

Department of Computer Science (SF)

COURSE CODE: 17UCS308

COURSE TITLE: Relational Database Management System and Oracle

K1 Level Questions

UNIT-I

1. Which of the following are steps in query processing?

- a) Parsing and translation
- b) Optimization
- c) Evaluation
- d) All of the mentioned**

2. A relational algebra operation annotated with instructions on how to evaluate it is called _____

- a) Evaluation algebra
- b) Evaluation plan
- c) Evaluation primitive**
- d) Evaluation engine

3. A sequence of primitive operations that can be used to evaluate a query are called as _____

- a) Query evaluation algebra
- b) Query evaluation plan**
- c) Query evaluation primitive
- d) Query evaluation engine

4. Which of the following information does an SQL DDL not specify?

- a) The schema for each relation
- b) The integrity constraints
- c) The operations on the tuples**
- d) The security and authorization information for each relation

5. Which of the following data types does the SQL standard not support?

- a) char(n)
- b) String(n)**
- c) varchar(n)
- d) float(n)

6. Which command is used to create a new relation in SQL

- a) create table(, ...)**
- b) create relation(, ...)

- c) new table(, ...)
- d) new relation(, ...)

7. Which of the following commands do we use to delete a relation (R) from a database?

- a) drop table R**
- b) drop relation R
- c) delete table R
- d) delete from R

8. Choose the correct command to delete an attribute A from a relation R

- a) alter table R delete A
- b) alter table R drop A**
- c) alter table drop A from R
- d) delete A from R

9. Transactions that involve user interactions are called _____

- a) Validations
- b) Conversations**
- c) Interfaces
- d) None of the mentioned

10. A join of the form $r \bowtie_{r.A=s.B} s$ is called as

- a) Equi join**
- b) Left outer join
- c) Right outer join
- d) Full outer join

UNIT-II

11. The where clause is a predicate involving attributes of the relation in the _____ clause.

- a) select
- b) from**
- c) with
- d) none of the mentioned

12. The _____ clause is used to list the attributes desired in the result of a query

- a) select**
- b) from
- c) where
- d) create

13. The process of making a normalized schema unnormalized is called as _____

- a) Unnormalization
- b) Denormalization**

- c) Renormalization
- d) Annormalization

14. The data that have a time interval associated with them during which they are valid are called as _____

- a) Timed data
- b) Temporal data**
- c) Model data
- d) Clocked data

15. **What is normalization?**

Normalization is the process of minimizing redundancy and dependency by organizing fields and table of a database. The main aim of Normalization is to add, delete or modify field that can be made in a single table.

16. **What is Denormalization.**

DeNormalization is a technique used to access the data from higher to lower normal forms of database. It is also process of introducing redundancy into a table by incorporating data from the related tables.

17. **What is a relationship and what are they?**

Database Relationship is defined as the connection between the tables in a database. There are various data basing relationships, and they are as follows:.

- One to One Relationship.
- One to Many Relationship.
- Many to One Relationship.
- Self-Referencing Relationship.

18. A _____ is an association among several entities.

- a) Relationship**
- b) Association
- c) Set
- d) Combination

19. Let E be an entity set in a relationship set R. If only some entities in E participate in relationships in R, Then the participation of E in R is _____

- a) Partial
- b) Total**
- c) Complete
- d) Incomplete

20. How are roles specified in an ER diagram
- a) By labelling the rectangles
 - b) By labelling the diamonds
 - c) Roles cannot be specified in an ER diagram
 - d) By labelling the lines**

UNIT-III

21. _____ deletes a data item from a database
- a) Delete(Q)**
 - b) Insert(Q)
 - c) Drop(Q)
 - d) None of the mentioned
22. Which of the following syntax of the basic query is correct?
- a) select <relation> from <attribute>
 - b) select <attribute> from <elation>**
 - c) select <tuple> from <relation>
 - d) select <tuple> from <attribute>

23. What is a query?

A DB query is a code written in order to get the information back from the database. Query can be designed in such a way that it matched with our expectation of the result set. Simply, a question to the Database.

