

INTERNATIONAL INDIAN SCHOOL-DAMMAM
I-TERMINAL EXAMINATIONS, JULY-2008

SUB: Computer Science(083)

Class: XII

SET-1

Max. Marks: 70

Time Allowed : 3 Hours

Instructions : (i). All questions are compulsory
(ii). Programming Language :C++

1. (a). What do you understand about a object oriented programming ?

How does a structure differs from a class ?

2

(b). Rewrite the following program after removing the syntactical errors (if any) .

Underline each correction

2

```
#include<iostream.h>
class distance
{
    int feet;
    float inches;
    public: void getit();
           void show();
};
void getit(){ cin>> feet>>inches;}
void show(){ cout<<feet<<inches;}
void main()
{
    getit();
    Show();
}
```

(c). find the output of the following program:

4

```
#include<iostream.h>
struct package
{
    int len, brd, ht;
} s2,s3, s1={ 10, 20, 45};
void fun( package &M , int a=0)
{
    cout<<M.len++<<"x"<<M.brd<<"x"<<M.ht<<endl;
    if(a)
        cout<< M.len++;
    else cout<< ++M.len;
}
void main()
{
    s2.len = s1.len++;
    fun(s2);
    s3= s1;
    s3.brd = ++s2.brd;
    fun(s3);
    s2.ht --;
    s2.brd ++;
    fun(s2); }
```

2 (a). Write a program to explain copy constructor. 2

(b). Write two similarities and differences between constructors and destructors 2

(c). Define class employee for the following 4

Private members

eno long
ename string
salary double
commission float
dept string

Public members

- Constructor to initialize data members to zero or NULL
- havedata() function to read necessary data members
- incresal() to increase salary by 'X' for "SALES" department employees ;otherwise decrease salary by 100. (where 'X' passed to parameter to this function) and returns the salary
- increcomm() increase commission by 'Y' for "MARKETING" department employees ; otherwise decrease commission by 70 (where 'Y' passed to parameter to this function) and returns the commission
- Display() to invoke incresal() and increcomm() and calculates totalsalary as (salary+commission)and display all data members on the screen.

(d). define a class complex for the following 4

Private members

Real float
Image float

Public members

- Constructor to initialize data members to zero
- Setit() – function to assign values for real and image with help of parameters passed to this function
- Sum(complex c1, complex c2) -function to add data members of two objects
- Display() function to display all the data members on the screen

Write a main() program to initialize two objects A and B and add two objects and store the results into third object C. display all object's data members on the screen

(e). Illustrate the use of #define with suitable example 2

3. (a).consider the following class and answer the questions (1) to (4)

4

```
class employee
{
    Int eno;

    Char name[20];

    float salary[2];

    public:
        employee() { cout<<" employee 's data created\n";}

    void getit();

~employee() { cout<<" employee 's data deleted\n";}

    protected: void calsal();
};

class manager: public employee
{
    Int dues;
    void assign();

    Public:
        manager(){ cout<<" managers data set\n";}

    void input();
    void show();
~manager(){ cout<<" managers data deleted\n";}

};

class scientist : public employee
{
    Int no_pub[10];
    Char paper[20];

    public:
        scientist(){ cout<<" scientists data set\n";}

    Void display();
~ scientist(){ cout<<" scientists data deleted\n";}

};
```

1. Is void getit() is accessible by assign()? Justify your answer .
2. write output after execution the statement scientist X,Y;
3. if class scientist derived privately from manager , then name the data members which are accessible by objects of class scientist and name the member functions which are not accessible by objects of class scientist
4. Name the data accessible by display().

3

(b).consider the following class and answer the questions ()to ()

```

class exam
{
    int date;
    char sub[20];

public: void input();
       void show();
};
class student
{
    int roll;
    char name[20];

    Public:
        void readit();
        void writeit();
    protected:
        int marks[10];
};
class result: public student , exam
{
    int pass, fail, compt, abst;
public:
    void publish();
};

```

1. How many bytes does an object of derived class of exam require ?
2. List protected members of class result
3. Name the member functions accessible by member functions of class exam.
4. Name the base and derived class of class exam

4.(a). What is importance of primary key? Explain with example. 2

(b). Explain Cartesian product with example. 2

(c). Consider the following tables Write SQL commands for the statements (i) to (vi). 6

TABLE: salespeople

SNUM	SNAME	CITY	COMM
1001	PEEL	LONDON	.12
1002	SERRES	SAN JOSE	.13
1004	MOTIKA	LONDON	.11
1007	RIFKIN	BARCELONA	.15
1003	AXELORD	NEW YORK	.10

