Unit 1: File Structure and Organization

Q:1) If a piece of data is stored in two places in the database, then
A:) Storage space is wasted
B:) Changing the data in one spot will cause data inconsistency
C:) In can be more easily accessed
D:) Storage space is wasted & Changing the data in one spot will cause data inconsistency

Correct: D
Explanation: The database is always consistent and so there is no duplication.

Q:2) An audit trail _____
A:) Is used to make backup copies
B:) Is the recorded history of operations performed on a file
C:) Can be used to restore lost information
D:) None of the mentioned

Correct: B
Explanation: This is more useful for all recovery actions.

Q:3) Large collection of files are called _____
A:) Fields
B:) Records
C:) Database
D:) Sectors

Correct: C
Explanation: The operator tree has a tree like format where the evaluation starts from root of the tree .

Q:4) Which of the following hardware component is the most important to the operation of a database management system?
A:) High resolution video display
B:) Printer
C:) High speed, large capacity disk
D:) Mouse

Correct: C
Explanation: All the data are stored in form of memory in the disk.

Q:5)Which of the following is not true of the traditional approach to information processing
A:) There is common sharing of data among the various applications
B:) It is file oriented
C:) Programs are dependent on the file
D:) It is inflexible

Correct: A
Explanation: All the data are stored in form of memory in the disk.

Q:6) Which of these is not a feature of Hierarchical model?
A:) Organizes the data in tree-like structure
B:) Parent node can have any number of child nodes
C:) Root node does not have any parent
D:) Child node can have any number of parent nodes

Correct: D
Explanation: The data are traversed using several algorithms.

Q:7) Which of these data models is an extension of the relational data model?
A:) Object-oriented data model
B:) Object-relational data model
C:) Semi structured data model
D:) None of the mentioned

Correct: B
Explanation: All the data are stored in form of memory in the disk.

Q:8)The information about data in a database is called _____
A:) Metadata
B:) Hyper data
C:) Tera data
D:) None of the mentioned

Correct: A
Explanation: Metadata is information about a datA:)

Q:9)A data dictionary is a special file that contains?
A:) The names of all fields in all files
B:) The data types of all fields in all files
C:) The widths of all fields in all files
D:) All of the mentioned

Correct: D
Explanation: The data dictionary is structured in tables and views, just like other database datA:)

Q:10) The DBMS acts as an interface between what two components of an enterprise-class database system?
A:) Database application and the database
B:) Data and the database
C:) The user and the database application
D:) Database application and SQL

Correct: A
Explanation: Database application is the interface with the user to access the database

Q:11)A relational database system needs to maintain data about the relations, such as the schema of the relations. This is called
A:) Metadata
B:) Catalog
C:) Log
D:) Dictionary

Correct: A
Explanation: Each side of a platter of a disk has a read–write head that moves across the platter to access different tracks.

Q:12) Relational schemas and other metadata about relations are stored in a structure called the _____
A:) Metadata
B:) Catalog

C:) Log
D:) Data Dictionary

Correct: D
Explanation: Data dictionary is also called as system catalog.

Q:13) _____ is the collection of memory structures and Oracle background processes that operates against an Oracle database.
A:) Database
B:) Instance
C:) Tablespace
D:) Segment

Correct: B
Explanation: Instance is a snapshot of database at any point of time.

Q:14)A _____ is a logical grouping of database objects, usually to facilitate security, performance, or the availability of database objects such as tables and indexes.
A:) Tablespace
B:) Segments
C:) Extents
D:) Blocks

Correct: A
Explanation: A tablespace is a storage location where the actual data underlying database objects can be kept.

Q:15) A tablespace is further broken down into _____
A:) Tablespace
B:) Segments
C:) Extents
D:) Blocks

Correct: B
Explanation: Segment names are used in create table and create index commands to place tables or indexes on specific database devices.

Q:16) _____ is a contiguous group of blocks allocated for use as part of a table, index, and so forth.
A:) Tablespace
B:) Segment
C:) Extent
D:) Block

Correct: C
Explanation: An extent is a set of contiguous blocks allocated in a database.

Q:17) _____ is the smallest unit of allocation in an Oracle database.
A:) Database
B:) Instance
C:) Tablespace
D:) Database Block

Correct: D
Explanation: Data block is a form of database space allocation.

Q:18) An Oracle _____ is a set of tables and views that are used as a read-only reference about the database.
A:) Database dictionary
B:) Dictionary table
C:) Data dictionary
D:) Dictionary

Correct: C
Explanation: Data dictionary is also called as system catalog.

Q:19) A data dictionary is created when a _____ created.
A:) Instance
B:) Segment
C:) Database
D:) Dictionary

Correct: C
Explanation: Data dictionary is also called as system catalog.

Q:20) An Oracle object type has two parts the _____ and_____
A:) Instance and body
B:) Segment and blocks
C:) Specification and body
D:) Body and segment

Correct: C
Explanation: Segment names are used in create table and create index commands to place tables or indexes on specific database devices. An extent is a set of contiguous blocks allocated in a database.

Q:21) A(n) _____ can be used to preserve the integrity of a document or a message.
A:) Message digest
B:) Message summary
C:) Encrypted message
D:) None of the mentioned

Correct: C
Explanation: Encryption algorithms are used to keep the contents safe.

Q:22) A hash function must meet _____ criteriA:)
A:) Two
B:) Three
C:) Four
D:) None of the mentioned

Correct: B
Explanation: Only if the criteria is fulfilled the values are hashed.

Q:23) What is the main limitation of Hierarchical Databases?
A:) Limited capacity (unable to hold much datA:)
B:) Limited flexibility in accessing data
C:) Overhead associated with maintaining indexes
D:) The performance of the database is poor

Correct: B
Explanation: In this, the data items are placed in a tree like hierarchical structure.

Q:24) The property (or set of properties) that uniquely defines each row in a table is called the:
A:) Identifier
B:) Index
C:) Primary key
D:) Symmetric key

Correct: C
Explanation: Primary is used to uniquely identify the tuples.

Q:25) The separation of the data definition from the program is known as:
A:) Data dictionary
B:) Data independence
C:) Data integrity
D:) Referential integrity

Correct: B
Explanation: Data dictionary is the place where the meaning of the data are organized.

Q:26) In the client / server model, the database:
A:) Is downloaded to the client upon request
B:) Is shared by both the client and server
C:) Resides on the client side
D:) Resides on the server side

Correct: D
Explanation: The server has all the database information and the client access it.

Q:27) The traditional storage of data that is organized by customer, stored in separate folders in filing cabinets is an example of what type of 'database' system?
A:) Hierarchical
B:) Network
C:) Object oriented
D:) Relational

Correct: A
Explanation: Hierarchy is based on Parent-Child Relationship. Parent-Child Relationship Type is basically 1:N relationship.

Q:28) The database design that consists of multiple tables that are linked together through matching data stored in each table is called
A:) Hierarchical database
B:) Network database
C:) Object oriented database
D:) Relational database

Correct: D
Explanation: A relational database is a collection of data items organized as a set of formally described tables from which data can be accessed or reassembled.

Q:29) The association role defines:
A:) How tables are related in the database
B:) The relationship between the class diagram and the tables in the database
C:) The tables that each attribute is contained
D:) Which attribute is the table's primary key

Correct: A
Explanation: The tables are always related in the database to form consistency.

Q:30) The purpose of an N-Ary association is:
A:) To capture a parent-child relationship
B:) To deal with one to many relationships
C:) To deal with relationships that involve more than two tables
D:) To represent an inheritance relationship

Correct: C
Explanation: The is binary n-array association meaning more than two classes are involved in the relationship.

Q:31) In ordered indices the file containing the records is sequentially ordered, a _____ is an index whose search key also defines the sequential order of the file.
A:) Clustered index
B:) Structured index
C:) Unstructured index
D:) Nonclustered index

Correct: A
Explanation: Clustering index are also called primary indices; the term primary index may appear to denote an index on a primary key, but such indices can in fact be built on any search key.

Q:32) Indices whose search key specifies an order different from the sequential order of the file are called _____ indices.
A:) Nonclustered
B:) Secondary
C:) All of the mentioned
D:) None of the mentioned

Correct: C
Explanation: Nonclustering index is also called secondary indices.

Q:33) An _____ consists of a search-key value and pointers to one or more records with that value as their search-key value.
A:) Index entry
B:) Index hash
C:) Index cluster
D:) Index map

Correct: A
Explanation: The pointer to a record consists of the identifier of a disk block and an offset within the disk block to identify the record within the block.

Q:34)In a _____ clustering index, the index record contains the search-key value and a pointer to the first data record with that search-key value and the rest of the records will be in the sequential pointers.
A:) Dense

B:) Sparse
C:) Straight
D:) Continuous

Correct: A
Explanation: In a dense nonclustering index, the index must store a list of pointers to all records with the same search-key value.