24.What is SQL?

SQL stands for Structured Query Language , and it is used to communicate with the Database. This is a standard language used to perform tasks such as retrieval, updation, insertion and deletion of data from a database.

25. What are tables and Fields?

A table is a set of data that are organized in a model with Columns and Rows. Columns can be categorized as vertical, and Rows are horizontal. A table has specified number of column called fields but can have any number of rows which is called record.

26. What is a primary key?

A primary key is a combination of fields which uniquely specify a row. This is a special kind of unique key, and it has implicit NOT NULL constraint. It means, Primary key values cannot be NULL.

27. What is a foreign key?

A foreign key is one table which can be related to the primary key of another table. Relationship needs to be created between two tables by referencing foreign key with the primary key of another table.

28. What is the difference between DELETE and TRUNCATE commands?

DELETE command is used to remove rows from the table, and WHERE clause can be used for conditional set of parameters. Commit and Rollback can be performed after delete statement.

TRUNCATE removes all rows from the table. Truncate operation cannot be rolled back.

29. What is a constraint?

Constraint can be used to specify the limit on the data type of table. Constraint can be specified while creating or altering the table statement. Sample of constraint are.

- NOT NULL.
- CHECK.
- DEFAULT.
- UNIQUE.
- PRIMARY KEY.
- FOREIGN KEY.

30. How to fetch common records from two tables?

Common records result set can be achieved by -.

Select studentID from student. **INTERSECT** Select StudentID from Exam

UNIT-IV

31. Which of the following is not a built in aggregate function in SQL?

- a) avg
- b) max
- c) total**
- d) count

32. The _____ aggregation operation adds up all the values of the attribute

- a) add
- b) avg
- c) max
- d) sum**

33. The on condition appears at the _____ of the join expression

- a) Beginning
- b) End**
- c) Between
- d) The on condition is not related to join expression

34. What is the difference between a join and an outer join operation?

- a) There is no difference
- b) Join preserves a few tuples that are otherwise lost in the outer join
- c) Outer join preserves a few tuples that are otherwise lost in the join**
- d) An outer join can be used only on outer queries whereas a join operation can be used in Subqueries

35. What is the function of the union operation?

- a) It combines the results of any two different queries
- b) It combines the results of two different queries which have the same set of attributes in the select clause**
- c) It combines the results of two different queries which have the same condition in the where clause
- d) It gives the Cartesian product of the results of any 2 queries

36. Which clause is similar to “HAVING” clause in Mysql?

- a) SELECT
- b) WHERE**
- c) FROM
- d) None of the mentioned

37. What are the types of join?

There are various types of join which can be used to retrieve data and it depends on the relationship between tables.

- **Inner Join.**
- **Right Join.**
- **Left Join.**
- **Full Join.**

38. “COUNT” keyword belongs to which categories in Mysql?

- a) Aggregate functions**
- b) Operators
- c) Clauses
- d) All of the mentioned

39. Which clause is used with an “aggregate functions”?

- a) **GROUP BY**
- b) SELECT
- c) WHERE
- d) Both a and c

40. What is the meaning of “ORDER BY” clause in Mysql?

- a) **Sorting your result set using column data**
- b) Aggregation of fields
- c) Sorting your result set using row data
- d) None of the mentioned

UNIT-V

41. The variables in the triggers are declared using

- a) –
- b) **@**
- c) /
- d) /@

42. Which of the cursors further have their subtypes?

- a) Static Cursors
- b) Dynamic Cursors
- c) Keyset Driven Cursors
- d) **None of the mentioned**

43. A dynamic cursor in SQL Server allows you to see _____ data.

- a) Updated
- b) Inserted
- c) Deleted
- d) **All of the mentioned**

44. _____ cursor is sensitive to any changes to the data source.