CUSTOMERS

CNUM	CNAME	CITY	RATING	SNUM
2001	HOFFMAN	LONDON	100	1001
2002	GIOVANNI	ROME	200	1003
2003	LIU	SAN JOSE	200	1002
2004	GRASS	BERLIN	300	1002
2006	CLEMENS	LONDON	100	1001
2008	CISNEROS	SAN JOSE	300	1007
2007	PRREIRA	ROME	100	1004

(A)

ORDERS

ONUM	AMT	ODATE	CNUM	SNUM
3001	18.69	10/03/1990	2008	1007
3003	767.19	10/03/1990	2001	1001
3002	1900.10	10/03/1990	2007	1004
3005	5160.45	10/03/1990	2003	1002
3006	1098.16	10/03/1990	2008	1007
3009	1713.23	10/04/1990	2002	1003
3007	75.75	10/04/1990	2004	1002
3008	4723.00	10/05/1990	2006	1001
3010	1309.95	10/06/1990	2004	1002
3011	9891.88	10/06/1990	2006	1001

- i. Write a query that lists each order number followed the name of the customer who made the order
- ii. write a query that gives the names of both the salesperson and the customer for each order after the order number.
- iii. Write a query that calculates the amount of salesperson's commission on each Order by customer with a rating above 100
- iv. To display highest, lowest , average, total of all orders
- v. To display name of LONDON salespeople's LONDON customers
- vi. Increase amount of all orders by double which are taken after October 4th 1990

(d) Consider the the following table s . Write SQL commands for the statements (i) to (iii) and write output for(iv)to(vi) 6

EMP

Empno	Ename	Job	Mgr	Hiredate	Sal	Comm.	Deptno
7839	King	President		17-nov-81	5000		10
7698	Blake	Manager	7839	01-may-81	2850		30
7782	Clark	Manager	7839	09-jun-81	2450		10
7566	Jones	Manager	7839	02-apr-81	2975		20
7654	Martin	salesman	7698	28-sep-81	1250	1400	30
7499	Allen	Salesman	7698	20-feb-81	1600	300	30
7844	Turner	Salesman	7698	08-sep-81	1500	0	30
7900	James	Clerk	7698	03-dec-81	950		30
7521	Ward	Salesman	7698	22-feb-81	1250	500	30
7902	Ford	Analyst	7566	03-dec-81	3000		20
7369	Smith	Clerk	7902	17-dec-80	800		20
7788	Scott	Analyst	7566	09-dec-82	3000		20
7876	Adams	Clerk	7788	12-jan-83	1100		20
7934	Miller	Clerk	7782	23-jan-82	1300		10

DEPT

Deptno	Deptname	Loc
10	Accountaing	New york
20	Research	Dallas
30	Sales	Chicago
40	Operations	Boston

- i. To display the name , job, department number and department name for all employees who work in Dallas
 - ii. To display employee name and salary of all employees who report to king
-
- iii . to display all employees who earn annual salary more than 25000
- iv. SELECT JOB, SUM(SAL), COUNT(*) FROM EMP GROUP BY JOB;
 - v. SELECT COUNT(COMM) FROM EMP ;
 - vi. SELECT ENAME, SAL FROM EMP WHERE JOB ='CLERK';
-

- 5. i. "The order in which a combination of terms is performed does not affect the result of combination "
Name the law and prove using truth table 2
- ii. "The sum of the all the minterm of a Boolean function of 'n' variable is 1"
prove it for n=3 2
- iii. Simplify the following using k-map 6
 - i. $F(a,b,c,d) = \pi(0,1,2,3,4,5,6,7,8,9,10,11,12,13,14,15)$
 - ii. $F(a,b,c,d) = \sum(0,1,2,3,4,5,6,8,9,10,12,13,14)$
- iv. Write the equivalent SOP and POS form of the following : 2
 - i. $F(a,b,c,d) = \pi(0,1,2,3,4,5,11,12,13,14,15)$
 - ii. $F(a,b,c,d) = \sum(0,1,2,3,4,5,6,8,9,10,12,13,14)$
- v. Draw a Logic circuit (3input) which gives high output only when there is even number of low or high inputs. 2
- vi. Draw a logic circuit (2input) using NOR only which will give you high output when both inputs are same . 2
- 6. (a). Convert the following infix expression into postfix using a stack and then evaluate the post fix expression using stack. Show the contents of the stack after each step
 - i. $(true \parallel false) \&\& !(false \&\& true)$ 2
 - ii. FALSE AND FALSE AND NOT FALSE OR TRUE 2
- (b). An character array arranged in row major order. If $a[3][3] = 114$ and $a[4][5] = 122$. Find the address of $a[2][2]$. 4