Assignment 3

Q.8 (1) Explain DATA Functions.

→ (1) SYSDATE :

- It is used to return the system date and time.
- Only addition and subtraction are supported.

ex : Select sysdate From dual;
Select sysdate +1 From dual;

Ans : 22-MAR-21

→ (2) SYSTIMESTAMP

- It is used to return the system date and time.

ex :
Select systimestamp From dual;

Ans : 22-MAR-21

→ (3) TO_CHAR (data, [, Fmt])

→ Format must be following
'DD' - day
'MM' - month
'YY' or 'YYYY' - year
'HH' - hours (0 to 11)
'W' - week of month

ex:-

- Select TO_CHAR (SYSTIMESTAMP, 'DD') From DUAL
  → 22
- Select TO_CHAR (SYSTIMESTAMP, 'MM') From DUAL
  → 03
- Select TO_CHAR (SYSTIMESTAMP, 'YY') From DUAL
  → 21
- Select TO_CHAR (SYSTIMESTAMP, 'YYYY') From DUAL
  → 2021

→ (4) TRUN (date, [fmt])

- The TRUNC(date) function returns date with the time portion of the day truncated to the unit specified by the format model fmt.
- The values returned is always of datatype DATE.

ex:- Select TRUN (TO_DATE ('22-SEP-2014'), 'MONTH') "Time_data" FROM DUAL;

→ 01-SEP-14

- Select TRUN (TO_DATE ('12-MAR-2014'), 'MONTH') "Time_data" FROM DUAL;

→ 01-MAR-14

→ (5) ROUND (date, [Fmt])

- Returns a date rounded to a specific unit of measure. If the second parameter is omitted, the ROUND function will round the date to the nearest day.

→ (6) NEXT_DAY (date, char)

- It returns the next date of given day available after given day.

ex: Select NEXT_DAY ('20-MAR-21', 'THURSDAY') FROM DUAL;

- Ans: 25-MAR-21

→ (7) LAST_DAY (DATE)

- It is used to return the last day of month of specified date.

Ex:
Select LAST_DAY ('20-MAR-2011') FROM DUAL;

→ 31-MAR-21

→ (8) MONTHS_BETWEEN (d1, d2)

- Returns number of months between d1 and d2 as per 31 days per month. Also it returns the functional part as a result.

ex: Select MONTHS_BETWEEN ('21-MAR-21', '25-MAR-21') FROM DUAL;

→ -.1290322 6

- Select MONTHS_BETWEEN ('1-MAR-21', '1-APR-21') FROM DUAL;

→ -1

→ (9) ADD_MONTHS (data, no_months)

- It returns the data after adding given numbers of month is specified data.

ex: Select ADD_MONTHS ('20-MAR-21', 5) FROM DUAL;

Ans: 20-AUG-21

Q(2) Write note on Subquery.

→ (1) Single row Subquery
- Inner query returns zero or one row.
- Single row comparison operators work with this.
(=, <, >, <=, >=, <>).

ex: Display the detail of students having highest marks

Select * From TBLSTUDINFO where MARKS = (select MAX(MARKS) FROM TBLSTUDINFO);

RNO	NAME	MARKS	DID
5	Ankit	41	3

→ (2) Multi row Subquery

- Inner query returns zero one or more rows.
- Multi row comparison operators work with this.
(IN, ANY, ALL).

ex: Display the student detail of 'IT' department.

Select * From TBLSTUDINFO where DID IN (select DID FROM TBLSTUDIN WHERE DNAME = 'IT');

RNO	NAME	MARKS	DID
1	Mayank	35	1
3	Mohit	45	1

→ (3) Correlated Subquery :

- correlated sub query depends on data Provided by outer query.

ex :- Display the department' detail who has atleast one students.

~~Select * From~~
Select A.DNAME FROM Dept A where EXISTS (select * from STUD_info where DID = A.DID);

DNAME
IT
Management
Science

Q:③ Write notes on Index.

→ ① Concepts of Index :

- Index is a data structure associated with table which helps in improving Performance of query processing.
- The Primary key and unique key which are available which table are used as index for table.
- For Foreign key, there is need to explicitly create index.
- Index is normally created for the columns which are frequently used during query Processing.
- One separate index file is generated from table.
- By default, oracle index store ROWID to identify each row uniquely.
- Structure of Index file :

Search Key	Pointer

- Search key : values prepared using one or more columns of the tables in ascending order.
- Pointer : store the address of the value where it is actually store in memory (ROWID).

→ ② CREATE index :

- Using Create statements, the index can be generated.

① single column index :

- It is created using single table column.

Syntax :

CREATE INDEX index_name ON table_name (column_name);

② Unique index :

- It is used for Performance improvement as well as for data integrity also.
- It doesn't allow duplicate values to be inserted into the table.
- Unique index is automatically created for the columns where Primary key or Unique key constraint is set.

Syntax :

CREATE UNIQUE INDEX index_name ON table_name (column_name);

→(3) DROP index

- If the index is no longer required then we have to delete the index file.
- To remove index of table, DROP statement is used.

Syntax:

```
DROP INDEX index_name;
```

ex:

```
DROP INDEX idxstud;
```

→(4) Disadvantages of index:

- When the table is updated, with each transaction, the index is also modified.
- If the created index is never used then it unnecessarily consumes resources.
- If many indexes are created for single table then also the performance is decreased with insert and Delete.
- extra space occupies within system because separate index file is created for each index.