- a) Static Cursors
- b) Dynamic Cursors
- c) **Keyset Driven Cursors**
- d) None of the mentioned

45. What is the meaning of “GROUP BY” clause in Mysql?

- a) **Group data by column values**
- b) Group data by row values
- c) Group data by column and row values
- d) None of the mentioned

46. Which clause is similar to “HAVING” clause in Mysql?

- a) SELECT
- b) WHERE**
- c) FROM
- d) None of the mentioned

47. Define stored procedure?

Stored Procedure is a function consists of many SQL statement to access the database system. Several SQL statements are consolidated into a stored procedure and execute them whenever and wherever required.

48. Define trigger?

A DB trigger is a code or programs that automatically execute with response to some event on a table or view in a database. Mainly, trigger helps to maintain the integrity of the database.

Example: When a new student is added to the student database, new records should be created in the related tables like Exam, Score and Attendance tables.

49. What is Union, minus and Interact commands?

UNION operator is used to combine the results of two tables, and it eliminates duplicate rows from the tables.

MINUS operator is used to return rows from the first query but not from the second query. Matching records of first and second query and other rows from the first query will be displayed as a result set.

INTERSECT operator is used to return rows returned by both the queries.

50. How to select unique records from a table?

Select unique records from a table by using DISTINCT keyword.

Select DISTINCT StudentID, StudentName from Student.

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K2 Level Questions

UNIT-I

1. List the disadvantages In File Processing System?

- Data redundancy & inconsistency.
- Difficult in accessing data.
- Data isolation.
- Data integrity.
- Concurrent access is not possible.

2. Describe The Three Levels Of Data Abstraction?

There are three levels of abstraction:

- **Physical level:** The lowest level of abstraction describes how data are stored.
- **Logical level:** The next higher level of abstraction, describes what data are stored in database and what relationship among those data.
- **View level:** The highest level of abstraction describes only part of entire database.

3. How Is The Data Structure Of System R Different From The Relational Structure?

Unlike Relational systems in System R

- Domains are not supported
- Enforcement of candidate key uniqueness is optional
- Enforcement of entity integrity is optional

4. How View Is Related To Data Independence?

A view may be thought of as a virtual table, that is, a table that does not really exist in its own right but is instead derived from one or more underlying base table. In other words, there is no stored file that directly represents the view instead a definition of view is stored in data dictionary. Growth and restructuring of base tables is not reflected in views.

5. Expand DML.

Data Manipulation Language

6. Expand DDL.

Data Definition Language

7. How Does Tuple-oriented Relational Calculus Differ From Domain-oriented Relational Calculus?

The tuple-oriented calculus uses a tuple variables i.e., variable whose only permitted values are tuples of that relation. E.g. QUEL

The domain-oriented calculus has domain variables i.e., variables that range over the underlying domains instead of over relation. E.g. ILL, DEDUCE.

8. When Is A Functional Dependency F Said To Be Minimal?

- Every dependency in F has a single attribute for its right hand side.
- We cannot replace any dependency X A in F with a dependency Y A where Y is a proper subset of X and still have a set of dependency that is equivalent to F.
- We cannot remove any dependency from F and still have set of dependency that is equivalent to F.

9. Give a brief Theory Of Network, Hierarchical Schemas And Their Properties?

Network schema uses a graph data structure to organize records example for such a database management system is CTCG while a hierarchical schema uses a tree data structure example for such a system is IMS.

10. Name The Buffer In Which All The Commands That Are Typed In Are Stored?

‘Edit’ Buffer.

UNIT-II

11. Are The Resulting Relations Of Product And Join Operation The Same?

No.

12. Name The Sub-systems Of A Rdbms?

I/O, Security, Language Processing, Process Control, Storage Management, Logging and Recovery, Distribution Control, Transaction Control, Memory Management, Lock Management.

13. Which Part Of The Rdbms Takes Care Of The Data Dictionary? How

Data dictionary is a set of tables and database objects that is stored in a special area of the database and maintained exclusively by the kernel.

14. Not Only Rdbms Takes Care Of Locating Data It Also?

Determines an optimal access path to store or retrieve the data.