Q:35) In a _____ index, an index entry appears for only some of the search-key values.
A:) Dense
B:) Sparse
C:) Straight
D:) Continuous

Correct: A
Explanation: Sparse indices can be used only if the relation is stored in sorted order of the search key, that is if the index is a clustering index.

Q:36) Incase the indices values are larger, index is created for these values of the index. This is called
A:) Pointed index
B:) Sequential index
C:) Multilevel index
D:) Multiple index

Correct: C
Explanation: Indices with two or more levels are called multilevel indices.

Q:37)A search key containing more than one attribute is referred to as a _____ search key.
A:) Simple
B:) Composite
C:) Compound
D:) Secondary

Correct: B
Explanation: The structure of the index is the same as that of any other index, the only difference being that the search key is not a single attribute, but rather is a list of attributes.

Q:38)In B+ tree the node which points to another node is called
A:) Leaf node
B:) External node
C:) Final node
D:) Internal node

Correct: D
Explanation: Nonleaf nodes are also referred to as internal nodes.

Q:39)Insertion of a large number of entries at a time into an index is referred to as _____ of the index.
A:) Loading
B:) Bulk insertion
C:) Bulk loading
D:) Increase insertion

Correct: C
Explanation: Bulk loading is used to improve efficiency and scalability.

Q:40) While inserting the record into the index, if the search-key value does not appear in the index.
A:) The system adds a pointer to the new record in the index entry
B:) The system places the record being inserted after the other records with the same search-key values
C:) The system inserts an index entry with the search-key value in the index at the appropriate position
D:) None of the mentioned

Correct: C
Explanation: If the index entry stores pointers to all records with the same search key value, the system adds a pointer to the new record in the index entry.

Q:41)A collection of data designed to be used by different people is called a/an
A:) Organization
B:) Database
C:) Relationship
D:) Schema

Correct: B
Explanation: Database is a collection of related tables.

Q:42)Which of the following is the oldest database model?
A:) Relational
B:) Deductive
C:) Physical
D:) Network

Correct: D
Explanation: The network model is a database model conceived as a flexible way of representing objects and their relationships.

Q:43)Which of the following schemas does define a view or views of the database for particular users?
A:) Internal schema
B:) Conceptual schema
C:) Physical schema
D:) External schema

Correct: D
Explanation: An externally-defined schema can provide access to tables that are managed on any PostgreSQL, Microsoft SQL Server, SAS, Oracle, or MySQL database.

Q:44)Which of the following is an attribute that can uniquely identify a row in a table?
A:) Secondary key
B:) Candidate key
C:) Foreign key
D:) Alternate key

Correct: B
Explanation: A Candidate Key can be any column or a combination of columns that can qualify as unique key in database.

Q:45)Which of the following are the process of selecting the data storage and data access characteristics of the database?
A:) Logical database design
B:) Physical database design
C:) Testing and performance tuning
D:) Evaluation and selecting

Correct: B
Explanation: The physical design of the database optimizes performance while ensuring data integrity by avoiding unnecessary data redundancies.

Q:46)Which of the following terms does refer to the correctness and completeness of the data in a database?
A:) Data security
B:) Data constraint
C:) Data independence
D:) Data integrity

Correct: D
Explanation: ACID property is satisfied by transaction in database.

Q:47)The relationship between DEPARTMENT and EMPLOYEE is a
A:) One-to-one relationship
B:) One-to-many relationship
C:) Many-to-many relationship
D:) Many-to-one relationship

Correct: B
Explanation: One entity department is related to several employees.

Q:48)A table can be logically connected to another table by defining a
A:) Super key
B:) Candidate key
C:) Primary key

D:) Unique key

Correct: C
Explanation: A superkey is a combination of attributes that can be uniquely used to identify a database record.

Q:49)If the state of the database no longer reflects a real state of the world that the database is supposed to capture, then such a state is called
A:) Consistent state
B:) Parallel state
C:) Durable state
D:) Inconsistent state

Correct: D
Explanation: SQL data consistency is that whenever a transaction is performed, it sees a consistent database.

Q:50) Ensuring isolation property is the responsibility of the
A:) Recovery-management component of the DBMS
B:) Concurrency-control component of the DBMS
C:) Transaction-management component of the DBMS
D:) Buffer management component in DBMS

Correct: B
Explanation: Concurrency control ensures that correct results for concurrent operations are generated while getting those results as quickly as possible.

Unit 2:Database Management System

Q:1)A collection of related data.
A:) Information
B:) Valuable information
C:) Database
D:) Metadata

Correct: C
Explanation: Database is the collection of related data and its metadata organized in a structured format. It is designed for optimized information management.

Q:2) DBMS is software.
A:) True
B:) False

Correct: A
Explanation: The statement is true. DBMS stands for Database Management System. It enables easy creation and access of the database.

Q:3)DBMS manages the interaction between _____ and database.
A:) Users
B:) Clients
C:) End Users
D:) Stake Holders

Correct: C
Explanation: DBMS manages the interaction between the end users and the database. End users are the final users that interact with the database.

Q:4) Which of the following is not involved in DBMS?
A:) End Users
B:) Data
C:) Application Request
D:) HTML

Correct: D
Explanation: HTML isn't involved in Database Management System. Other things like the data and application request are a part of the DBMS.

Q:5) Database is generally _____
A:) System-centered
B:) User-centered
C:) Company-centered
D:) Data-centered

Correct: B
Explanation: Database is user-centered. The perspective is that the user is always right. If there is a problem with the use of the system, the system is the problem, not the user.

Q:6) A characteristic of an entity.
A:) Relation
B:) Attribute
C:) Parameter
D:) Constraint

Correct: B
Explanation: An attribute is a characteristic of an entity. The association among the entities is described by the relationship.

Q:7) The restrictions placed on the data.
A:) Relation
B:) Attribute
C:) Parameter
D:) Constraint

Correct: D
Explanation: Constraint is a restriction that is placed on the data. Attribute is the characteristic and the relation describes the association.

Q:8) IMS stands for?
A:) Information Mastering System
B:) Instruction Management System
C:) Instruction Manipulating System

D:) Information Management System

Correct: D
Explanation: IMS stands for Information Management System. It is developed to manage large amounts of data for complex projects.

Q:9) A model developed by Hammer and Mc Leod in 1981.
A:) SDM
B:) OODBM
C:) DDM
D:) RDM

Correct: A
Explanation: SDM stands for Semantic Data Model. It models both data and their relationships in a single structure.

Q:10) Object=_____+relationships.
A:) data
B:) attributes
C:) entity
D:) constraints

Correct: C
Explanation: The answer is entity. It is a part of OODBM (Object-Oriented Database Model). It maintains the advantages of ER-model but adds more feature

Q:11)Duplication of data at several places is called as _____.

A:) Data Inconsistency

B:) Data Isolation

C:) Atomicity Problem

D:) Data Redundance

Correct:D

Q:12) Data Redundancy increases the cost of storing and retrieving data.

A:) False
B:) True

Correct:B

Q:13)Which of the information is not redundant.

A:) name

B:) mobile

C:) account-no

D:) address

Correct:C

Q:14) If in redundant file common fields are not matching then it results in _____.

A:) Data Inconsistency
B:) Data Integrity Problem
C:) Data Isolation
D:) Data Redundancy

Correct:A

Q:15) It is difficult to access conventional file system than Database System.

A)True

B)False

Correct:A

Q:16) An _____ is a set of entities of the same type that share the same properties, or attributes.
A:) Entity set
B:) Attribute set
C:) Relation set
D:) Entity model

Correct: A
Explanation: An entity is a "thing" or "object" in the real world that is distinguishable from all other objects.

Q:17) Entity is a _____
A:) Object of relation
B:) Present working model
C:) Thing in real world
D:) Model of relation

Correct: C
Explanation: For example, each person in a university is an entity.

Q:18)The descriptive property possessed by each entity set is _____
A:) Entity
B:) Attribute
C:) Relation
D:) Model

Correct: B
Explanation: Possible attributes of the instructor entity set are ID, name, dept name, and salary.

Q:19)The function that an entity plays in a relationship is called that entity's _____
A:) Participation
B:) Position
C:) Role
D:) Instance

Correct: C
Explanation: A relationship is an association among several entities.

Q:20)The attribute *name* could be structured as an attribute consisting of first name, middle initial, and last name. This type of attribute is called
A:) Simple attribute
B:) Composite attribute
C:) Multivalued attribute
D:) Derived attribute

Correct: B
Explanation: Composite attributes can be divided into subparts (that is, other attributes).

Q:21)The attribute AGE is calculated from DATE_OF_BIRTH. The attribute AGE is
A:) Single valued
B:) Multi valued
C:) Composite
D:) Derived

Correct: D
Explanation: The value for this type of attribute can be derived from the values of other related attributes or entities.

Q:22)Not applicable condition can be represented in relation entry as
A:) NA
B:) 0
C:) NULL
D:) Blank Space

Correct: C
Explanation: NULL always represents that the value is not present.

