
        char SchCode[9],SchName[15];
   public:
        School( );
        void SchAccept( );
```

```
    void SchDisplay( );        };
```

(i) How many bytes will be reserved for an object of type School?(ii) Name the members that can be called by object of type School.
(iii)Which type of inheritance is depicted by the above example?

(iv) Identify the member function(s) that cannot be called directly from the objects of class School from the following: (a) TeaNew( ) (b) StuAccept( ) (c) SchDisplay( ) (d)AssignSal( )

Q17. Write a function in c++ to search for details (Phoneno and Calls) of those Phones which have more than 800 calls from binary file "phones.dat". Assuming that this binary file contains records/ objects of class Phone, which is defined below.

```
class Phone
{
Char Phoneno[10]; int Calls;
public:
void Get() {gets(Phoneno); cin>>Calls;}
void Billing() { cout<<Phoneno<< "#"<<Calls<<endl;}
int GetCalls() {return Calls;}
};
```

Q18. Given a binary file PHONE.DAT, containing records of the following class type

```
class Phonlist
{
        char name[20];
        char address[30];
        char areacode[5];
        char Phoneno[15];
        public:
        void Register()
        void Show();
        void CheckCode(char AC[])
        {return(strcmp(areacode,AC);
}};
```

Write a function TRANSFER( ) in C++, that would copy all those records which are having areacode as "DEL" from PHONE.DAT to PHONBACK.DAT.

Q19. Write a function in C++ which accepts an integer array and its size as arguments and replaces elements having odd values with thrice and elements having even values with twice its value.
Example : If an array of five elements initially contains the elements 3,4,5,16,9
Then the function should rearrange the content of the array as 9,8,15,32,27.

Q20. Write a function in C++ which accepts an integer array and its size as argument and exchanges the value of first half side elements with the second half side elements of the array. Example : If an array of eight elements has initial content as 2,4,1,6,7,9,23,10

The function should rearrange the array as 7,9,23,10,2,4,1,6.

Q21. Define a function SWPCOL() in C++ to swap (interchange) the first column elements with the last column elements, for a two dimensional array passed as the argument of the function.

Q22. Write a user defined function named upperhalf() which takes a 2D array A, with size n rows and n cols as arguments and print the upper half of the matrix

Q23. Write a user defined function lowerhalf() which takes a 2D array, with size n rows and n cols as argument and prints the lower half of the matrix

Q24. Write a user defined function named printfull() which takes a 2D array Arr, with size r rows and c cols as arguments and print only those numbers which have 7 at the unit place.
Eg. 17, 27, 37, 57 etc.

Q25. An array S[40][30] is stored in the memory along the row with each of the element occupying 2 bytes, find out the memory location for the element S[20][10], if an element S[15][5] is stored at the memory location 5500.

Q26. An array M[-3…18][-8….37] is stored in the memory along the column with each of its elements occupying 8 bytes. Find out the base address and the address of an element M[2][5], if the element M[5][10] is stored at address 4000

Q27. An array P[10][10] is stored in the memory along the column with each element occupying 2 bytes of storage, find out the base address and address of the location P[5][5], if the element P[2][2] is stored at the memory location at 1000.

Q28. An array Arr[35][15] is stored in the memory along the row with each of its element occupying 4 bytes. Find out the base address and the address of an element Arr[20][5], if the location Arr[2][2] is stored at the address 3000.

Q29. Write a function in C++ to perform a DELETE operation in a dynamically allocated queue considering the following description:

```
struct Node
{
float U,V;
Node *Link;
};
class QUEUE
{
Node *Rear, *Front;
public:
QUEUE( )
{
```

```
Rear =NULL; Front= NULL;
}
void INSERT ( );
void DELETE ( );
~QUEUE ( );
}
```

Q30. Write a function in C++ to perform a PUSH operation in a dynamically allocated stack considering the following:

```
struct node
{ int x,y;
Node *Link;};
```

Q31. Write a function POP() in C++ to perform a POP operation in a dynamically allocated stack considering the following structure description:

