

1. Consider the class declaration:

```
Class student
```

```
{
int admno;
char sname[20];
float eng, math, science;
Public:
Void takedata( ); //To read an object from the keyboard
Void writedata( ); //To write n objects into a file
Void showdata( ); //To read and display data
};
```

Complete the member function definitions.

2. Consider the class declaration:

```
class employ
```

```
{
int empno;
char ename[20];
float basic, da, hra;
float netpay;
void calculate(); //A function to calculate basic+da+hra
Public :
Void havedata( ); //A function to read and write n objects
Void dispdata( ); //A function to read from file and display data members on the screen
};
```

Complete the member function definitions.

3. Consider the class declaration:

```
class teacher
```

```
{ char name[20];
char subject[10];
float salary;
Public :
void readdata( )
{ cout<<"Enter name, subject and salary of teacher"<<endl;
gets(name);
gets(subject);
cin>>salary;
}
void displaydata( )
{ cout<<name<<"\t"<<subject<<"\t"<<salary<<endl;
}
};
```

Assuming the class teacher given above, write functions in C++ to perform following:

(i) Write the objects of teacher to a binary file.

(ii) Read the objects of teacher from binary file and display them on screen.





19. Write a program in C++ to create a text file named as letter.txt. Count and print the total number of words starting with 's'.

20. Write a program to read data for the structure elements such as name, height, weight, age from the keyboard and to store them in a specified file again the same file is opened for reading and display on the screen.

21. Assuming the class employee given below, write functions in C++ to perform following:

(i) Write the objects of employee to a binary file.

(ii) Read the objects of employee from binary file and display them on screen.

Class employee

```
{
int eno;
char ename[10];
public:
    void getit( )
        { cin>>eno;
          gets(ename);
        }
    void showit( )
        {
          cout<<eno<<ename<<endl;
        }
};
```

22. There are two files old.dat, old1.dat having the datas in the following format Name (20 characters), empno(integer), status(manual, semi skill, skilled), payrate(float). Write a program to merge the contents of two files to a new file new.dat.

23. Write a C++ program to create two matrices of size M X N. Display the sum of two matrices.

24. Write a program to read a string from user and display whether that is pallindrome or not.

25. Write a C++ program to create a matrix of size M X N. Display the sum of each row and column.

26. Assuming the class vehicle given below, write functions in C++ to perform following:

(i) Write the objects of vehicle to a binary file.

(ii) Read the objects of vehicle from binary file and display them on screen.

class vehicle

```
{
int petrol;
char vname[20];
public:
void getdata( ) { cin>>petrol; gets(vname); }
void showdata( ) { cout<<petrol<<vname<<endl; }
};
```

27. Assuming the class bank given below, write functions in C++ to perform following:

(i) Write the objects of bank to a binary file.

(ii) Read the objects of bank from binary file and display them on screen.

class bank

```
{
int accno;
char name[20];
float balance;
public:
void input( ) { cin>>accno; gets(name); cin>>balance; }
void output( ) { cout<<accno<<name<<balance<<endl; }
};
```

28. Declare a structure in C++ telerec, containing name(20 characters) and telephone number. A binary data file "TELE.DAT" stores data of the type telerec. Write a program to display the name for a given telephone number. If the telephone number does not exist then displays error message "Record not found".

29. A binary file "Employee.dat" containing empno(employee number), wrate(hourly wage rate), noh(number of hours worked/week) fields. Write a C++ function to read each record, compute weekly wage as wrate\*noh and display empno, wrate, noh, wrate\*noh.

30. Write a program in C++ to create a matrix of MXN. Transpose it and display.

31. Write a program to create two matrices and check for their equality.

32. Write a program to push an element to a stack containing integer elements.

33. Write a program to push an element to a linked stack containing integers.
34. Write a program to add an element to a Queue containing integers.
35. Write a program to add an element to a Linked Queue containing integers.
36. Write a function in C++ to accept a 2D Array and its order as argument and assign the elements which are divisible by 3 or 5 into a one dimensional array.
37. Write a program in C++ to read one character at a time from an existing text file named as OLD.TXT and store it into another text file named as NEW.TXT in uppercase.
38. Write a program in C++ to create a text file named as data.txt. Count and print the number of spaces, uppercase and lower case characters from that file.
39. Write a program in C++ to create a text file named as data1.txt. Count and print the number of words from that file.
40. Write a program in C++ to create a text file named text.dat. Count and print the number of lines starting with 'a' from that file.
41. Write a program in C++ to read one character at a time from an existing text file named as OLD.TXT and store it into another text file named as NEW.TXT by converting all lowercase Characters into uppercase and all uppercase characters into lowercase.
42. Write a program in C++ to create a text file named as text.txt. Count and print the total number of vowels and consonants from that file.

