DATABASE MANAGEMENT SYSTEMS

2nd Semester ECAP200 – Unit 1: Self-Assessment 01

Top of Form

1._____ is the raw material from which useful information is derived.

- Files
- **Data**
- Networks
- Constraints

2. Data that describe the properties or characteristics of other data.

- **Meta data**
- Data mart
- Information
- Data mining

3. What are problems with file processing systems?

- Data dependence
- Data redundancy
- Inconsistency of data
- **All of the above**

4. What are benefits of DBMS?

- Integration of data
- Sharing of data
- Ease of application development
- **All of the above**

5. Deals with the modeling of the whole database.

- Physical level
- **Conceptual level**
- External level
- None of these

6. This level is concerned with the user.

- Physical level
- Conceptual level
- **External level**
- None of these

7._____is defined as a property of DBMS that helps you to change the Database schema at one level of a database system without requiring to change the schema at the next higher level.

- Data warehousing
- Data mining
- **Data Independence**
- Data Normalization

8. Is the ability to make changes in the structure of the lowest level of the Database Management System (DBMS) without affecting the higher-level schemas?

- **Physical Data independence**
- Logical Data indepence
- External data independence
- All of the above

9. Is defined as the ability to make changes in the structure of the middle level of the Database Management System (DBMS) without affecting the highest-level schema or application programs.

- Physical Data independence
- **Logical Data indepence**
- External data independence
- All of the above

10. In ER model What Rectangle represents?

- Relationship
- Attribute
- **Entity**
- Primary key

11. What are properties of Entities called as :

- Files
- **Attributes**
- Marts
- Primary key

12. Which model Represent data in form of tables?

- **Relational model**
- ER Model
- Hierarchical model
- Object model

13. What are restrictions applied on content of database called as:

- (●) **Constraints**
- ( ) Attributes
- ( ) Sequence
- ( ) All of the above

14. Which Constraint is used to link two tables?

- ( ) Primary key
- (●) **Foreign Key**
- ( ) Check constraint.
- ( ) Unique

15. The _____ constraint is used to limit the value range that can be placed in a column.

- ( ) Primary key
- ( ) Foreign Key
- (●) **Check**
- ( ) Unique

ECAP200 – Unit 2: Self-Assessment 02

1. Top of Form
Which is first step to design ER diagram?

- (●) **Identify the Strong and Weak Entity Sets**
- ( ) Identify the Relevant Attributes
- ( ) Identify the Relationship Sets
- ( ) Identify the Cardinality Ratio and Participation Constraints

2. Which of the following is part to check Operational feasibility

- ( ) Who will design the system?
- ( ) Who will maintain the system?
- ( ) Who will do training or help-desk support?
- (●) **All of above**

3. Which of the following is a Data Model?

- ( ) Entity-Relationship model
- ( ) Relational data model
- ( ) Object-Based data model
- (●) **All of the above**

4. _____ is To produce a representation that can be transformed into a schema

- Data warehousing
- **Data Modelling**
- Data Mining
- Data normalization

5. The term _____ is used to refer to a row

- Attribute
- **Tuple**
- Field
- Instance

6. The term attribute refers to a _____ of a table.

- Record
- **Column**
- Tuple
- Key

7. _____entity set does not have primary key.

- **Weak**
- Strong
- Unique
- All of above

8. For each attribute of a relation, there is a set of permitted values, called the _____ of that attribute.

- **Domain**
- Relation
- Set
- Schema

9. Which is Extended E-R Features

- Generalization
- Specialization
- Aggregation
- **All of the above**

10. _____ is a bottom-up approach in which two lower level entities combine to form a higher level entity

- (●) **Generalization**
- ( ) Specialization
- ( ) Aggregation
- ( ) All of the above

11. It is a top-down approach in which one higher level entity can be broken down into two lower level entity

- ( ) Generalization
- (●) **Specialization**
- ( ) Aggregation
- ( ) All of the above

12. Relational Algebra is a _____ query language that takes two relations as input and produces another relation as an output of the query.