```
struct Node
{
int info;
char name[50];
Node *Next;
};
```

Q32. Write SQL Command for (a) to (d) and output of (g)

TABLE : GRADUATE

S.NO	NAME	STIPEND	SUBJECT	AVERAGE	DIV
1	KARAN	400	PHYSICS	68	I
2	DIWAKAR	450	COMP Sc	68	I
3	DIVYA	300	CHEMISTRY	62	I
4	REKHA	350	PHYSICS	63	I
5	ARJUN	500	MATHS	70	I
6	SABINA	400	CHEMISTRY	55	II
7	JOHN	250	PHYSICS	64	I
8	ROBERT	450	MATHS	68	I
9	RUBINA	500	COMP Sc	62	I
10	VIKAS	400	MATHS	57	II

a. List the names of those students who have obtained DIV I sorted by NAME.
b. Display a report, listing NAME, STIPEND, SUBJECT and amount of stipend received in a year assuming that the STIPEND is paid every month.
c. To count the number of students who are either PHYSICS or COMPUTER SC graduates.

d. To insert a new row in the GRADUATE table: 11,"KAJOL", 300, "computer sc", 75, 1
e. Give the output of following sql statement based on table GRADUATE:
(i) Select MIN(AVERAGE) from GRADUATE where SUBJECT="PHYSICS";
(ii) Select SUM(STIPEND) from GRADUATE WHERE div=2;
(iii)Select AVG(STIPEND) from GRADUATE where AVERAGE>=65;
(iv)Select COUNT(distinct SUBJECT) from GRADUATE;

Q33. Consider the following tables GARMENT and FABRIC. Write SQL commands for the statements (i) to (iv) and give outputs for SQL queries (v) to (viii).

Table : GARMENT

GCODE	DESCRIPTION	PRICE	FCODE	READYDATE
10023	PENCIL SKIRT	1150	F03	19–DEC–08
10001	FORMAL SHIRT	1250	F01	12–JAN–08
10012	INFORMAL SHIRT	1550	F02	06–JUN–08
10024	BABY TOP	750	F03	07–APR–07
10090	TULIP SKIRT	850	F02	31–MAR–07
10019	EVENING GOWN	850	F03	06–JUN–08
10009	INFORMAL PANT	1500	F02	20–OCT–08
10007	FORMAL PANT	1350	F01	09–MAR–08
10020	FROCK	850	F04	09–SEP–07
10089	SLACKS	750	F03	20–OCT–08

Table : FABRIC

FCODE	TYPE
F04	POLYSTER
F02	COTTON
F03	SILK
F01	TERELENE

(i) To display GCODE and DESCRIPTION of a each dress in descending order of GCODE.
(ii) To display the details of all the GARMENTs, which have READYDATE in between 08–DEC–07 and 16–JUN–08 (inclusive of both the dates).
(iii) To display the average PRICE of all the GARMENTs, which are made up of FABRIC with FCODE as F03.
(iv) To display FABRIC wise highest and lowest price of GARMENTs from DRESS table. (Display FCODE of each GARMENT along with highest and lowest price)
(v) SELECT SUM (PRICE) FROM GARMENT WHERE FCODE= 'F01';
(vi) SELECT DESCRIPTION, TYPE FROM GARMENT, FABRIC WHERE GARMENT.FCODE = FABRIC. FCODE AND GARMENT. PRICE>=1260;
(vii) SELECT MAX (FCODE) FROM FABRIC;

(viii) SELECT COUNT (DISTINCT PRICE) FROM FABRIC;

Q34. Write the SQL commands for (i) to (iv) and outputs for (v) to (viii) on the basis of tables BOOKS and ISSUES.)

Table: ISSUES

Book_ID	Qty_Issued
L02	13
L04	5
L05	21

Table: BOOKS

