

Database Management System

(Questions and Solutions)

Questions (1 – 16) are based on the following 3 tables:

Table Name: Cust_Info

CustNum	City	OrderNum
1001	Kanpur	2001
1002	Vizag	2002
1003	Guntur	2003
1004	Agra	2004
1005	Guntur	2005
1006	Pune	2006
1007	Guntur	2007
1008	Pune	2008
1009	Delhi	2009
1010	Imphal	2010

Table Name: Order_Info

OrderNum	OrderDate	OrderedItem	Quantity
2001	02-FEB-05	Pen	5
2001	02-FEB-05	Pencil	3
2002	13-JAN-05	Pen	3
2002	13-JAN-05	Pencil	8
2003	11-JAN-05	Table	1
2004	11-JAN-04	Chair	4
2005	11-JAN-04	Table	1
2006	17-APR-01	Pen	10
2007	21-JUL-04	Pencil	20
2008	15-JAN-05	Table	2
2009	10-OCT-02	Table	1
2009	10-OCT-02	Pen	1
2009	10-OCT-02	Pencil	1
2010	18-OCT-03	Table	1

Table Name: Item_Info

ItemName	UnitPrice (in Rs)
Pen	10
Pencil	2
Table	101
Chair	26

1. The SQL statement:

```
SELECT SUM (B.Quantity*C.UnitPrice)
FROM Cust_Info A, Order_Info B, Item_Info C
WHERE A.CustItem = 1009 AND A.OrderNum = B.OrderNum
AND B.OrderItem = C.ItemName;
```

Prints:

- (a) 101
- (b) An unpredictable value
- (c) 1139
- (d) None of these

Solution: Option (d)

Explanation:

It prints 113. This is because customer 1009 order for 1 table, 1 pen, 1 pencil:

$$101*1 + 10*1 + 2*1 = 113$$

2. To answer the Question “Whose bill is the highest” we need to write SQL query that joins the table:

- (a) Cust_Info, Order_Info, Item_Info
- (b) Order_Info and Item_Info
- (c) Order_Info and Item_Info
- (d) None of these

Solution: Option (a)

Explanation:

We need to join Cust_Info, Order_Info and Item_Info to retrieve “whose bill is the highest”.

3. How many rows does the following SQL query print?

```
SELECT DISTINCT A.OrderNum, B.OrderNum
FROM Cust_Info A, Order_Info B
GROUP BY(A.OrderNum, B.OrderNum);
```

- (a) 10
- (b) 24
- (c) 100
- (d) 240

Solution: Option(c)

Explanation:

It prints all possible x, y where x can be any one of 10 values -- 2001, 2002,2010
and y can be one of the 10 values -- 2001, 2002,2010,
giving us $10 \times 10 = 100$ rows.

4. Fill in the blanks in the following query that finds the number of orders that were ordered for either pencil or pen.

```
SELECT _____ (DISTINCT _____ ) FROM Order_Info B
WHERE B.OrderedItem = 'Pen' _____ B.OrderedItem = ' _____ '
```

- (a) COUNT, OrderNum, OR, 'Pencil'
- (b) COUNT, OrderNum, 'OR', 'Pencil'
- (c) UNIQUE, OrderNum, OR, 'Pencil'
- (d) None of these

Solution: Option (a)

Explanation: The correct sequence to fill the blanks of the query is COUNT, OrderNum, OR, 'Pencil'.

5. Fill in the blanks in the following query that finds the number of customers who ordered for either pen or pencil:

```
SELECT COUNT ( _____ A.CustNum)
FROM Cust_Info A, Order_Info B
WHERE A.OrderNum = B.OrderNum
_____ B.OrderedItem _____ ('Pen', 'Pencil')
```

- (a) ALL, AND, NOT IN
- (b) ALL, OR, IN
- (c) DISTINCT, AND, IN
- (d) DISTINCT, OR, IN

Solution: Option (c)

Explanation:

The correct sequence to fill the blanks of the query is DISTINCT, AND, IN

6. Which of the following CustNum will not be displayed by the following SQL query?

```
SELECT A.CustNum FROM Cust_Info A, Order_Info B
WHERE A.OrderNum = B.OrderNum AND B.OrderedItem = 'Pen'
UNION
SELECT A.CustNum FROM Cust_Info A, Order_Info B
WHERE A.OrderNum = B.OrderNum AND B.OrderedItem = 'Pencil';
```

- (a) 1006
- (b) 1007
- (c) 1008

(d) 1009

Solution: Option (c)

Explanation: The CustNum 1008 will not be displayed by the query.

7. How many rows will be displayed by the following SQL query?

```
SELECT A.CustNum FROM Cust_Info A, Order_Info B
WHERE A.OrderNum = B.OrderNum AND B.OrderedItem = 'Pen'
UNION ALL
SELECT A.CustNum FROM Cust_Info A, Order_Info B
WHERE A.OrderNum = B.OrderNum AND B.OrderedItem = 'Pencil';
```

(a) 7

(b) 8

(c) 9

(d) 10

Solution: Option (b)

Explanation:

The 8 rows are: 1001, 1002, 1006, 1009, 1001, 1002, 1007, 1009.

