

DECEMBER 2009

Section A

A1.

- a) TRUE
- b) FALSE
- c) FALSE
- d) TRUE
- e) FALSE
- f) FALSE
- g) TRUE
- h) FALSE
- i) TRUE
- j) FALSE

A2.

Syntax for Create view:

```
CREATE VIEW view_name AS
SELECT column_name(s)
FROM table_name
WHERE condition
```

In SQL, a view is a virtual table based on the result-set of an SQL statement and always shows up-to-date data. The database engine recreates the data, using the view's SQL statement, every time a user queries a view.

A3.

- a) SELECT
- b) INSERT, UPDATE, DELETE
- c) CREATE, DROP, TRUNCATE
- d) GRANT, REVOKE
- e) COMMIT, ROLLBACK, SAVEPOINT

A4.

LCASE(), UCASE(), MID(), LEN(), ROUND()

A5.

```
SELECT *  
FROM TOY  
WHERE Quantity > 5 AND NOT Price > 12;
```

A6.

Types of JOIN:

- JOIN / INNER JOIN
- OUTER JOIN
 - LEFT JOIN / LEFT OUTER JOIN
 - RIGHT JOIN / RIGHT OUTER JOIN
 - FULL JOIN / FULL OUTER JOIN
- CROSS JOIN

The INNER JOIN keyword returns rows by combining column values of two tables (table1 and table2) based on join-predicate; the LEFT OUTER JOIN returns the rows from the left table; the RIGHT OUTER JOIN returns the rows from the right table; the FULL OUTER JOIN returns rows from both tables; whereas the CROSS JOIN returns the rows combining each row from the first table with each row from the second table.

Note: You can simply put definitions from book.

Section B

B1.

(a)

i) Two features of primary key are:

- It must contain unique values and not null values.
- A primary key constraint enforces uniqueness of rows.

ii) Based on the table below, the field ProductID is best to be chosen as a Primary key as it contains unique and a distinct values for each rows.

(b)

Eight benefits of using Database Approach as compared to using file processing approach are mentioned below:

- Reduced Data Redundancy
- Improved Sharing of Data
- Enforcing Integrity Constraints
- Transaction Processing
- Provides of Multiple Views of Data
- Restricting Unauthorized Access
- Provides Backup and Recovery Facilities
- Data Independence

(c)

i)

‘at’,
SELECT Concat ([Movie Name], ‘will be shown on’, [MDate],
[MTime], ‘.’) AS [Movie’s Information]
FROM Movie;

ii)

FORMAT ([MDate], ‘dd of mmmm yyyy, dddd’)

B2.

(a)

i) 'Joins' is defined as an SQL clause that is used to retrieve data from two or more tables based on a relationship between certain columns in those tables.

ii) Two join conditions are needed to join two three tables.

iii)

```
SELECT E.Ename, D.DeptName
FROM EMPLOYEE AS E
INNER JOIN DEPT AS D ON E.DeptNo = D.DeptNo;
```

(b)

i)

```
SELECT NAME, PRICE, PRICE + 0.10 AS [NEW PRICE]
FROM Beverage
WHERE PRICE < 1;
```

ii)

```
SELECT MAX (PRICE)
FROM Beverage;
```

(c)

i)

```
SELECT [Product ID], [Brand Name]
FROM Product
WHERE Quantity > 10;
```

ii)

```
CREATE TABLE Product
```

(

```
[Product Id] varchar(5) NOT NULL PRIMARY KEY,
```

[Brand Name] varchar(50),

Quantity int,

);

iii)

DROP TABLE Product;

B3.

(a)

i)

```
SELECT Subject_Name
FROM SUBJECT
WHERE Department = 'Computer Science';
```

ii)

```
SELECT Student_Name
FROM STUDENT
ORDER BY Student_Name;
```

iii)

```
SELECT AVG (Mark)
FROM ENROMENT;
```

iv)

```
SELECT COUNT (*) AS NumberOfStudents
FROM STUDENT;
```

v)

```
SELECT Subject_Name, Mark
FROM SUBJECT AS S
INNER JOIN ENROLMENT AS E ON S.Subject_ID =
E.Subject_ID
WHERE Mark >= 50;
```

(b)

```
SELECT AVG (studmarks) AS average, SUM (studmarks) AS total,  
MIN (studmarks) AS minimum, MAX (studmarks) AS maximum  
FROM classt;
```

(c)

FOUR characteristics that distinguish the database approach with the file-based approach are mentioned below:

- Self-describing Nature of Database System.
- Insulation between Program and Data.
- Supports Sharing of data and Multiuser System.
- Supports Multiple Views of Data.