Book_ID	BookName	AuthorName	Publisher	Price	Qty
L01	Maths	Raman	ABC	70	20
L02	Science	Agarkar	DEF	90	15
L03	Social	Suresh	XYZ	85	30
L04	Computer	Sumita	ABC	75	7
L05	Telugu	Nannayya	DEF	60	25
L06	English	Wordsworth	DEF	55	12

(i) To show Book name, Author name and Price of books of ABC publisher.

(ii) To display the details of the books in descending order of their price.

(iii) To decrease the Qty_Issued from ISSUES table by 3 (all rows must decrease).

(iv) To display the Book Id, Book name, Publisher, Price, Qty, Qty_Issued from both the tables with their matching Book ID.

(v) SELECT sum(price) FROM Books WHERE Publisher = “DEF”;

(vi)SELECT Publisher, min(price) FROM Books GROUP BY Publisher;

(vii)SELECT Price from Books, Issues where Books.Book_ID=Issues.Book_ID AND Qty_Issued=5;

(viii)SELECT Count(Distinct Publisher) FROM Books;

Q35. Consider the following tables GAMES and PLAYER. Write SQL commands for the statements (i) to (iv) and give outputs for SQL queries (v) to (viii)

Table: GAMES

GCode	GameName	Number	PrizeMoney	ScheduleDate
101	Carom Board	2	5000	23-Jan-2004
102	Badminton	2	12000	12-Dec-2003
103	Table Tennis	4	8000	14-Feb-2004
105	Chess	2	9000	01-Jan-2004
108	Lawn Tennis	4	25000	19-Mar-2004

Table: PLAYER

PCode	Name	Gcode
1	Nabi Ahmad	101
2	Ravi Sahai	108
3	Jatin	101
4	Nazneen	103

(i) To display the name of all Games with their Gcodes
(ii) To display details of those games which are having PrizeMoney more than 7000.
(iii) To display the content of the GAMES table in ascending order of ScheduleDate.
(iv) To display sum of PrizeMoney for each of the Number of participation groupings (as shown in column Number 2 or 4)
[v] SELECT COUNT(DISTINCT Number) FROM GAMES;
(vi)SELECT MAX(ScheduleDate),MIN(ScheduleDate) FROM GAMES;
(vii)SELECT SUM(PrizeMoney) FROM GAMES;
(viii) SELECT DISTINCT Gcode FROM PLAYER;

Q36. If F(A, B, C, D)=Σ(0,2,4,5,7,8,10,12,13,15), obtain the simplified form using K-Map.

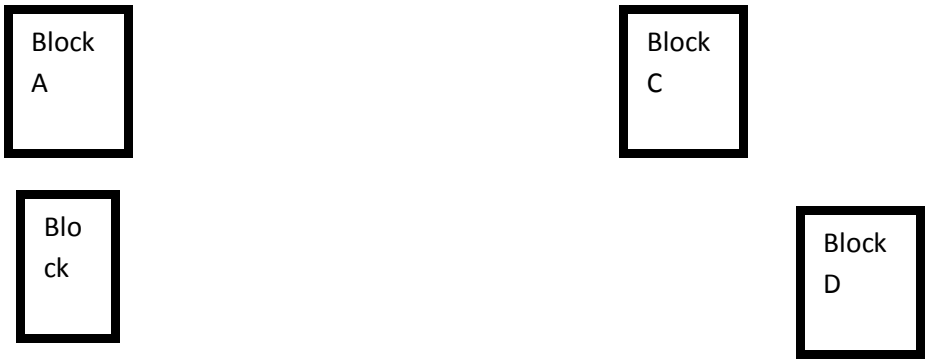
Q37. If F(P, Q, R, S) =Σ(0,3,4,5,7,8,9,11,12,13,15), obtain the simplified form using KMap

Q38. Obtain a simplified form for a boolean expression
F(U,V,W,Z)= π (0,1,3,5,6,7,10,14,15)

Q39. Reduce the following boolean expression using K-Map
F(A,B,C,D) = Σ(5,6,7,8,9,12,13,14,15)

Q40. Reduce the following Boolean expression using K-map
F(A,B,C,D)= Σ(1,3,4,5,7,9,11,12,13,14)

Q41. Knowledge Supplement Organisation has set up its new center at Mangalore for its office and web based activities. It has 4 blocks of buildings as shown in the diagram below:



Center to center distances between various blocks

Black A to Block B	50 m
Block B to Block C	150 m
Block C to Block D	25 m
Block A to Block D	170 m
Block B to Block D	125 m