Q:23) Which of the following can be a multivalued attribute?
A:) Phone_number
B:) Name
C:) Date_of_birth
D:) All of the mentioned

Correct: A
Explanation: Name and Date_of_birth cannot hold more than 1 value.

Q:24)Which of the following is a single valued attribute
A:) Register_number
B:) Address
C:) SUBJECT_TAKEN
D:) Reference

Correct: A
Explanation: None.

Q:25) In a relation between the entities the type and condition of the relation should be specified. That is called as_____attribute.
A:) Desciptive
B:) Derived
C:) Recursive
D:) Relative

Correct: A
Explanation: Consider the entity sets student and section, which participate in a relationship set takes. We may wish to store a descriptive attribute grade with the relationship to record the grade that a student got in the class.

Q:26) _____ can help us detect poor E-R design.
A:) Database Design Process
B:) E-R Design Process
C:) Relational scheme
D:) Functional dependencies

Correct: D
Explanation: For eg.,Suppose an instructor entity set had attributes dept name and dept address, and there is a functional dependency dept name -> dept address.

Q:27) If a multivalued dependency holds and is not implied by the corresponding functional dependency, it usually arises from one of the following sources.
A:) A many-to-many relationship set
B:) A multivalued attribute of an entity set
C:) A one-to-many relationship set

D:) Both A many-to-many relationship set and A multivalued attribute of an entity set

Correct: D
Explanation: For a many-to-many relationship set each related entity set has its own schema and there is an additional schema for the relationship set. For a multivalued attribute, a separate schema is created consisting of that attribute and the primary key of the entity set.

Q:28)Which of the following has each related entity set has its own schema and there is an additional schema for the relationship set.
A:) A many-to-many relationship set
B:) A multivalued attribute of an entity set
C:) A one-to-many relationship set
D:) All of the mentioned

Correct: A
Explanation: If a multivalued dependency holds and is not implied by the corresponding functional dependency, it usually arises from this source.

Q:29) In which of the following, a separate schema is created consisting of that attribute and the primary key of the entity set.
A:) A many-to-many relationship set
B:) A multivalued attribute of an entity set
C:) A one-to-many relationship set
D:) All of the mentioned

Correct: B
Explanation: If a multivalued dependency holds and is not implied by the corresponding functional dependency, it usually arises from this source.

Q:30) Suppose the user finds the usage of *room number* and *phone number* in a relational schema there is confusion.This is reduced by
A:) Unique-role assumption
B:) Unique-key assignment
C:) Role intergral assignment
D:) None of the mentioned

Correct: A
Explanation: A desirable feature of a database design is the unique-role assumption, which means that each attribute name has a unique meaning in the database.

Q:31) What is the best way to represent the attributes in a large database?
A:) Relational-and
B:) Concatenation
C:) Dot representation
D:) All of the mentioned

Correct: B
Explanation: Example inst sec and student sec.

Q:32)Designers use which of the following to tune the performance of systems to support time-critical operations?
A:) Denormalization
B:) Redundant optimization
C:) Optimization
D:) Realization

Correct: A
Explanation: The process of taking a normalized schema and making it nonnormalized is called denormalization.

Q:33)In the schema (dept name, size) we have relations *total inst 2007, total inst 200Q:8)* Which dependency have lead to this relation ?
A:) Dept name, year->size
B:) Year->size
C:) Dept name->size
D:) Size->year

Correct: A
Explanation: The process of taking a normalized schema and making it nonnormalized is called denormalization.

Q:34) Relation *dept year(dept name, total inst 2007, total inst 2008, total inst 2009)*. Here the only functional dependencies are from dept name to the other attributes. This relation is in
A:) Fourth NF

B:) BCNF
C:) Third NF
D:) Second NF

Correct: B
Explanation: BCNF has only one normal form.

Q:35) Thus a _____ of course data gives the values of all attributes, such as title and department, of all courses at a particular point in time.
A:) Instance
B:) Snapshot
C:) Both Instance and Snapshot
D:) All of the mentioned

Correct: B
Explanation: We use the term snapshot of data to mean the value of the data at a particular point in time.

Q:36) Representations such as the in the dept year relation, with one column for each value of an attribute, are called _____ they are widely used in spreadsheets and reports and in data analysis tools.
A:) Cross-tabs
B:) Snapshot
C:) Both Cross-tabs and Snapshot
D:) All of the mentioned

Correct: A
Explanation: SQL includes features to convert data from a normal relational representation to a crosstab.

Q:37)Data Model is collection of conceptual tools for describing -

A:) Data

B:) All of these

C:) Data Schema

D:) Consistency Constaints

Correct:B

Q:38)Data Models in DBMS are classified into _____ categories.

A:) 3

B:) 2

C:) 5

D:) 4

Correct:C

Q:39)Object based logical model(s) are used to describe data at - [Select Appropriate Option(s)]

A:) View Level

B:) Logical Level

C:) Physical Level

D:) None of these

Correct:C

Q:40)Which of the following is example of Object based logical model ?

A:) Relational Model

B:) Hierarchical Model

C:) Network Model

D:) Entity Relationship Model

Correct:D

Q:41)Entity Relationship model consists of collection of basic objects called _____ and relationship among these objects.

A:) functions

B:) models

C:) None of these

D:) entities

Correct:D

Q:42)Which of the following is a Data Model?

A:) Entity-Relationship model
B:) Relational data model
C:) Object-Based data model
D:) All of the above

Correct:D

Q:43) This set of Database Multiple Choice Questions & Answers (MCQs) focuses on "Entity-Relationship Diagrams".

1. Which of the following gives a logical structure of the database graphically?
A:) Entity-relationship diagram
B:) Entity diagram
C:) Database diagram
D:) Architectural representation

Correct: A
Explanation: E-R diagrams are simple and clear—qualities that may well account in large part for the widespread use of the E-R model.

Q:44) The entity relationship set is represented in E-R diagram as
A:) Double diamonds
B:) Undivided rectangles
C:) Dashed lines
D:) Diamond

Correct: D
Explanation: Dashed lines link attributes of a relationship set to the relationship set.

Q:45)The Rectangles divided into two parts represents
A:) Entity set
B:) Relationship set
C:) Attributes of a relationship set
D:) Primary key

Correct: A
Explanation: The first part of the rectangle, contains the name of the entity set. The second part contains the names of all the attributes of the entity set.

Q:46) Consider a directed line(->) from the relationship set advisor to both entity sets instructor and student. This indicates _____ cardinality
A:) One to many
B:) One to one
C:) Many to many
D:) Many to one

Correct: B
Explanation: This indicates that an instructor may advise at most one student, and a student may have at most one advisor.

Q:47) We indicate roles in E-R diagrams by labeling the lines that connect _____ to _____
A:) Diamond , diamond
B:) Rectangle, diamond
C:) Rectangle, rectangle
D:) Diamond, rectangle

Correct: D
Explanation: Diamond represents a relationship set and rectangle represents a entity set.

Q:48)An entity set that does not have sufficient attributes to form a primary key is termed a _____

A:) Strong entity set
B:) Variant set
C:) Weak entity set
D:) Variable set

Correct: C
Explanation: An entity set that has a primary key is termed a strong entity set.

Q:49) For a weak entity set to be meaningful, it must be associated with another entity set, called the
A:) Identifying set
B:) Owner set
C:) Neighbour set
D:) Strong entity set

Correct: A
Explanation: Every weak entity must be associated with an identifying entity; that is, the weak entity set is said to be existence dependent on the identifying entity set. The identifying entity set is said to own the weak entity set that it identifies. It is also called as owner entity set.

Q:50) Weak entity set is represented as
A:) Underline
B:) Double line
C:) Double diamond
D:) Double rectangle

Correct: C
Explanation: An entity set that has a primary key is termed a strong entity set.

Q:51) If you were collecting and storing information about your music collection, an album would be considered a(n) _____
A:) Relation
B:) Entity
C:) Instance

D:) Attribute

Correct: B
Explanation: An entity set is a logical container for instances of an entity type and instances of any type derived from that entity type.

Q:52) What term is used to refer to a specific record in your music database; for instance; information stored about a specific album?
A:) Relation
B:) Instance
C:) Table
D:) Column

Correct: B
Explanation: The environment of database is said to be an instance. A database instance or an 'instance' is made up of the background processes needed by the database.

Unit 3: Relational Model

Q:1) Relational Algebra is a _____ query language that takes two relations as input and produces another relation as an output of the query.
A:) Relational
B:) Structural
C:) Procedural
D:) Fundamental

Correct: C
Explanation: This language has fundamental and other operations which are used on relations.

Q:2)Which of the following is a fundamental operation in relational algebra?
A:) Set intersection
B:) Natural join
C:) Assignment
D:) None of the mentioned

Correct: D
Explanation: The fundamental operations are select, project, union, set difference, Cartesian product, and rename.

Q:3)Which of the following is used to denote the selection operation in relational algebra?
A:) Pi (Greek)
B:) Sigma (Greek)
C:) Lambda (Greek)
D:) Omega (Greek)

Correct: B
Explanation: The select operation selects tuples that satisfy a given predicate.