15. How Do You Communicate With An Rdbms?

You communicate with an RDBMS using Structured Query Language (SQL).

16. Name The Three Major Set Of Files On Disk That Compose A Database In Oracle?

There are three major sets of files on disk that compose a database. All the files are binary. These are

- Database files
- Control files
- Redo logs

17. Name Two Utilities That Oracle Provides, Which Are Use For Backup And Recovery.

Along with the RDBMS software, Oracle provides two utilities that you can use to back up and restore the database. These utilities are Export and Import. The Export utility dumps the definitions and data for the specified part of the database to an operating system binary file. The Import utility reads the file produced by an export, recreates the definitions of objects, and inserts the data.

18. Does Pl/sql Support "overloading"? Explain

The concept of overloading in PL/SQL relates to the idea that you can define procedures and functions with the same name. PL/SQL does not look only at the referenced name, however, to resolve a procedure or function call. The count and data types of formal parameters are also considered.

19. Explain The Different Types Of Backups Available In Sql Server.

Complete database backup: This type of backup will backup all the information in the database. Used most commonly for disaster recovery and takes the longest time to backup.

Differential database backup: The database is divided into partitions that have been modified since last complete backup. Most suitable for large databases. The most recent differential backup contains the changes from previous backups.

20. Explain How To Create A Scrollable Cursor With The Scroll Option.

Using the SCROLL keyword while declaring a cursor allows fetching of rows in any sequence.

Example:

```
DECLARE employee_curs SCROLL CURSOR FOR SELECT * FROM employee;
```

UNIT-III

21. Explain How To Create A Dynamic Cursor With The Dynamic Option?

When a cursor is declared as DYNAMIC, the cursor reflects all changes made to the base tables as the cursor is scrolled around.

```
Declare cursor_name cursor
```

```
[ STATIC | KEYSET | DYNAMIC | FAST_FORWARD ]
```

```
FOR select_statement
```

22. Describe In Brief Databases And Sql Server Databases Architecture.

SQL Server consists of a set of various components which fulfill data storage and data analysis needs for enterprise applications. Database architecture: All the data is stored in databases which is organized into logical components visible to the end users.

23. How Would You Use The Sp_ Functions To Identify The Blocking Problems?

Blocking is the deadlock situation when two SQL connections race to obtain the control over the same set of rows in conflicting terms. This can be tracked by the status of WAIT present in the SP_LOCK procedure's output.

24. How Can You Start The Sql Server In The Single User Mode And The Minimal Configuration Mode?

The SQLServer.exe is the executable which can be called in the command prompt with the parameters -m and -f. These are the options that will start the SQL server in the user mode and minimal configuration mode respectively.

25. How Can You Know That Statistics Should Be Updated?

Statistics represent the uniqueness for the indexes that are being used for selecting the records. This can make the query execution pretty efficient. The tables that we are dealing with if truncated and repopulated, there is a good chance that the indexes and statistics are out of sync and this is when we have to update the statistics.

26. Can We Initiate A External Com Object From Within Sql?

Yes we can use the stored procedure sp_OACreate to initiate the external COM object from the T-SQL.

27. How Schema Is Useful In Sql Servers?

The Schema refers to the overall structure of the database with all related information like users, access privileges, interaction information between the different tables etc. The CREATE SCHEMA is the command that can be used to create the schema in the SQL Server.

28. How Can You Identify The Version Number Of The Sql Server Installed?

The global variable version has the build and version information for the SQL Server and the service packs.

29. How Do You Implement One-to-one, One-to-many And Many-to-many Relationships While Designing Tables?

One-to-One relationship can be implemented as a single table and rarely as two tables with primary and foreign key relationships.

One-to-Many relationships are implemented by splitting the data into two tables with primary key and foreign key relationships.

Many-to-Many relationships are implemented using a junction table with the keys from both the tables forming the composite primary key of the junction table.