Block A to Block C	90 m

Number of Computers

Black A	25
Block B	50
Block C	125
Block D	10

e1) Suggest a cable layout of connections between the blocks.

e2) Suggest the most suitable place (i.e. block) to house the server of this organisation with a suitable reason.

e3) Suggest the placement of the following devices with justification

(i) Repeater

(ii) Hub/Switch

e4)The organization is planning to link its front office situated in the city in a hilly region where cable connection is not feasible, suggest an economic way to connect it with reasonably high speed?

Q42. Dr. Rizvi Education Society of India is starting its new CBSE School in Mumbai (Maharashtra). The society is already running a School in Jaunpur (UP) named Dr. Rizvi Learners' Academy, having 3 major buildings in 2 km area campus. As a network expert you need to suggest the network plan as per E1 to E4:

Wire Distance Between Various Buildings:

Library building to Admin building	90m
Library building to Academic building	80m
Academic building to Admin building	15m
Jaunpur School to Mumbai School	1350km

Expected number of Computers to be installed in various buildings:

Library Building	20
Academic building	150
Admin building	35
Mumbai School	5

E1. Suggest the cable layout among various buildings inside school campus for connecting the buildings.

E2. Suggest the most suitable place to house the server of the school with a suitable reason.

E3. Suggest an efficient device from the following to be installed in each of the building to connect all the computers:

(i) Bridge (ii) Repeater (iii) Switch

E4. Suggest the most suitable service (very high speed) to provide data connectivity between Rizvi Learners' in Jaunpur and Mumbai CBSE School from the options

Q43. BHARATH ELECTRONICS COMPANY in Coimbatore is setting up the network between its different departments located in different blocks. There are 4 blocks named as Meera (M), Tagore (T), Kalidas (K) and Bharathi (B).

Distances between various blocks are given below:

Block B to Block K	100 m
Block B to Block M	200 m
Block B to Block T	400 m
Block K to Block M	300 m
Block M to Block P	100m
Block R to Block P	450 m

Number of Computers:

Block M	15
Block R	100
Block A	50
Block P	150

i. Suggest a suitable Topology for networking the computers of all Blocks.
ii. Name the Block where the Server is to be installed. Justify your answer.
iii. Suggest the placement of Hub/Switch in the network.
iv. Mention an economic technology to provide Internet accessibility to all Blocks.

Q44. Write a function in C++ to search for a BookNo from a binary file "BOOK.DAT", assuming the binary file is containing the objects of the following class.