43. Write a program in C++ to create a text file named as letter.txt. Now create two more file by separating all uppercase characters to upper.dat and all lowercase characters to lower.dat .

44. Write a program in C++ to create a text file named para.dat. Now count and print the number of lines starting with a vowel from that file.

45. Write a program in C++ to create a text file named paragraph.dat. Now count and print the number of words ending with a vowel from that file.

46. Write a program in C++ to arrange all the elements of 1<sup>st</sup> row and last row in descending order.

47. Write a program in C++ to count the words not starting with vowel and second character as "F" in a text file "PARA.TXT".

48. Write a program in C++ to display the size of a file in bytes. The program should accept the file name from user.

49. Write a program in C++ to count the presence of a word "to" in a text file "NOTES.txt".

50. A binary file "SAMPLE.DAT" containing records of the following class.

Class hospital

```
{
int room_no;
char patient_n[20];
public:
void input( )
{
cin>> room_no;
gets(patient_n);
}
void output()
{
cout<<"Room no:"<<room_no<<endl;
cout<<"Patient Name:"<< patient_n<<endl;
}
int getroom( )
{return room_no; }
};
```

Write a program in C++ that would receive a room no as argument, read contents of the file and display details of all patients of that room.

1. Write SQL commands and outputs for (a) to (e) on the basis of table hospital.

Table:hospital

No	Name	Age	Department	Dateofadm	Charges	Sex
1	Arpit	62	Surgery	21/01/98	300	M
2	Zarina	22	ENT	12/12/97	250	F
3	Kareem	32	Orthopaedic	19/02/98	200	M
4	Arun	12	Surgery	11/01/98	300	M
5	Zubin	30	ENT	12/01/98	250	M

- (a) To show all information about the patients of cardiology department.
- (b) To list the names of female patients who are in ENT department.
- (c) To list names of all patients with their date of admission in ascending order.
- (d) To display patients name, charges, age for female patients only.
- (e) To count the number patients with age <30.

2. Write SQL commands and outputs for (a) to (e) on the basis of table Teacher.

Table:Teacher

No	Name	Age	Department	Dateofadm	Salary	Sex
1	Jugal	34	Computer	10/01/97	12000	M
2	Sharmila	31	History	24/03/98	20000	F
3	Sandeep	32	Maths	12/12/96	30000	M
4	Sangeeta	35	History	01/07/99	40000	F
5	Rakesh	42	Maths	05/09/97	25000	M

- (a) To show all information about the teacher of history department.
- (b) To list the name of female teachers who are in Maths department.
- (c) To list names of all teachers with their date of admission in ascending order.



- (d) Display teachers name, salary , age for male teacher only.  
 (e) To insert a new row in the teacher table with the following data:  
 9,"Raja",26,"Computer",{13/05/95}, 2300, "M"

3. Write SQL commands and outputs for (a) to (e) on the basis of table supplier.

Table : Supplier

Suppno	Suppname	Status	City	Qtysupp
S1	Britannia	C	Delhi	10
S2	Mother Diary	C	Mumbai	20
S3	Nirula's	L	Delhi	20
S4	Haldiram	L	Bangalore	40
S5	Bikaner	L	Jaipur	30

- (a) Find the total quantity supplied by all the supplier  
 (b) Display all the supplier names sorted by quantity supplied in descending order.  
 (c) List the name of all supplier whose starting letter is B.  
 (d) Display all the supplier who are belongs to Delhi.  
 (e) Display all the supplier's name who have the status L.

4. Write SQL commands and outputs for (a) to (e) on the basis of table student.

Table : STUDENT

No	Name	Paid	Stream	Marks	Class
1	Kushagra	T	Non Medical	90.6	12B
2	Bharti	T	Medical	92.2	12A
3	Ankit	F	Humanities	78.5	11C
4	Gaurav	T	Non Medical	93.5	12B
5	Aditi	T	Medical	93.2	11A

- (a) List the details of all those students who have paid their fees.  
 (b) List the names of all those students who are in Medical stream in class 12.  
 (c) To insert a new student in the STUDENT table and fill all the column with some values.  
 (d) To list names of all students whose starting letter is A.  
 (e) To list names of all students with their marks in descending order.

5. Write SQL commands and outputs for (a) to (e) on the basis of table movie.

TABLE: MOVIE

Mno	Mname	Type	Rating	Stars	Qty	Price
1	Gone with the Wind	Drama	G	Gable	4	39.95
2	Friday the 13th	Horror	R	Jason	2	69.95
3	Top Gun	Drama	PG	Cruise	7	49.95
4	Splash	Comedy	PG13	Hanks	3	29.95
5	Independence Day	Drama	R	Tumer	3	19.95
6	Risky Business	Comedy	R	Cruise	2	44.95

- (a) Find the total price value of all the movie cassettes available in the library.  
 (b) Display a list of all movies with Price over 20 and sorted by price.  
 (c) Display all the movies sorted by Qty in decreasing order.  
 (d) Display a report listing a movie number, current value and replacement value for each movie in the above table. Calculate the current value of a movie as Qty \* Price and replacement value as Qty\*Price\*1.15.  
 (e) Count the number of movies where Rating is not "R".