30. Is There A PL/sql Engine In Sql*plus?

No. Unlike Oracle Forms, SQL*Plus does not have a PL/SQL engine. Thus, all your PL/SQL are sent directly to the database engine for execution.

UNIT-IV

31. Is There A Limit On The Size Of A PL/sql Block?

Currently, the maximum parsed/compiled size of a PL/SQL block is 64K and the maximum code size is 100K. You can run the following select statement to query the size of an existing package or procedure.

32. Which Command Displays The Sql Command In The Sql Buffer, And Then Executes It?

RUN.

33. Which Command Is Used To Get Back The Privileges Offered By The Grant Command?

REVOKE.

34. What Operator Performs Pattern Matching?

LIKE operator.

35. What Operator Tests Column For The Absence Of Data?

IS NULL operator.

36. Which Function Is Used To Find The Largest Integer Less Than Or Equal To A Specific Value?

FLOOR.

37. Describe The Use Of %rowtype And %type In Pl/sql?

%ROWTYPE allows you to associate a variable with an entire table row. The %TYPE associates a variable with a single column type.

38. Describe The Use Of Pl/sql Tables ?

PL/SQL tables are scalar arrays that can be referenced by a binary integer. They can be used to hold values for use in later queries or calculations. In Oracle 8 they will be able to be of the %ROWTYPE designation, or RECORD.

39. When Is A Declare Statement Needed ?

The DECLARE statement is used in PL/SQL anonymous blocks such as with stand alone, non-stored PL/SQL procedures. It must come first in a PL/SQL stand alone file if it is used.

40. In What Order Should A Open/fetch/loop Set Of Commands In A Pl/sql Block Be Implemented If You Use The %notfound Cursor Variable In The Exit When Statement? Why?

OPEN then FETCH then LOOP followed by the exit when. If not specified in this order will result in the final return being done twice because of the way the %NOTFOUND is handled by PL/SQL.

UNIT-V

41. How Can You Find Within A Pl/sql Block, If A Cursor Is Open?

Use the %ISOPEN cursor status variable.

42. How Can You Generate Debugging Output From Pl/sql?

Use the DBMS_OUTPUT package. Another possible method is to just use the SHOW ERROR command, but this only shows errors. The DBMS_OUTPUT package can be used to show intermediate results from loops and the status of variables as the procedure is executed. The new package UTL_FILE can also be used.

43. You Have Just Had To Restore From Backup And Do Not Have Any Control Files. How Would You Go About Bringing Up This Database?

Would create a text based backup control file, stipulating where on disk all the data files where and then issue the recover command with the using backup control file clause.

44. Write the Mandatory Keywords In A Pl/sql Program Block?

The BEGIN and END keywords are mandatory for any PL/SQL block.

45. Can Arrays Be Used Within A Pl/sql Program Block?

Yes, arrays can be defined and used in a PL/SQL block using the composite datatypes, such as RECORD, TABLE, NESTED TABLE, and VARRAY.

46. Can A Variable Be Assigned A Value From Database? If Yes, Then How?

Yes, a variable can be assigned a value from a database. You can fetch the value from the database and assign it to the variable using the into keyword, as shown in the following code:

```
select emp_sal * 0.20 into var_increment from  
t_employeed where emp_no = emp_id
```

47. Does A Not Null Constraint Of A Database Column Apply To %type Variables ?

No, a NOT NULL constraint does not apply to variables declared using the %TYPE attribute.

48. Can Sql Group Functions Be Used Within The Procedural Statements?

The SQL group functions, such as AVG, MIN, MAX, COUNT, SUM, STDDEV, and VARIANCE, cannot be directly used within PL/SQL. However, they can be embedded within SQL statements and then can be utilized in the procedural statements.

49. Can Ddl Commands Be Used Within A Procedure? If So, Then How?

DDL commands, such as create, alter, revoke, and grant, cannot be used directly within the procedural language block. They can only be called using built-in Native Dynamic SQL or Dynamic SQL Package, which allows the execution of the DDL statements at runtime.