```
class
{
int Bno;
char Title[20];
public:
int RBno(){return Bno;}
void Enter(){cin>>Bno;gets(Title);}
void Display(){cout<<Bno<<Title<<endl;}
};
```

Q45. Write a function in C++ to add new objects at the bottom of a binary file "STUDENT.DAT", assuming the binary file is containing the objects of the following class.

```
class STUD
{
        int Rno;
```

```
        char Name[20];
public:
        void Enter(){cin>>Rno;gets(Name);}
        void Display(){cout<<Rno<<Name<<endl;}
};
```

Q46. Write a program to insert a new element in the circular queue containing book id and name of book as members.

```
struct Book
{
        int bid;
        char bname[20];
};
```

Q47. Write a function in C++ to delete those records from a binary file "BOOK.DAT" which are of "BPB Publications" assuming the binary file is containing the objects of the following class.

```
struct BOOK
{
        int Bno;
        char Title[20];
        char publisher[20];
};
```

Q48. Write SQL command for (a) to (g) on the basis of the table SPORTS

Table: SPORTS

Student NO	Class	Name	Game1	Grade	Game2	Grade2
10	7	Sammer	Cricket	B	Swimming	A
11	8	Sujit	Tennis	A	Skating	C
12	7	Kamal	Swimming	B	Football	B
13	7	Venna	Tennis	C	Tennis	A
14	9	Archana	Basketball	A	Cricket	A
15	10	Arpit	Cricket	A	Atheletics	C

(a) Display the names of the students who have grade 'C' in either Game1 or Game2 or both.

(b) Display the number of students getting grade 'A' in Cricket.
(c) Display the names of the students who have same game for both Game1 and Game2.
(d) Display the games taken up by the students, whose name starts with 'A'.
(e) Assign a value 200 for Marks for all those who are getting grade 'B' or grade 'A' in both Game1 and Game2.
(f) Arrange the whole table in the alphabetical order of Name.
(g) Add a new column named 'Marks'.

Q49. Write SQL command for (a) to (e) and output for (f) on the basis of the table

Table : SchoolBus

Rtno	Area_overed	Capacity	Noofstudents	Distance	Transporter	Charges
1	Vasant kunj	100	120	10	Shivamtravels	100000
2	Hauz Khas	80	80	10	Anand travels	85000
3	Pitampura	60	55	30	Anand travels	60000
4	Rohini	100	90	35	Anand travels	100000
5	Yamuna Vihar	50	60	20	Bhalla Co.	55000
6	Krishna Nagar	70	80	30	Yadav Co.	80000
7	Vasundhara	100	110	20	Yadav Co.	100000
8	Paschim Vihar	40	40	20	Speed travels	55000
9	Saket	120	120	10	Speed travels	100000
10	Jank Puri	100	100	20	Kisan Tours	95000

(a) To show all information of students where capacity is more than the no of student in order of rtno.
(b) To show area_covered for buses covering more than 20 km., but charges less then 80000.
(c) To show transporter wise total no. of students traveling.

(d) To show rtno, area_covered and average cost per student for all routes where average cost per student is - charges/noofstudents.

(e) Add a new record with following data:

(11, " Moti bagh",35,32,10," kisan tours ", 35000)

(f) Give the output considering the original relation as given:

(i) select sum(distance) from schoolbus where transporter= " Yadav travels";

(ii) select min(noofstudents) from schoolbus;

(iii) select avg(charges) from schoolbus where transporter= " Anand travels";

(iv) select distinct transporter from schoolbus;

Q50. Write SQL command for (a) to (d) and output for (e) on the basis of the table

TABLE : GRADUATE

S.NO	NAME	STIPEND	SUBJECT	AVERAGE	DIV.
1	KARAN	400	PHYSICS	68	I
2	DIWAKAR	450	COMP. Sc.	68	I
3	DIVYA	300	CHEMISTRY	62	I
4	REKHA	350	PHYSICS	63	I
5	ARJUN	500	MATHS	70	I
6	SABINA	400	CEHMISTRY	55	II
7	JOHN	250	PHYSICS	64	I
8	ROBERT	450	MATHS	68	I
9	RUBINA	500	COMP. Sc.	62	I
10	VIKAS	400	MATHS	57	II

(a) List the names of those students who have obtained DIV 1 sorted by NAME.

(b) Display a report, listing NAME, STIPEND, SUBJECT and amount of stipend received in a year assuming that the STIPEND is paid every month.

(c) To count the number of students who are either PHYSICS or COMPUTER SC graduates.

(d) To insert a new row in the GRADUATE table: 11,"KAJOL", 300, "computer sc", 75, 1

(e) Give the output of following sql statement based on table GRADUATE:

(i) Select MIN(AVERAGE) from GRADUATE where SUBJECT="PHYSICS";

(ii) Select SUM(STIPEND) from GRADUATE WHERE div=2;

(iii) Select AVG(STIPEND) from GRADUATE where AVERAGE>=65;

(iv) Select COUNT(distinct SUBDJECT) from GRADUATE;