Q:4)For select operation the _____ appear in the subscript and the _____ argument appears in the paranthesis after the sigmA:)
A:) Predicates, relation
B:) Relation, Predicates
C:) Operation, Predicates

D:) Relation, Operation

Correct: A
Explanation: None.

Q:5)The _____ operation, denoted by −, allows us to find tuples that are in one relation but are not in another.
A:) Union
B:) Set-difference
C:) Difference
D:) Intersection

Correct: B
Explanation: The expression r − s produces a relation containing those tuples in r but not in s.

Q:6)Which is a unary operation:
A:) Selection operation
B:) Primitive operation
C:) Projection operation
D:) Generalized selection

Correct: D
Explanation: Generalization Selection takes only one argument for operation.

Q:7)Which is a join condition contains an equality operator:
A:) Equijoins
B:) Cartesian
C:) Natural
D:) Left

Correct: A
Explanation: None.

Q:8)In precedence of set operators, the expression is evaluated from
A:) Left to left
B:) Left to right
C:) Right to left

D:) From user specification

Correct: B
Explanation: The expression is evaluated from left to right according to the precedence.

Q:9)Which of the following is not outer join?
A:) Left outer join
B:) Right outer join
C:) Full outer join
D:) All of the mentioned

Correct: D
Explanation: The FULL OUTER JOIN keyword combines the result of both LEFT and RIGHT joins.

Q:10) The assignment operator is denoted by
A:) ->
B:) <-
C:) =
D:) ==

Correct: B

Q:11) Which one of the following is a set of one or more attributes taken collectively to uniquely identify a record?
A:) Candidate key
B:) Sub key
C:) Super key
D:) Foreign key

Correct: C
Explanation: Super key is the superset of all the keys in a relation.

Q:12) Consider attributes ID, CITY and NAME. Which one of this can be considered as a super key?
A:) NAME
B:) ID

C:) CITY
D:) CITY, ID

Correct: B
Explanation: Here the id is the only attribute which can be taken as a key. Other attributes are not uniquely identified.

Q:13)The subset of a super key is a candidate key under what condition?
A:) No proper subset is a super key
B:) All subsets are super keys
C:) Subset is a super key
D:) Each subset is a super key

Correct: A
Explanation: The subset of a set cannot be the same set. Candidate key is a set from a super key which cannot be the whole of the super set.

Q:14)A _____ is a property of the entire relation, rather than of the individual tuples in which each tuple is unique.
A:) Rows
B:) Key
C:) Attribute
D:) Fields

Correct: B
Explanation: Key is the constraint which specifies uniqueness.

Q:15)Which one of the following attribute can be taken as a primary key?
A:) Name
B:) Street
C:) Id
D:) Department

Correct: C
Explanation: The attributes name, street and department can repeat for some tuples. But the id attribute has to be unique. So it forms a primary key.

Q:16)Which one of the following cannot be taken as a primary key?
A:) Id
B:) Register number
C:) Dept_id
D:) Street

Correct: D
Explanation: Street is the only attribute which can occur more than once.

Q:17)An attribute in a relation is a foreign key if the _____ key from one relation is used as an attribute in that relation.
A:) Candidate
B:) Primary
C:) Super
D:) Sub

Correct: B
Explanation: The primary key has to be referred in the other relation to form a foreign key in that relation.

Q:18)The relation with the attribute which is the primary key is referenced in another relation. The relation which has the attribute as a primary key is called _____
A:) Referential relation
B:) Referencing relation
C:) Referenced relation
D:) Referred relation

Correct: C
Explanation: None.

Q:19)The _____ is the one in which the primary key of one relation is used as a normal attribute in another relation.
A:) Referential relation
B:) Referencing relation
C:) Referenced relation
D:) Referred relation

Correct: C
Explanation: None.

Q:20) A _____ integrity constraint requires that the values appearing in specified attributes of any tuple in the referencing relation also appear in specified attributes of at least one tuple in the referenced relation.
A:) Referential
B:) Referencing
C:) Specific
D:) Primary

Correct: A

Q:21) A relational database consists of a collection of
A:) Tables
B:) Fields
C:) Records
D:) Keys

Correct: A
Explanation: Fields are the column of the relation or tables. Records are each row in a relation. Keys are the constraints in a relation.

Q:22) A _____ in a table represents a relationship among a set of values.
A:) Column
B:) Key
C:) Row
D:) Entry

Correct: C
Explanation: Column has only one set of values. Keys are constraints and row is one whole set of attributes. Entry is just a piece of datA:)

Q:23) The term _____ is used to refer to a row.
A:) Attribute
B:) Tuple
C:) Field

D:) Instance

Correct: B
Explanation: Tuple is one entry of the relation with several attributes which are fields.

Q:24) The term attribute refers to a _____ of a table.
A:) Record
B:) Column
C:) Tuple
D:) Key

Correct: B
Explanation: Attribute is a specific domain in the relation which has entries of all tuples.

Q:25) For each attribute of a relation, there is a set of permitted values, called the _____ of that attribute.
A:) Domain
B:) Relation
C:) Set
D:) Schema

Correct: A
Explanation: The values of the attribute should be present in the domain. Domain is a set of values permitted.

Q:26) Database _____ which is the logical design of the database, and the database _____ which is a snapshot of the data in the database at a given instant in time.
A:) Instance, Schema
B:) Relation, Schema
C:) Relation, Domain
D:) Schema, Instance

Correct: D
Explanation: Instance is an instance of time and schema is a representation.

Q:27) Course(course_id,sec_id,semester)
Here the course_id,sec_id and semester are _____ and course is a _____

A:) Relations, Attribute
B:) Attributes, Relation
C:) Tuple, Relation
D:) Tuple, Attributes

Correct: B
Explanation: The relation course has a set of attributes course_id,sec_id,semester .

Q:28) Department (dept name, building, budget) and Employee (employee_id, name, dept name, salary)
Here the dept_name attribute appears in both the relations. Here using common attributes in relation schema is one way of relating _____ relations.
A:) Attributes of common
B:) Tuple of common
C:) Tuple of distinct
D:) Attributes of distinct

Correct: C
Explanation: Here the relations are connected by the common attributes.

Q:29) A domain is atomic if elements of the domain are considered to be _____ units.
A:) Different
B:) Indivisbile
C:) Constant
D:) Divisible

Correct: B
Explanation: None.

Q:30) The tuples of the relations can be of _____ order.
A:) Any
B:) Same
C:) Sorted
D:) Constant

Correct: A
Explanation: The values only count. The order of the tuples does not matter.

Q:31) Choose the correct statement regarding superkeys
A:) A superkey is an attribute or a group of multiple attributes that can uniquely identify a tuple
B:) A superkey is a tuple or a set of multiple tuples that can uniquely identify an attribute
C:) Every superkey is a candidate key
D:) A superkey is an attribute or a set of attributes that distinguish the relation from other relations

Correct : A
Explanation: A superkey is an attribute or a set of multiple attributes that can uniquely identify a tuple. It is used to differentiate between tuples.

Q:32) What is an Instance of a Database?
A:) The logical design of the database system
B:) The entire set of attributes of the Database put together in a single relation
C:) The state of the database system at any given point of time
D:) The initial values inserted into the Database immediately after its creation

Correct : C
Explanation: The state of the database system at any given point of time is called as an Instance of the database.

Q:33) What is a foreign key?
A:) A foreign key is a primary key of a relation which is an attribute in another relation
B:) A foreign key is a superkey of a relation which is an attribute in more than one other relations
C:) A foreign key is an attribute of a relation that is a primary key of another relation
D:) A foreign key is the primary key of a relation that does not occur anywhere else in the schema

Correct : C
Explanation: A foreign key is an attribute of a relation that is initially a primary key of another relation. A foreign key usage preserves referential integrity.

Q:34) What action does ⋈ operator perform in relational algebra
A:) Output specified attributes from all rows of the input relation and remove duplicate tuples from the output
B:) Outputs pairs of rows from the two input relations that have the same value on all attributes

that have the same name
C:) Output all pairs of rows from the two input relations (regardless of whether or not they have the same values on common attributes)
D:) Return rows of the input relation that satisfy the predicate

Correct : A
Explanation: ⋈ Outputs specified attributes from all rows of the input relation. Remove duplicate tuples from the output. The operation is called the join operation.

Q:35) What does the "x" operator do in relational algebra?
A:) Output specified attributes from all rows of the input relation. Remove duplicate tuples from the output
B:) Output pairs of rows from the two input relations that have the same value on all attributes that have the same name
C:) Output all pairs of rows from the two input relations (regardless of whether or not they have the same values on common attributes)
D:) Returns the rows of the input relation that satisfy the predicate

Correct : C
Explanation: The "x" operator outputs all pairs of rows from the two input relations (regardless of whether or not they have the same values on common attributes). This operation is called as the Cartesian product operation and is similar to the Cartesian product of sets.