6. Write SQL commands and outputs for (a) to (e) on the basis of table SCHOOL.

**SCHOOL**

CODE	TEACHERNAME	SUBJECT	DOJ	PERIODS	EXPERIENCE
1001	RAVI SHANKAR	ENGLISH	12/03/2000	24	10
1009	PRIYA RAI	PHYSICS	03/09/1998	26	12
1203	LISA ANAND	ENGLISH	09/04/2000	27	5
1045	YASHRAJ	MATHS	24/08/2000	24	15
1123	GANAN	PHYSICS	16/07/1999	28	3
1167	HARISH B	CHEMISTRY	19/10/1999	27	5
1215	UMESH	PHYSICS	11/05/1998	22	16

- Display TEACHERNAME, PERIODS of all teachers whose periods is less than 10.
- To display subject wise no of teachers from tables SCHOOL.
- To display the TEACHERNAME who are in MATHS.
- To display CODE, TEACHERNAME and SUBJECT of all teachers who have joined the school after 01/01/1999.
- Display the TEACHER details who are in Physics and name starts with G.

7. Write SQL commands and outputs for (a) to (e) on the basis of table employee.

**Table : EMPLOYEE**

SNO	NAME	BASIC	DEPARTMENT	DATOFAPP	AGE	SEX
1	KARAN	8000	PERSONNEL	27/03/97	35	M
2	DIVAKAR	9500	COMPUTER	20/01/98	34	M
3	DIVYA	7300	ACCOUNTS	19/02/97	34	F
4	ARUN	8350	PERSONNEL	01/01/95	33	M
5	SABINA	9500	ACCOUNTS	12/01/96	36	F
6	JOHN	7400	FINANCE	24/02/97	36	M

- List the names of the employees who are more than 34 years old sorted by name.
- Display a report, listing name, basic, department and annual salary equals basic X 12.
- To count the number of employees who are either working in PERSONNEL or COMPUTER department.
- To insert a new row in the EMPLOYEE table.  
11, "Vijay", 9300, "Finance", 13/07/98, 35, "M"
- List details of the employees whose salary is more than 8000.

8. Write SQL commands and outputs for (a) to (e) on the basis of table VOTER.

**Table : VOTER**

VNO	VNAME	AGE	ADDRESS	PHONE
1	Diwaker	22	Sarojini Nagar	7045249
2	Rajiv	27	KK Nagar	2233456
3	Smith	40	Paschim Vihar	4190567
4	Arpit	30	Dev Nagar	3378567
5	Anand	27	Dev Nagar	2775690

- List VNO, VNAME, AGE for all voters. This information should be sorted on VNAME.
- To list all those voters who are either reside in Dev Nagar or Whose AGE <25.
- List different voters with age should be unique.
- To insert a new row in the VOTER table.  
11, "Rahul", 25, "Ring Road", 265001
- List details of the voters whose age is more than 30.

9. Write SQL commands and outputs for (a) to (e) on the basis of table STUDENT.

Table : STUDENT

Name	Age	Dept	D_of_adm	Fee	Sex
Panini	24	Comp Sc	10/01/96	200	M
Shalini	21	History	24/03/98	120	F
Sharada	23	Hindi	12/09/97	300	F
Srimani	25	History	09/09/00	250	F
Karmakar	22	Comp Sc	18/05/95	400	M
Vishnu	25	Hindi	17/12/97	350	M

- To show all information about the students of Comp Sc Department.
- To list names of female students who are in Hindi Department.
- To list the names of all the students in descending order of their D\_of\_adm.
- To display age, Fees of male students who pay more than 300.
- To display all the names that end with "ni".

10. Write SQL commands and outputs for (a) to (e) on the basis of table CLUB.

Table: CLUB

COACH_ID	COACHNAME	AGE	SPORTS	DATOFAPP	PAY	SEX
1	KUKERJA	35	KARATE	27/03/1996	10000	M
2	RAVINA	34	KARATE	20/01/1998	12000	F
3	KARAN	34	SQUASH	19/02/1998	20000	M
4	TARUN	33	BASKETBALL	01/01/1998	15000	M
5	ZUBIN	36	SWIMMING	12/01/1998	7500	M

- To list names of all the coaches with their date of appointment (DATOFAPP) in descending order.
- To display a report showing coachname, pay, age, and bonus (15% of pay) for all the coaches.
- To insert a new row in the CLUB table.  
11, "RAMESH", 22, "KARATE", 26/01/1999, 7000, M
- To display a report showing coach\_id, coachname, pay, age, datofapp for sports KARATE.
- To list all coachname with their sports who are either in SWIMMING or BASKETBALL.