8. Which CustNum will not be displayed by the following SQL query?

```
SELECT A.CustNum FROM Cust_Info A, Order_Info B
WHERE A.OrderNum = B.OrderNum AND B.OrderedItem = 'Pen'
INTERSECT
SELECT A.CustNum FROM Cust_Info A, Order_Info B
WHERE A.OrderNum = B.OrderNum AND B.OrderedItem = 'Pencil';
```

(a) 1001

(b) 1002

(c) 1006

(d) 1009

Solution: Option (c)

Explanation:

The query lists out all CustNum who ordered Pen and Pencil.

9. How many CustNum will be displayed by the following SQL query?

```
SELECT DISTINCT A.CustNum FROM Cust_Info A, Order_Info B,  
WHERE A.OrderNum = B.OrderNum AND B.OrderedItem  
NOT IN (SELECT A.OrderedItem FROM Order_Info A  
WHERE A.OrderNum IN (2001, 2002));
```

(a) 4

(b) 5

(c) 6

(d) 7

Solution: Option (c)

Explanation:

The query lists out 1003, 1004, 1005, 1008, 1009, 1010.

You might have missed 1009 thinking the order includes pen/ pencil. If you analyze the query you will find 1009 is included because order 2009 includes table.

10. How many CustNum will be displayed by the following SQL query?

```
SELECT A.CustNum FROM Cust_Info A, Order_Info B  
WHERE A.OrderNum = B.OrderNum AND B.OrderedItem IN ('Pen', 'Pencil')  
INTERSECT  
SELECT A.CustNum FROM Cust_Info A, Order_Info B  
WHERE A.OrderNum = B.OrderNum AND B.OrderedItem NOT IN ('Pen', 'Pencil')
```

(a) 0

(b) 1

(c) 4

(d) 5

Solution: Option (b)

Explanation:

The Cust 1009 will be displayed.

11. How many CustNum will be displayed in the following SQL query?

```
SELECT DISTINCT A.CustNum FROM Cust_Info A, Order_Info B
WHERE A.OrderNum = B.OrderNum AND A.City
IN('Kanpur', 'Guntur') AND B.OrderedItem IN ('Table', 'Chair');
```

(a) 0

(b) 1

(c) 2

(d) 3

Solution: Option (c)

Explanation:

1003 and 1005 are displayed.

12. How many CustNum will be displayed by the following SQL query?

```
SELECT DISTINCT (A.CustNum) FROM Cust_Info A, Order_Info B
WHERE A.Order.Num = B.OrderNum AND B.OrderedItem
IN ('Table', 'Chair', 'Pen', 'Pencil')
MINUS
SELECT DISTINCT (A.CustNum) FROM Cust_Info A, Order_Info B
WHERE A.OrderNum = B.OrderNum AND A.City
IN ('Kanpur', 'Vizag', 'Guntur', 'Agra', 'Pune', 'Delhi', 'Imphal');
```

- (a) 0
- (b) 1
- (c) 2
- (d) 3

Solution: Option (a)

Explanation:

Every CustNum ordered atleast one table, chair, pen or pencil. So the first query returns all the 10 CustNum for similar reasons, the second query also returns 10 CustNum.

13. Which of the following remarks about the following query are True?

```
SELECT DISTINCT (A.CustNum) FROM Cust_Info A, Order_Info B
WHERE A.OrderNum = B.OrderNum AND B.OrderedItem
= (SELECT C.ItemName FROM Item_Info C
WHERE C.UnitPrice = (SELECT MAX (C.UnitPrice) FROM Item_Info C));
```

- (a) It returns 5 rows
- (b) One of the CustNum returned is 1008
- (c) It returns all CustNum that ordered a table
- (d) All of the above

Solution: Option (d)

Explanation: All the given options are correct.

14. Which of the listed options can fill the blank if the following query displayed exactly 6 rows?

```
SELECT DISTINCT (A. CustNum) FROM Cust_Info A, Order_Info B
WHERE A.OrderNum = B.OrderNum AND B.OrderedItem
IN (SELECT C.ItemName FROM Item_Info C
WHERE C.UnitPrice > _____ );
```


- (a) 2
- (b) 8
- (c) 20
- (d) 30

Solution: Option (c)

Explanation:

If it is 20, the query counts and displays all CustNum who placed an order for an item that is worth more than Rs.20. The possible items are table and chair. There are exactly 6 CustNum, who ordered for a table or chair.

15. What is the CustNum that will be displayed by the following query?

```
SELECT DISTINCT (A.CustNum) FROM Cust_Info A, Order_Info B
AND B.OrderDetails = (Select MAX (C.OrderDate) FROM Order_Info C);
```

- (a) 1001
- (b) 1002
- (c) 1003
- (d) 1004

Solution: Option (a)

Explanation:

It displays the CustNum which has placed the most recent order.

16. How many rows are returned by the following query?

```
SELECT DISTINCT (A.CustNum) FROM Cust_Info A, Order_Info B
WHERE A.OrderNum = B.OrderNum
AND B.OrderDate BETWEEN '11-JUN-04' AND '02-FEB-05';
```

- (a) 4

(b) 5

(c) 6

(d) 7

Solution: Option (b)

Explanation:

BETWEEN includes end values as well.