Q:36) An attribute is a _____ in a relation.
A:) Row
B:) Column
C:) Value
D:) Tuple

Correct : B
Explanation: An attribute is a column in a relation. A tuple is a row in a relation.

Q:37) What is the method of specifying a primary key in a schema description?
A:) By writing it in bold letters
B:) By underlining it using a dashed line
C:) By writing it in capital letters

D:) By underlining it using a bold line

Correct : D
Explanation: We can specify a primary key in schema description by underlining the respective attribute with a bold line.

Q:38) Statement 1: A tuple is a row in a relation
Statement 2: Existence of multiple foreign keys in a same relation is possible
A:) Both the statements are true
B:) Statement 1 is correct but Statement 2 is false
C:) Statement 1 is false but Statement 2 is correct
D:) Both the statements are false

Correct : A
Explanation: A tuple is a row is a relation. There can exist multiple foreign keys in the same relation because there can exist multiple attributes in the relation that are primary keys in two or more other relations.

Q:39) Choose the option that correctly explains in words, the function of the following relational algebra expression
$\sigma_{year \geq 2009}$ (book ⋈ borrow)
A:) Selects all tuples from the Cartesian product of book and borrow
B:) Selects all the tuples from the natural join of book and borrow wherever the year is lesser than 2009
C:) Selects all the tuples from the natural join of book and student wherever the year is greater than or equal to 2009
D:) Selects all tuples from the Cartesian product of book and borrow wherever the year is greater than or equal to 2009

Correct : B
Explanation: The condition under the select statement represents the condition that must be satisfied by the tuples and the symbol ⋈ represents natural join between the two relations on either side of the operator.

Q:40) State true or false: If a relation consists of a foreign key, then it is called a referenced relation of the foreign key dependency.
A:) True

B:) False

Correct : B
Explanation: If a relation has a foreign key, then it is called a referencing relation of the foreign key dependency.

Q:41)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

Correct : C
Explanation: The SQL DDL does not specify the operations that are supposed to be made on the tuples. DDL means Data definition language, hence it does not include the operations made.

Q:42) Which of the following data types does the SQL standard not support?
A:) char(n)
B:) String(n)
C:) varchar(n)
D:) float(n)

Correct : B
Explanation: The SQL standard does not support String(n) but it supports char, varchar and float.

Q:43) Which command is used to create a new relation in SQL
A:) create table(, …)
B:) create relation(, …)
C:) new table(, …)
D:) new relation(, …)

Correct : A
Explanation: We use the create table command to create a new relation in the database. The syntax is
create table(, …);

Q:44) If a1, a2, a3 are attributes in a relation and S is another relation, which of the following is an incorrect specification of an integrity constraint?
A:) primary key(a1, a2, a3)
B:) primary key(a1)
C:) foreign key(a1, a2) references S
D:) foreign key(a1, a2)

Correct : D
Explanation: Whenever the integrity constraint foreign key is mentioned, the attributes that are the foreign keys should always be referenced from the relation in which they are primary keys.

Q:45) What is the syntax to load data into the database? (Consider D as the database and a, b, c as datA:)
A:) enter into D (a, b, C:);
B:) insert into D values (a, b, C:);
C:) insert into D (a, b, C:);
D:) insert (a, b, C:) values into D;

Correct : B
Explanation: To load data into a database we use the insert into command. The syntax is insert into D values (a, b, C:) where a, b, c are the appropriate values

Q:46) 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

Correct : A
Explanation: The drop table command is used to delete a relation from a database whereas the delete table removes all the tuples from a relation

Q:47) Which of the following commands do we use to delete all the tuples from a relation (R)?
A:) delete table R
B:) drop table R
C:) delete from R

D:) drop from R

Correct : C
Explanation: The delete from command is used to delete all the tuples in a relation. The drop table totally deletes a relation.

Q:48)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

Correct : B
Explanation: We can delete an attribute from a relation using the alter table command with the following syntax
alter table drop

Q:49)create table apartment(ownerID varchar (5), ownername varchar(25), floor numeric(4,0), primary key (ownerID:));
Choose the correct option regarding the above statement
A:) The statement is syntactically wrong
B:) It creates a relation with three attributes ownerID, ownername, floor in which floor cannot be null.
C:) It creates a relation with three attributes ownerID, ownername, floor in which ownerID cannot be null.
D:) It creates a relation with three attributes ownerID, ownername, floor in which ownername must consist of at least 25 characters.

Correct : C
Explanation: It creates a relation apartment with three attributes as specified. The attribute ownername cannot be null because it is the primary key of the relation.

Q:50) What does the notnull integrity constraint do?
A:) It ensures that at least one tuple is present in the relation
B:) It ensures that at least one foreign key is present in the relation
C:) It ensures that all tuples have a finite value on a specified attribute

D:) It ensures that all tuples have finite attributes on all the relations

Correct : C
Explanation: The notnull integrity constraint ensures that all the tuples have a finite value on the specified attribute in the relation. It avoids the specification of null values.

Unit 4:SQL

Q:1) Which SQL function is used to count the number of rows in a SQL query?

A:) COUNT()

B:) NUMBER()

C:) SUM()

D:) COUNT(*)

Correct:D

Explanation: COUNT(*) takes null value row in to consideration.

Q:2)Which SQL keyword is used to retrieve a maximum value?

A:) MOST

B:) TOP

C:) MAX

D:) UPPER

Correct:C

Explanation: The MAX() function returns the largest value of the selected column.

Q:3)Which of the following SQL clauses is used to DELETE tuples from a database table?

A:) DELETE

B:) REMOVE

C:) DROP

D:) CLEAR

Correct:A

Explanation: The SQL DELETE Query is used to delete the existing records from a table.

Q:4) _____removes all rows from a table without logging the individual row deletions.

A:) DELETE

B:) REMOVE

C:) DROP

D:) TRUNCATE

Correct:D

Explanation: TRUNCATE statement is a Data Definition Language (DDL) operation that marks the extents of a table for deallocation.

Q:5)Which of the following is not a DDL command?

A:) UPDATE

B:) TRUNCATE

C:) ALTER

D:) None of the Mentioned

Correct:A

Explanation: Data definition language (DDL) commands enable you to perform the following tasks:Create, alter, and drop schema objects.

Q:6) Which of the following are TCL commands?

A:) UPDATE and TRUNCATE

B:) SELECT and INSERT

C:) GRANT and REVOKE

D:) ROLLBACK and SAVEPOINT

Correct:D

Explanation: Transaction control commands manage changes made by DML commands. These SQL commands are used for managing changes affecting the data.

Q:7) _____ is not a category of SQL command.

A:) TCL

B:) SCL

C:) DCL

D:) DDL

Correct:B

Explanation: SQL commands can be used not only for searching the database but also to perform various other functions.They are DDL,DML,TCL and DCL.

Q:8) If you don't specify ASC or DESC after a SQL ORDER BY clause, the following is used by default _____

A:) ASC

B:) DESC

C:) There is no default value

D:) None of the mentioned

Correct:A

Explanation: ASC is the default sort order. Null values are treated as the lowest possible values.

Q:9) Which of the following statement is true?

A:) DELETE does not free the space containing the table and TRUNCATE free the space containing the table

B:) Both DELETE and TRUNCATE free the space containing the table

C:) Both DELETE and TRUNCATE does not free the space containing the table

D:) DELETE free the space containing the table and TRUNCATE does not free the space containing the table

Correct:A

Explanation: The SQL TRUNCATE command is used to delete all the rows from the table and free the space containing the table.

Q:10) What is the purpose of the SQL AS clause?

A:) The AS SQL clause is used to change the name of a column in the result set or to assign a name to a derived column

B:) The AS clause is used with the JOIN clause only

C:) The AS clause defines a search condition

D:) All of the mentioned

Correct:A

Explanation: SQL Aliases are defined for columns and tables. Basically aliases are created to make the column selected more readable.

Q:11) What does DML stand for?
A:) Different Mode Level
B:) Data Model Language
C:) Data Mode Lane
D:) Data Manipulation language

Correct:D
Explanation: Data Manipulation Language is used to modify the records in the database.

Q:12)With SQL, how do you select all the records from a table named "Persons" where the value of the column "FirstName" ends with an "a"?
A:) SELECT * FROM Persons WHERE FirstName='a'
B:) SELECT * FROM Persons WHERE FirstName LIKE 'a%'
C:) SELECT * FROM Persons WHERE FirstName LIKE '%a'
D:) SELECT * FROM Persons WHERE FirstName='%a%'

Correct:C
Explanation: The SQL LIKE clause is used to compare a value to similar values using wildcard operators.

Q:13) With SQL, how can you return all the records from a table named "Persons" sorted descending by "FirstName"?
A:) SELECT * FROM Persons SORT BY 'FirstName' DESC
B:) SELECT * FROM Persons ORDER FirstName DESC
C:) SELECT * FROM Persons SORT 'FirstName' DESC
D:) SELECT * FROM Persons ORDER BY FirstName DESC

Correct:D
Explanation: The SQL SELECT statement queries data from tables in the database.