11. Write SQL commands and outputs for (a) to (e) on the basis of table EMPLOYEE.

EMPLOYEE

W_ID	FIRSTNAME	LASTNAME	CITY	SALARY	DESIGNATION
102	SAM	TONES	PARIS	75000	MANAGER
105	SARAH	ACKERMAN	NEW YORK	85000	DIRECTOR
144	MANILA	SENGUPTA	NEW DELHI	70000	MANAGER
210	GEORGE	SMITH	HOWARD	75000	MANAGER
255	MARY	JONES	HUSTON	50000	CLERK
300	ROBERT	SAMUEL	WASHINGTON	45000	CLERK
335	HENRY	WILLIAMS	BOSTON	40000	CLERK
400	RONNY	LEE	NEW YORK	32000	SALESMAN
451	PAT	THOMPSON	PARIS	28000	SALESMAN

- Display FirstName and City of Employee having salary between 50,000 and 90,000
- Display details of Employees who are from "PARIS" city.
- Increase the salary of employee having W\_ID = 210 by 500.
- Display the number of employees whose name starts from character 'S'.
- To list the first name of all the employees in ascending order of their salary.

12. Write SQL commands and outputs for (a) to (e) on the basis of table schoolbus.

schoolbus

RtNo	Area_Covered	Capacity	No_of students	Distance	Transporter	Charges
1	VasantKunj	100	100	10	Shivam Tra	100000
2	Rohini	80	80	10	Anand Tr	55000
3	Saket	50	50	30	Bhalla Co.	95000
4	Yamuna Vihar	120	120	35	Speed Tr	10000
5	Saket	100	100	20	Raj Tr.	80000
6	Janak Puri	40	40	10	Yadav Co.	60000

- To show all records, students more than the capacity in order of RtNo.
- To show Area\_cover for buses covering more than 30 km, but charges less than 80000
- To show transporter wise total no.of students travelling.
- To show the Transporter name whose capacity is same with Shivam Tra .
- To show the busdetails covering "Rohini" area.

13. Write SQL commands and outputs for (a) to (e) on the basis of table activity.

activity

Code	ActivityName	Stadium	Participants Num	Prize Money	ScheduleDate
1001	Relay 100X4	Star Annex	16	10000	23-Jan-2004
1002	High Jump	Star Annex	10	12000	12-Dec-2003
1005	ShotPut	Star Power	12	8000	14-Feb-2004
1008	Long Jump	Star Annex	12	9000	01-Jan-2004
1009	Discuss Throw	Super power	10	15000	19-Mar-2004

- To display the names of all activities with their codes in descending order.
- To display sum of PrizeMoney for the Activities played in each of the Stadium separately.
- To display the stadium name and Code in ascending order of Code from the table activity.
- To display the content of the Activity table whose ScheduleDate earlier than 01/01/2004 in ascending order of ParticipantsNum.
- To increase the prizemoney by 500 for all activity.

14. Write SQL commands and outputs for (a) to (e) on the basis of table GAMES.

GAMES

GCode	GameName	Type	Number	Prize Money	Schedule Date
101	Carom Board	Indoor	2	5000	23-Jan-2004
102	Badminton	Outdoor	2	12000	12-Dec-2003
105	Table Tennis	Indoor	4	8000	14-Feb-2004
108	Chess	Indoor	2	9000	01-Jan-2004
109	Lawn Tennis	Outdoor	4	25000	19-Mar-2004

- To display the name of all GAMES with their GCodes
- To display details of those GAMES which are having PrizeMoney more than 7000.
- To display the content of the GAMES table in ascending order of Schedule Date.
- To display sum of PrizeMoney for each Type of GAMES.
- To increase the prizemoney by 1500 for all outdoor games.

15. Write SQL commands and outputs for (a) to (e) on the basis of table EMPLOYEE.

EMPLOYEE

Eid	Name	Deptid	Qualification	Sex	Basic
1	Deepali	101	MCA	F	60000
2	Rajat	101	BCA	M	20000
3	Hari Mohan	102	BA	M	10000
4	Harry	102	MA	M	15000
5	Sumit Mittal	103	BTech	M	80000

- (a) To display the name of employees department wise.
- (b) To list the names of those employees only whose basic is greater than 30000.
- (c) To print the basic from employee table where name starts with "H".
- (d) To display highest basic among the all male employees.
- (e) List the name of employees whose qualification is "MCA".