St. Mary's School, Dwarka
Holiday Homework
Class XII
Subject: Computer Science

Answer the following in your respective notebook:

Q1 Differentiate between: 2 * 8= 16
  (i)   Object Oriented Programming and Procedural Programming
  (ii)   Text File and Binary File
  (iii)   Local and Global variables
  (iv)   Private and Public members of a class
  (v)   Private and Public Visibility mode
  (vi)   Seekg( ) and Tellg( )
  (vii)   Constructor and Destructor
  (viii)   Formal and Actual parameters

Q2 a) Define a class SUPPLY with the following specifications: 3

Private members:

Code of type int

FoodName of type string Sticker of type string
FoodType of type string

A member function GetType() to assign the following values for FoodType as per the given Sticker:

Sticker   FoodType

GREEN   Vegetarian

YELLOW   Contains Egg

RED   Non-Vegetarian

Public members:

A function FoodIn( ) to allow the user to enter values for Code, FoodName, Sticker and call function GetType() to assign respective FoodType.

A function FoodOut( ) to allow the user to view the content of all the data members.

Q2 b) Define a class TravelPlan in C++ with the following descriptions: 3
          Private members:
                PlanCode   of type long
                                    of type character array
                Place   (string)
                No_of_Travelles   of type integer
                No_of_Buses   of type integer
          Public Members:

A constructor to assign initial values of PlanCode as 1001, Place as "Agra",
No_of_Travellers as 5, No_of_buses as 1.
A function NewPlan() which allows the user to enter PlanCode, Place, and
No_of_Travellers. Also assign the value to No_of_Buses as per the following conditions:

No_of_travellers	No_of_Buses
Less than 20	1
20-39	2
40 or more	3

Q3 a) Answer the questions (a) to (d) based on the following: 4*1=4

class Student

{

int RNo;

char name[20]; float marks;

protected:

void Result(); public:

Student();

void Register(); void Display();

};

class Faculty

{

long FCode; char FName[20];

protected: float pay;

public:

Faculty(); void Enter(); void show();
};

class Course:public Student, private Faculty

{

long CCode[10]; char courseName[50]; char StartDate[8], EndDate[8];

public:

Course();

void Commence(); void CDetail();

};

   a)Which type of inheritance is illustrated in the above C++ code?

   b)Write the names of all the data member(s), which is/are accessible from member function Commence of class Course.

   C)Write the names of member functions, which are accessible from objects of class Course.

   d)Write the names of all the members, which are accessible from objects of class Faculty.

 Q3 b) Answer the questions (a) to (d) based on the following: 4*1=4
            class ORGANIZATION
            {
                   char Address[20];
                   double Budget, Income;
               protected:
                   void Compute();
               public:
                   ORGANIZATION();
                   void Get();
                   void show();
            };
            class WORKAREA: public ORGANIZATION
            {
                   char Address[20];
                   int Staff;
            protected:
    double Pay;

    void Calculate(); public:

    WORKAREA();

    void Enter();

    void Display( );}

            class SHOWROOM:private ORGANIZATION
            {
            char Address[20];
            float Area; double
        Sale; public:
        SHOWROO
        M();

```
void Enter(); void
Show();
};
```

a) Name the type of inheritance is illustrated in the above C++ code?
b) Write the names of data members, which are accessible from member functions of class SHOWROOM.
c) Write the names of all the member functions, which are accessible from objects belonging to class WORKAREA.
d)Write the names of all the members, which are accessible from objects of class SHOWROOM.

Q3C)
Answer the questions (a) to (d) based on the following: 4*1=4

```
                class Student
                {
                        int Class, Rno;
                        char Section;
                    protected:
                        char SName[20];
                    public:
                        Student();
                        void Stentry();
                        void Stdisplay();
                };
                class Score: private Student
                {
                        float Marks[5];
                    protected:
                        char Grade[5];
                    public:
                        Score();
                        void Sentry();
                        void Sdisplay();
                };
                class Report:public Score
                {
                        float Total, Avg;
                    public:
                        char OverallGrade, Remarks[20];
                        Report();
                        void REvaluate();
                         void RPrint();
                };
```

a) Which type of inheritance is shown in the above example?
B) Write the names of those data members, which can be directly accessed from the objects of class Report.