Q:14)With SQL, how can you return the number of not null records in the "Persons" table?
A:) SELECT COUNT() FROM Persons
B:) SELECT COLUMNS() FROM Persons
C:) SELECT COLUMNS(*) FROM Persons
D:) SELECT COUNT(*) FROM Persons

Correct:A
Explanation: COUNT(column_name) is used to count the number of rows of a table where column name is a column that does not allow NULL values.

Q:15)What does the ALTER TABLE clause do?
A:) The SQL ALTER TABLE clause modifies a table definition by altering, adding, or deleting table columns and/or constraints
B:) The SQL ALTER TABLE clause is used to insert data into database table

C:) THE SQL ALTER TABLE deletes data from database table
D:) The SQL ALTER TABLE clause is used to delete a database table

Correct:A
Explanation: The ALTER TABLE statement is used to add, delete, or modify columns.

Q:16)The UPDATE SQL clause can _____
A:) update only one row at a time
B:) update more than one row at a time
C:) delete more than one row at a time
D:) delete only one row at a time

Correct:B
Explanation: The SQL UPDATE Query is used to modify the existing records in a table. You can use WHERE clause with UPDATE query to update selected rows otherwise all the rows would be affected.

Q:17)The UNION SQL clause can be used with _____
A:) SELECT clause only
B:) DELETE and UPDATE clauses
C:) UPDATE clause only
D:) All of the mentioned

Correct:A
Explanation: The SQL UNION operator is used to combine the result sets of 2 or more SELECT statements. It removes duplicate rows between the various SELECT statements.

Q:18)Which SQL statement is used to return only different values?
A:) SELECT DIFFERENT
B:) SELECT UNIQUE
C:) SELECT DISTINCT
D:) SELECT ALL

Correct:C
Explanation: The SELECT DISTINCT statement is used to return only distinct (different) values.

Q:19)Which SQL keyword is used to sort the result-set?
A:) ORDER BY
B:) SORT
C:) ORDER
D:) SORT BY

Correct:A
Explanation: The ORDER BY keyword sorts the records in ascending order by default.

Q:20)How can you change “Hansen” into “Nilsen” in the “LastName” column in the Persons table?
A:) UPDATE Persons SET LastName=’Hansen’ INTO LastName=’Nilsen’
B:) MODIFY Persons SET LastName=’Nilsen’ WHERE LastName=’Hansen’
C:) MODIFY Persons SET LastName=’Hansen’ INTO LastName=’Nilsen’
D:) UPDATE Persons SET LastName=’Nilsen’ WHERE LastName=’Hansen’

Correct:D
Explanation: In its simplest form, the syntax for the UPDATE statement when updating one table is:UPDATE table SET column1 = expression1,column2 = expression2,… WHERE conditions.

Q:21) Which of the following command makes the updates performed by the transaction permanent in the database?
A:) ROLLBACK
B:) COMMIT
C:) TRUNCATE
D:) DELETE

Correct:B
Explanation: Commit command is used to permanently save any transaction into the database.

Q:22)Which TCL command undo all the updates performed by the SQL in the transaction?
A:) ROLLBACK
B:) COMMIT
C:) TRUNCATE

D:) DELETE

Correct:B
Explanation: Rollback is used for undoing the work done in the current transaction. This command also releases the locks if any hold by the current transaction.

Q:23)SQL query to find all the cities whose humidity is 95.
A:) SELECT city WHERE humidity = 95
B:) SELECT city FROM weather WHERE humidity = 95
C:) SELECT humidity = 89 FROM weather
D:) SELECT city FROM weather

Correct:B
Explanation: The SQL WHERE clause is used to filter the results and apply conditions in a SELECT, INSERT, UPDATE, or DELETE statement.

Q:24)SQL query to find the temperature in increasing order of all cities.
A:) SELECT city FROM weather ORDER BY temperature
B:) SELECT city, temperature FROM weather
C:) SELECT city, temperature FROM weather ORDER BY temperature
D:) SELECT city, temperature FROM weather ORDER BY city

Correct:D
Explanation: The ORDER BY keyword sorts the records in ascending order by default.

Q:25)What is the meaning of LIKE '%0%0%'?
A:) Feature begins with two 0's
B:) Feature ends with two 0's
C:) Feature has more than two 0's
D:) Feature has two 0's in it, at any position

Correct:D
Explanation: The LIKE operator is used in a WHERE clause to search for a specified pattern in a column.

Q:26)Find the names of these cities with temperature and condition whose condition is neither sunny nor cloudy.

A:) SELECT city, temperature, condition FROM weather WHERE condition NOT IN ('sunny', 'cloudy')
B:) SELECT city, temperature, condition FROM weather WHERE condition NOT BETWEEN ('sunny', 'cloudy')
C:) SELECT city, temperature, condition FROM weather WHERE condition IN ('sunny', 'cloudy')
D:) SELECT city, temperature, condition FROM weather WHERE condition BETWEEN ('sunny', 'cloudy');

Correct:A
Explanation: The IN operator allows you to specify multiple values in a WHERE clause.

Q:27)Find the name of those cities with temperature and condition whose condition is either sunny or cloudy but temperature must be greater than 70.
A:) SELECT city, temperature, condition FROM weather WHERE condition = 'sunny' AND condition = 'cloudy' OR temperature > 70
B:) SELECT city, temperature, condition FROM weather WHERE condition = 'sunny' OR condition = 'cloudy' OR temperature > 70
C:) SELECT city, temperature, condition FROM weather WHERE condition = 'sunny' OR condition = 'cloudy' AND temperature > 70
D:) SELECT city, temperature, condition FROM weather WHERE condition = 'sunny' AND condition = 'cloudy' AND temperature > 70

Correct:C
Explanation: The AND operator displays a record if both the first condition AND the second condition are true. The OR operator displays a record if either the first condition OR the second condition is true.

Q:28)Find all the tuples having a temperature greater than 'Paris'.
A:) SELECT * FROM weather WHERE temperature > (SELECT temperature FROM weather WHERE city = 'Paris'
B:) SELECT * FROM weather WHERE temperature > (SELECT * FROM weather WHERE city = 'Paris')
C:) SELECT * FROM weather WHERE temperature > (SELECT city FROM weather WHERE city = 'Paris')
D:) SELECT * FROM weather WHERE temperature > 'Paris' temperature

Correct:A
Explanation: Subquery—also referred to as an inner query or inner select—is a SELECT statement embedded within a data manipulation language (DML) statement or nested within another subquery.

Q:29) Find all the cities with temperature, condition and humidity whose humidity is in the range of 63 to 79.
A:) SELECT * FROM weather WHERE humidity IN (63 to 79)
B:) SELECT * FROM weather WHERE humidity NOT IN (63 AND 79)
C:) SELECT * FROM weather WHERE humidity BETWEEN 63 AND 79
D:) SELECT * FROM weather WHERE humidity NOT BETWEEN 63 AND 79

Correct:C
Explanation: The BETWEEN operator is used to select values within a range.

Q:30)The command to remove rows from a table 'CUSTOMER' is _____
A:) DROP FROM CUSTOMER
B:) UPDATE FROM CUSTOMER
C:) REMOVE FROM CUSTOMER
D:) DELETE FROM CUSTOMER WHERE

Correct:D
Explanation: The SQL DELETE Query is used to delete the existing records from a table. You can use WHERE clause with the DELETE query to delete selected rows.

Q:31)What type of join is needed when you wish to include rows that do not have matching values?
A:) Equi-join
B:) Natural join
C:) Outer join
D:) All of the Mentioned

Correct:C
Explanation:OUTER JOIN is the only join which shows the unmatched rows.

Q:32) What type of join is needed when you wish to return rows that do have matching values?
A:) Equi-join
B:) Natural join

C:) Outer join
D:) All of the Mentioned

Correct:D
Explanation: Outer join returns the row having matching as well as non matching values.

Q:33)Which of the following is one of the basic approaches for joining tables?
A:) Subqueries
B:) Union Join
C:) Natural join
D:) All of the Mentioned

Correct:D
Explanation: The SQL subquery is a SELECT query that is embedded in the main SELECT statement. In many cases, a subquery can be used instead of a JOIN.

Q:34)The following SQL is which type of join: SELECT CUSTOMER_T. CUSTOMER_ID, ORDER_T. CUSTOMER_ID, NAME, ORDER_ID FROM CUSTOMER_T,ORDER_T WHERE CUSTOMER_T. CUSTOMER_ID = ORDER_T. CUSTOMER_ID?
A:) Equi-join
B:) Natural join
C:) Outer join
D:) Cartesian join

Correct:A
Explanation: Equi-join joins only same data entry field. For example, one table contains department id and another table should contain department id.

Q:35)A UNION query is which of the following?
A:) Combines the output from no more than two queries and must include the same number of columns
B:) Combines the output from no more than two queries and does not include the same number of columns
C:) Combines the output from multiple queries and must include the same number of columns
D:) Combines the output from multiple queries and does not include the same number of columns

Correct:C
Explanation: A single UNION can combine only 2 sql query at a time.