50. What Is The Difference Between Implicit Cursor And Explicit Cursor?

A cursor is a SQL memory work area. Any SQL statement always uses a cursor for the execution of statements and fetching of results. This is implicitly defined and is called implicit cursor.

DEPARTMENT OF COMPUTER SCIENCE(SF)
II-B.SC-17UCS308-DATABASE MANAGEMENT SYSTEM AND ORACLE
III-SEMESTER (2107-20120)BATCH
K 3 –LEVEL QUESTIONS

UNIT -I

1. Apply integrity rules in database management system
2. Construct the rules for 1NF, 2NF, 3NF and 4NF.
3. Illustrate a note on denormalization.
4. Demonstrate cardinality relationship.
5. Examine the difference between RDBMS and DBMS.
6. Calculate multi valued dependency and join dependency in normalization.
7. Choose the function and transitive dependency.
8. Relate the following Relational Algebraic operation.
9. Organise the Database management system
10. Solve the theory of Relational calculus.

UNIT -II

11. Find the Elements of structured query languages.
12. Practice SQL worksheet in rdbms.
13. Show the Attributes of entity relationship model .
14. Relate Data flow diagrams.
15. Illustrate Codd's rules in detail.
16. Apply the semantics of Oracle 9i introduction
17. Choose the Alternate text editors.
18. Develop oracle using Isql*plus.
19. Compute Sql*plus commands.
20. Find the Logging system in Sql*plus.

UNIT -III

1. Find the operations used to alter existing tables.
2. Practice the create command with syntax and example.
3. Relate updating and existing rows/records.
4. Examine about deleting existing row/records.

5. Relate a short note on retrieving data from table.
6. Illustrate the syntax and example to ADD a new row/record.
7. Apply Restricting data with WHERE clause.
8. Choose a built –in-function.
9. Develop arithmetic operations.
10. Compute the case structure in tables.

UNIT -IV

1. Find the PL/SQL block structure with an example.
2. Practice the data type conversion in PL/SQL.
3. Relate various data types in PL/SQL?
4. Show the difference between PL/SQL?
5. Examine the advantages & Disadvantages of SQL.
6. Apply the additional features of PL/SQL?
7. Sketch the fundamentals of PL/SQL?
8. Relate the operator precedence in PL/SQL.
9. Illustrate the process of declaration in PL/SQL.
10. Apply the process of declaration in PL/SQL.

UNIT -V

1. Find exceptions and Discuss its types.
2. Practice the cursor for loops.
3. Relate explicit and implicit cursors.
4. Show the differences between V arrays and nested tables.
5. Examine trigger? And how to create a trigger with proper example.
6. Apply the command select for update
7. Sketch the data dictionary views.
8. Relate cursor with parameters.
9. Illustrate cursor variables.
10. Apply composite data types.

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III-SEMESTER (2107-20120)BATCH

K 4 and K5 – LEVEL QUESTIONS(RDBMS)

UNIT –I

1. Create data base design for an organisation
- 2.Explain dependency diagrams.
- 3.combine integrity rules.
- 4.Organise all normal forms.
- 5.rearrange denormalization.

UNIT –II

1. Originate entity relationship model.
2. Assemble codd's rules.
3. Rewrite errors in sql*plus commands.
4. Compose sql*plus worksheet.
5. Establish Alternate text editors.

UNIT –III

1. Compile updating and deleting commands in DML.
2. Formulate customized prompts.
3. Determine arithmetic operations.
4. Outline sorting commands in sql.
5. Analyse CASE structure in sql.

UNIT –IV

1. classify joins commands in pl/sql.
2. experiment,set operations.
3. point out assignment operators and its syntax.

4. separate truncation control statements.
5. appraise nested blocks inpl/sql.

UNIT –V

1. Explain V-Arrays in detail.
2. Analyse data dictionary views.
3. Formulate records and tables in pl/sql.
4. Establish exceptions and its types.
5. classify implicit and explicit cursors.