C)Write the names of those member functions, which can be directly accessed from the objects of class Report.

D) Write the names of those data members, which can be directly accessed from the Sentry() function of class Score.

Q3 D)

Answer the questions (a) to (d) based on the following: 4*1 = 4

```
class Campus
{long Id;
char City[20]; protected:
char Country[20]; public:
Campus();
void Register(); void Display();
};
class Dept: private Campus
{
long DCode[10]; char HOD[20];
protected:
double Budget; public:
Dept();
void Enter(); void Show();
};
class Applicant:public Dept
{
long RegNo; char Name[20];
public:
Applicant(); void Enrol(); void View();
};
```

a) Which type of inheritance is shown in the above example?

B) Write the names of those member functions, which are directly accessed from the objects of class Applicant.

C) Write the names of those data members, which can be directly accessible from the member functions of class Applicant.

D) Is it possible to directly call the function Display() of class University from an object of class Dept? (Answer as Yes or No).

Q4 Write functions to :   3* 3 = 9
   a)   count the number of blanks present in a text file named "PARA.TXT".
   b)   Write a function in C++ to count the number of lines ending with a vowel from a text file "STORY.TXT'.
   c)   count the number of words beginning with the alphabet 'A' or 'a' present in a text file named "Lines.TXT".

Q5 a)   Assuming the class GAMES as declared below, write a function in C++ to read the objects of GAMES from binary file GAMES.DAT and display the details of those games, which are meant for children of AgeRange "8 to 13".   4

```
class GAMES

{

int GameCode;

char    GameName[10];
char    AgeRange;
public:
                    void Enter()
                    {
                        cin>>GameCode;
                        gets(GameName);
                        gets(AgeRange);
                    }
                    void Display()
                    {
                        cout<<GameCode<<":"<<GameName<<endl;
                        cout<<AgeRange<<endl;
                    }
                    char *AgeR() {return AgeRange;}
};
```

Q5 b) Write a definition for function Economic ( ) in C++ to read each record of a binary file ITEMS.DAT, find and display those items, which costs less than 2500. Assume that the file ITEMS.DAT is created with the help of objects of class ITEMS, which is defined below: 4

```
        class ITEMS
        {
                int ID;char GIFT[20]; float Cost;
            public :
                void Get()
                {
                        cin>>CODE;gets(GIFT);cin>>Cost;
                }
                void See()
                {
                        cout<<ID<<":"<<GIFT<<":"<<Cost<<end1;
                }
                float GetCost(){return Cost;}.
        };
```

Ans 6 a) Write SQL commands for the following queries :
Table Club   1 * 5 = 5

Coach-ID	CoachName	Age	Sports	date_of_app	Pay	Sex
1	Kukreja	35	Karate	27/03/1996	1000	M
2	Ravina	34	Karate	20/01/1998	1200	F
3	Karan	34	Squash	19/02/1998	2000	M
4	Tarun	33	Basketball	01/01/1998	1500	M
5	Zubin	36	Swimming	12/01/1998	750	M
6	Ketaki	36	Swimming	24/02/1998	800	F
7	Ankita	39	Squash	20/02/1998	2200	F
8	Zareen	37	Karate	22/02/1998	1100	F
9	Kush	41	Swimming	13/01/1998	900	M

| 10 | Shailya | 37 | Basketball | 19/02/1998 | 1700 | M |

To show all information about the swimming coaches in the club.

To list the names of all coaches with their date of appointment (date_of_app) in descending order.

To display a report showing coach name, pay, age, and bonus (15% of pay) for all coaches.