Q:36) Which of the following statements is true concerning subqueries?
A:) Involves the use of an inner and outer query
B:) Cannot return the same result as a query that is not a subquery
C:) Does not start with the word SELECT
D:) All of the mentioned

Correct:A
Explanation: Subquery—also referred to as an inner query or inner select—is a SELECT statement embedded within a data manipulation language (DML) statement or nested within another subquery.

Q:37)Which of the following is a correlated subquery?
A:) Uses the result of an inner query to determine the processing of an outer query
B:) Uses the result of an outer query to determine the processing of an inner query
C:) Uses the result of an inner query to determine the processing of an inner query
D:) Uses the result of an outer query to determine the processing of an outer query

Correct:A
Explanation: A 'correlated subquery' is a term used for specific types of queries in SQL in computer databases. It is a subquery (a query nested inside another query) that uses values from the outer query in its WHERE clause.

Q:38)How many tables may be included with a join?
A:) One
B:) Two
C:) Three
D:) All of the Mentioned

Correct:D
Explanation: Join can be used for more than one table. For 'n' tables the no of join conditions required are 'n-1'.

Q:39)The following SQL is which type of join: SELECT CUSTOMER_T. CUSTOMER_ID, ORDER_T. CUSTOMER_ID, NAME, ORDER_ID FROM CUSTOMER_T,ORDER_T?
A:) Equi-join

B:) Natural join
C:) Outer join
D:) Cartesian join

Correct:D
Explanation: Cartesian Join is simply the joining of one or more table which returns the product of all the rows in these tables.

Q:40)Which is not a type of join in T-SQL?
A:) Equi-join
B:) Natural join
C:) Outer join
D:) Cartesian join

Correct:B
Explanation: A NATURAL JOIN is an inner join where the RDBMS automatically selects the join columns based on common columns names. Some RDBMS vendors, like Oracle but not SQL Server, implement a NATURAL JOIN operator.

Q:41) What is a view?
A:) A view is a special stored procedure executed when certain event occurs
B:) A view is a virtual table which results of executing a pre-compiled query
C:) A view is a database diagram
D:) None of the Mentioned

Correct:B
Explanation: VIEW is a virtual table, through which a selective portion of the data from one or more tables can be seen. A view do not contain data of their own.

Q:42) Which of the following is not a limitation of view?
A:) ORDER BY Does Not Work
B:) Index Created on View Used Often
C:) Cross Database Queries Not Allowed in Indexed View
D:) Adding Column is Expensive by Joining Table Outside View

Correct:B
Explanation: Views created on indexed Columns are often used because of performance optimization problems.

Q:43) Which of the following statement is true?
A:) Views could be looked as an additional layer on the table which enables us to protect intricate or sensitive data based upon our needs
B:) Views are virtual tables that are compiled at run time
C:) Creating views can improve query response time
D:) All of the Mentioned

Correct:D
Explanation: Views are a valuable tool for the SQL Server Developer because they hide complexity and allow for a readable style of SQL expression.

Q:44) SQL Server has mainly how many types of views?
A:) one
B:) two
C:) three
D:) four

Correct:B
Explanation: In SQL Server we have two types of views-System Defined Views and User Defined View.

Q:45) Dynamic Management View is a type of _____
A:) System Defined Views
B:) User Defined View
C:) Simple View
D:) Complex View

Correct:A
Explanation: Dynamic Management Views were introduced in SQL Server 2005. These Views give the administrator information of the database about the current state of the SQL Server machine.

Q:46)Syntax for creating views is _____
A:) CREATE VIEW AS SELECT

B:) CREATE VIEW AS UPDATE
C:) DROP VIEW AS SELECT
D:) CREATE VIEW AS UPDATE

Correct:A
Explanation: SQL CREATE VIEW Syntax:CREATE VIEW view_name AS SELECT column_name(s) FROM table_name WHERE condition.

Q:47)You can delete a view with _____ command.
A:) DROP VIEW
B:) DELETE VIEW
C:) REMOVE VIEW
D:) TRUNCATE VIEW

Correct:A
Explanation: DROP VIEW removes one or more views from the current database.

Q:48) What is SCHEMABINDING a VIEW?
A:) Schema binding binds your views to the dependent physical columns of the accessed tables specified in the contents of the view
B:) These are stored only in the Master database
C:) These types of view are defined by users on a specified schema
D:) These are used to show database self describing information

Correct:B
Explanation: SCHEMABINDING binds the view to the schema of the underlying table or tables. When SCHEMABINDING is specified, the base table or tables cannot be modified in a way that would affect the view definition.

Q:49) Which of the following is not a SQL Server INFORMATION_SCHEMA view?
A:) INFORMATION_SCHEMA.CONSTRAINT_TABLE_USAGE
B:) INFORMATION_SCHEMA.DOMAIN_CONSTRAINTS
C:) INFORMATION_SCHEMA.KEY_COLUMN_USAGE
D:) sys.dm_exec_connections

Correct:D
Explanation: The INFORMATION_SCHEMA views allow you to retrieve metadata about the

objects within a database. These views can be found in the master database under Views / System Views and be called from any database in your SQL Server instance.

Q:50) _____ is stored only in the Master database.
A:) Database-scoped Dynamic Management View
B:) Complex View
C:) Catalog View
D:) None of the mentioned

Correct:D
Explanation: Server-scoped Dynamic Management View is stored only in the Master database.

Unit 5: Relational Database Design

Q:1)In the _____ normal form, a composite attribute is converted to individual attributes.
A:) First
B:) Second
C:) Third
D:) Fourth

Correct:A
Explanation: The first normal form is used to eliminate the duplicate information.

Q:2)A table on the many side of a one to many or many to many relationship must:
A:) Be in Second Normal Form (2NF)
B:) Be in Third Normal Form (3NF)
C:) Have a single attribute key
D:) Have a composite key

Correct:D
Explanation: The relation in second normal form is also in first normal form and no partial dependencies on any column in primary key.

Q:3)Tables in second normal form (2NF):
A:) Eliminate all hidden dependencies
B:) Eliminate the possibility of a insertion anomalies
C:) Have a composite key
D:) Have all non key fields depend on the whole primary key

Correct:A
Explanation: The relation in second normal form is also in first normal form and no partial dependencies on any column in primary key.

Q:4)Which-one ofthe following statements about normal forms is FALSE?
A:) BCNF is stricter than 3 NF
B:) Lossless, dependency -preserving decomposition into 3 NF is always possible
C:) Loss less, dependency – preserving decomposition into BCNF is always possible
D:) Any relation with two attributes is BCNF

Correct:C
Explanation: We say that the decomposition is a lossless decomposition if there is no loss of information by replacing r (R) with two relation schemas r1(R1) andr2(R2).

Q:5)Functional Dependencies are the types of constraints that are based on_____
A:) Key
B:) Key revisited
C:) Superset key
D:) None of the mentioned

Correct:A

Q:6)Which is a bottom-up approach to database design that design by examining the relationship between attributes:
A:) Functional dependency
B:) Database modeling
C:) Normalization
D:) Decomposition

Correct:C

Q:7)Which forms simplifies and ensures that there are minimal data aggregates and repetitive groups:
A:) 1NF
B:) 2NF
C:) 3NF
D:) All of the mentioned

Correct:C

Q:8)Which forms has a relation that possesses data about an individual entity:
A:) 2NF
B:) 3NF
C:) 4NF

D:) 5NF

Correct:C.

Q:9)Which forms are based on the concept of functional dependency:
A:) 1NF
B:) 2NF
C:) 3NF
D:) 4NF

Correct:C

Q:10)Empdt1(empcode, name, street, city, state, pincode).

For any pincode, there is only one city and state. Also, for given street, city and state, there is just one pincode. In normalization terms, empdt1 is a relation in
A:) 1 NF only
B:) 2 NF and hence also in 1 NF
C:) 3NF and hence also in 2NF and 1NF
D:) BCNF and hence also in 3NF, 2NF and 1NF

Correct:B

Q:11) We can use the following three rules to find logically implied functional dependencies. This collection of rules is called
A:) Axioms
B:) Armstrong's axioms
C:) Armstrong
D:) Closure

Correct:B
Q:12)Which of the following is not Armstrong's Axiom?
A:) Reflexivity rule
B:) Transitivity rule
C:) Pseudotransitivity rule

D:) Augmentation rule

Correct:C

Q:13) The relation employee(ID,name,street,Credit,street,city,salary) is decomposed into

employee1 (ID, name)

employee2 (name, street, city, salary)

This type of decomposition is called
A:) Lossless decomposition
B:) Lossless-join decomposition
C:) All of the mentioned
D:) None of the mentioned

Correct:D

Q:14) Inst_dept (ID, name, salary, dept name, building, budget) is decomposed into

instructor (ID, name, dept name, salary)

department (dept name, building, budget)

This comes under
A:) Lossy-join decomposition
B:) Lossy decomposition
C:) Lossless-join decomposition
D:) Both Lossy and Lossy-join decomposition

Correct:D

Q:15) There are two functional dependencies with the same set of attributes on the left side of the arrow:
A->BC
A->B
This can be combined as
A:) A->BC
B:) A->B
C:) B->C

D:) None of the mentioned

Correct:A

Q:16) Consider a relation R(A,B,C,D,E) with the following functional dependencies:

ABC -> DE and

D -> AB

The number of superkeys of R is:
A:) 2
B:) 7
C:) 10
D:) 12

Correct:C

Q:17)Suppose we wish to find the ID's of the employees that are managed by people who are managed by the employee with ID 123. Here are two possible queries:

I.SELECT ee.empID

FROM Emps ee, Emps ff

WHERE ee.mgrID = ff.empID **AND** ff.mgrID = 123;

II.SELECT empID

FROM Emps

WHERE mgrID **IN**

(**SELECT** empID **FROM** Emps **WHERE** mgrID = 123);

Q:18)Which, if any, of the two queries above will correctly (in SQL2) get the desired set of employee ID's?
A:) Both I and II
B:) I only
C:) II only

D:) Neither I nor I

Correct:A

Q:19) Suppose now that R(A,B:) and S(A,B:) are two relations with r and s tuples, respectively (again, not necessarily distinct). If m is the number of (not necessarily distinct) tuples in the result of the SQL query:

R intersect S;

Then which of the following is the most restrictive, correct condition on the value of m?

A:) m = min(r,s)
B:) 0 <= m <= r + s
C:) min(r,s) <= m <= max(r,s)
D:) 0 <= m <= min(r,s)

Correct:D

Q:20)Which of the following is not a key?

A:) A
B:) E
C:) B, C
D:) D

Correct:C

Explanation: Here the keys are not formed by B and C.

Q:21)If a relation is in BCNF, then it is also in

A.1 NF

B.2 NF

C.3 NF

D.All of the above

Correct:D

Q:22)The relation scheme student performance (name, courseNo, rollNo, grade) has the following functional dependencies:

name, curseNo --> grade
Rol lNo, courseNo —> grade
name —> rollNo
rollNo —> name
The highest normal form ofthis relation scheme is:

A:) **A.** B:) 2 NF

C:) **B.** D:) 3 NF

E:) **C.** F:) BCNF

G:) **D.** H:) 4 NF

Correct:B

Q:23)Choose the correct statement regarding superkeys
A:) A superkey is an attribute or a group of multiple attributes that can uniquely identify a tuple
B:) A superkey is a tuple or a set of multiple tuples that can uniquely identify an attribute
C:) Every superkey is a candidate key
D:) A superkey is an attribute or a set of attributes that distinguish the relation from other relations
Correct : A

Q:24)What is an Instance of a Database?
A:) The logical design of the database system
B:) The entire set of attributes of the Database put together in a single relation
C:) The state of the database system at any given point of time
D:) The initial values inserted into the Database immediately after its creation
Correct : C

Q:25)What is a foreign key?
A:) A foreign key is a primary key of a relation which is an attribute in another relation
B:) A foreign key is a superkey of a relation which is an attribute in more than one other relations
C:) A foreign key is an attribute of a relation that is a primary key of another relation
D:) A foreign key is the primary key of a relation that does not occur anywhere else in the schema

Correct : C.

Q:26) What action does ⋈ operator perform in relational algebra
A:) Output specified attributes from all rows of the input relation and remove duplicate tuples from the output
B:) Outputs pairs of rows from the two input relations that have the same value on all attributes that have the same name
C:) Output all pairs of rows from the two input relations (regardless of whether or not they have the same values on common attributes)
D:) Return rows of the input relation that satisfy the predicate

Correct : A
Q:27) What does the "x" operator do in relational algebra?
A:) Output specified attributes from all rows of the input relation. Remove duplicate tuples from the output
B:) Output pairs of rows from the two input relations that have the same value on all attributes that have the same name
C:) Output all pairs of rows from the two input relations (regardless of whether or not they have the same values on common attributes)
D:) Returns the rows of the input relation that satisfy the predicate

Correct : C

Q:28)An attribute is a _____ in a relation.
A:) Row
B:) Column
C:) Value
D:) Tuple

Correct : B
Explanation: An attribute is a column in a relation. A tuple is a row in a relation.

Q:29)What is the method of specifying a primary key in a schema description?
A:) By writing it in bold letters
B:) By underlining it using a dashed line
C:) By writing it in capital letters
D:) By underlining it using a bold line

Correct : D
Explanation: We can specify a primary key in schema description by underlining the respective attribute with a bold line.

Q:30)Statement 1: A tuple is a row in a relation
Statement 2: Existence of multiple foreign keys in a same relation is possible
A:) Both the statements are true
B:) Statement 1 is correct but Statement 2 is false
C:) Statement 1 is false but Statement 2 is correct
D:) Both the statements are false

Correct : A
Q:31)Choose the option that correctly explains in words, the function of the following relational algebra expression
$\sigma_{year \geq 2009}$ (book ⋈ borrow)
A:) Selects all tuples from the Cartesian product of book and borrow
B:) Selects all the tuples from the natural join of book and borrow wherever the year is lesser than 2009
C:) Selects all the tuples from the natural join of book and student wherever the year is greater than or equal to 2009
D:) Selects all tuples from the Cartesian product of book and borrow wherever the year is greater than or equal to 2009

Correct : B.

Q:32) State true or false: If a relation consists of a foreign key, then it is called a referenced relation of the foreign key dependency.
A:) True
B:) False

Correct : B.

Q:33)The____condition allows a general predicate over the relations being joined.

A:) On

B:) Using

C:) Set

D:) Where

Correct : A.

Q:34) Which of the join operations do not preserve non matched tuples?

A:) Left outer join

B:) Right outer join

C:) Inner join

D:) Natural join

Correct:B

Q:35) How many tables may be included with a join?

A:) One

B:) Two

C:) Three

D:) All of the mentioned

Correct:D

Q:**36) Which are the join types in join condition:**

A:) Cross join

B:) Natural join

C:) Join with USING clause

D:) All of the mentioned

Correct:D.

Q:37) How many join types in join condition:

A:) 2

B:) 3

C:) 4

D:) 5

Correct:D

Q:38) The normal form which satisfies multivalued dependencies and which is in BCNF is

A:) 4 NF

B:) 3 NF

C:) 2 NF

D:) All of the mentioned

Answer: a

Q:**39) Which of the following is a tuple-generating dependencies?**

A:) Functional dependency

B:) Equality-generating dependencies

C:) Multivalued dependencies

D:) Non-functional dependency

Correct:B

Q:**40) The main task carried out in the _____ is to remove repeating attributes to separate tables.**

A:) First Normal Form

B:) Second Normal Form

C:) Third Normal Form

D:) Fourth Normal Form

Answer: A

Q:**41) Which of the normal form is based on multivalued dependencies?**

A:) First

B:) Second

C:) Third

D:) Fourth

Correct:D

Q:**42) Which forms has a relation that possesses data about an individual entity?**

A:) 2NF

B:) 3NF

C:) 4NF

D:) 5NF

Correct:B

Q:43)If a multivalued dependency holds and is not implied by the corresponding functional dependency, it usually arises from one of the following sources.

A:) A many-to-many relationship set

B:) A multivalued attribute of an entity set

C:) A one-to-many relationship set

D:) Both A many-to-many relationship set and A multivalued attribute of an entity set

Correct:D

Q:**44) Which of the following has each related entity set has its own schema and there is an additional schema for the relationship set?**

A:) A many-to-many relationship set

B:) A multivalued attribute of an entity set

C:) A one-to-many relationship set

D:) None of the mentioned

Answer: A

Q:**45) Fifth Normal form is concerned with**

A:) Functional dependency

B:) Multivalued dependency

C:) Join dependency

D:) Domain-key

Correct:B

Q:46) Which of the following has each related entity set has its own schema and there is an additional schema for the relationship set?

A:) A many-to-many relationship set

B:) A multivalued attribute of an entity set

C:) A one-to-many relationship set

D:) None of the mentioned

Answer: a

Q:47) n which of the following, a separate schema is created consisting of that attribute and the primary key of the entity set.

A:) A many-to-many relationship set

B:) A multivalued attribute of an entity set

C:) A one-to-many relationship set

D:) None of the mentioned

Correct:B

Q:**48) In 2NF**

A:) No functional dependencies (FDs) exist

B:) No multivalued dependencies (MVDs) exist

C:) No partial FDs exist

D:) No partial MVDs exist

Correct:B

Q:**49) Which of the normal form is based on multivalued dependencies?**

A:) First

B:) Second

C:) Third

D:) Fourth

Correct:D

Q:**50) Which forms has a relation that possesses data about an individual entity?**

A:) 2NF

B:) 3NF

C:) 4NF

D:) 5NF

Correct:B