To insert a new row in the Club table with ANY relevant data:

Give the output of the following SQL statements:

Select COUNT(Distinct Sports) from Club;

Select Min(Age) from Club where SEX = "F";

Q6 b) Write SQL commands for the following queries :   1*5 =5

FURNITURE

NO	ITEMNAME	TYPE	DATEOFSTOCK	PRICE	DISCOUNT
1	White lotus	Double Bed	23/02/02	30000	25
2	Pink feather	Baby cot	20/01/02	7000	20
3	Dolphin	Baby cot	19/02/02	9500	20
4	Decent	Office Table	01/01/02	25000	30
5	Comfort zone	Double Bed	12/01/02	25000	25
6	Donald	Baby cot	24/02/02	6500	15
7	Royal Finish	Office Table	20/02/02	18000	30
8	Royal tiger	Sofa	22/02/02	31000	30
9	Econo sitting	Sofa	13/12/01	9500	25
10	Eating Paradise	Dining Table	19/02/02	11500	25

ARRIVALS

NO	ITEMNAME	TYPE	DATEOFSTOCK	PRICE	DISCOUNT
1	Wood Comfort	Double Bed	23/03/03	25000	25
2	Old Fox	Sofa	20/02/03	17000	20
3	Micky	Baby cot	21/02/03	7500	15

To show all information about the Baby cots from the FURNITURE table.

To list the ITEMNAME which are priced at more than 15000 from the FURNITURE table.

To list ITEMNAME and TYPE of those items, in which date of stock is before 22/01/02 from the FURNITURE table in descending of ITEMNAME.

To display ITEMNAME and DATEOFSTOCK of those items, in which the discount percentage is more than 25 from FURNITURE table.

To count the number of items, whose TYPE is "Sofa" from FURNITURE table.
To insert a new row in the ARRIVALS table with the following data:

14,"Valvet touch", "Double bed", {25/03/03}, 25000,30

Give the output of following SQL stateme

Note: Outputs of the above mentioned queries should be based on original data given in both the tables i.e., without considering the insertion done in (f) part of this question.

Select COUNT(distinct TYPE) from FURNITURE;

Select MAX(DISCOUNT) from FURNITURE,ARRIVALS;

Select AVG(DISCOUNT) from FURNITURE where TYPE="Baby cot";

Select SUM(Price) from FURNITURE where DATEOFSTOCK<{12/02/02};

Q6 c) Write SQL queries for (a) to (f) and write the outputs for the SQL queries mentioned shown in (g1) to (g4)   1*8=8

       parts on the basis of tables ITEMS and
       TRADERS:

Table   Items

CODE	INAME	QTY	PRICE	COMPANY	TCODE
1001	DIGITAL PAD 12i	120	11000	XENITA	T01
1006	LED SCREEN 40	70	38000	SANTORA	T02
1004	CAR GPS SYSTEM	50	21500	GEOKNOW	T01
1003	DIGITAL CAMERA 12X	160	8000	DIGICLICK	T02
1005	PEN DRIVE 32GB	600	1200	STOREHOME	T03

TRADERS

TCode	TName	CITY
T01	ELECTRONIC SALES	MUMBAI
T03	BUSY STORE CORP	DELHI
T02	DISP HOUSE INC	CHENNAI

To display the details of all the items in the ascending order of item names (i.e. INAME).

To display item name and price of all those items, whose price is in range of 10000 and 22000 (both values inclusive).

To display the number of items, which are traded by each trader. The expected output of this query should be:

T01   2

T02   2

T03   1

To display the price, item name and quantity (i.e. qty) of those items which have quantity more than 150.

To display the names of those traders, who are either from DELHI or from MUMBAI.

To display the names of the companies and the names of the items in descending order of company names.

g1)   SELECT MAX(PRICE), MIN(PRICE) FROM ITEMS;

g2) SELECT PRICE*QTY AMOUNT FROM ITEMS WHERE CODE-1004; g3) SELECT DISTINCT TCODE FROM ITEMS;

g4)   SELECT INAME, TNAME FROM ITEMS I, TRADERS T WHERE I.TCODE=T.TCODE AND QTY<100;

Q7 Research on the topic "IMPORTANCE OF MOBILE APPLICATIONS IN EVERYDAY LIFE". Find out ten such applications and their use. Prepare a report to justify it's importance

Q8 Decide a topic for your project. Define the class(es) to contain the data members and it's associated member functions. Keep the records in a binary file and write code to perform append, modification and deletion on the records in the file.