- ( ) Relational
- ( ) Structural
- (●) **Procedural**
- ( ) Fundamental

13. Which of the following is used to denote the selection operation in relational algebra?

- ( ) Pi (Greek)
- (●) **Sigma (Greek)**
- ( ) Lambda (Greek)
- ( ) Omega (Greek)

14. Which of the following is used to denote the projection operation in relational algebra?

- (●) **Pi (Greek)**
- ( ) Sigma (Greek)
- ( ) Lambda (Greek)
- ( ) Omega (Greek)

15. Which is binary relational algebra operator?

- ( ) Pi
- ( ) Sigma
- (●) **Union**
- ( ) Omega

ECAP200 – Unit 3: Self-Assessment 03

1. What is the full form of SQL?

- Structured Query List
- **Structure Query Language**
- Sample Query Language
- None of these.

2. Which of the following is not a DDL command?

- TRUNCATE
- ALTER
- CREATE
- **UPDATE**

3. How many Primary keys can have in a table?

- **Only 1**
- Only 2
- Depends on no of Columns
- Depends on DBA

4. Which language is used to define schema of database?

- **DDL(DATA DEFINATION LANGUAGE)**
- DML(DATA MANIPULATION LANGUAGE)
- DCL(DATA CONTROL LANGUAGE)
- All of the above

5. Commands which contain most common SQL statements such as SELECT, INSERT, UPDATE, DELETE

- DDL(DATA DEFINATION LANGUAGE)
- **DML(DATA MANIPULATION LANGUAGE)**
- DCL(DATA CONTROL LANGUAGE)
- All of the above

6. Commands are used to control privilege in the databas

- DDL(DATA DEFINATION LANGUAGE)
- DML(DATA MANIPULATION LANGUAGE)
- **DCL(DATA CONTROL LANGUAGE)**
- All of the above

7. In which of the following cases a DML statement is not executed?

- When existing rows are modified.
- **When a table is deleted.**
- When some rows are deleted.
- All of the above

8. Which command is used to change the definition of a table in SQL?

- SEQUENCE
- UPDATE
- **ALTER**
- SELECT

9. Which of the following is/are the DDL statements?

- Create
- Drop
- Alter
- **All of the Mentioned**

10. Which command defines its columns, integrity constraint in create table:

- **Create command**
- Drop table command
- Alter table command
- All of the Mentioned

11. Data Manipulation Languages are used for

- Delete Information
- Insert Information into Database
- Retrieve Information from Database
- **All of these**

12. Which object is used to generate auto number in SQL?

- Update
- View
- Sequence
- All of the above

13. Temporary table in SQL is called as

- Update
- **View**

- Sequence
- All of the above

14. Which command is used for removing a table and all its data from the database:

- Create command
- **Drop table command**
- Update table command
- All of the Mentioned

15. A DBMS query language is designed to

- support end users who use English-like commands.
- support in the development of complex applications software.
- specify the structure of a database
- **All of the above**

ECAP200 – Unit 4: Self-Assessment 04

1._____ is a Data Manipulation Language (DML) command and used when you want to remove some or all the tuples from a relation

- Update
- **Delete**
- Drop
- Insert

2._____ is a Data Definition Language (DDL) command which removes the named elements of the schema

- Update
- Delete
- **Drop**
- Insert

3.Actions performed by _____can be rolled back as it uses buffer.

- Update
- **Delete**
- Drop
- Insert

4._____ command that is used to add attributes to an existing relation

- **Alter**
- Modify

- Tailor
- Eliminate

5. Clause which is used to arrange data values in Sorted order.

- **Order by**
- Group by
- Sequence
- None of these

6. Which of the following is not an aggregate function?

- Avg
- Sum
- **With**
- Min

7. If we do want to eliminate duplicates, we use the keyword _____in the aggregate expression.

- **Distinct**
- Count
- Avg
- Primary key

8.Select _____ from instructor where dept name= 'Comp. Sci.';
Which of the following should be used to find the mean of the salary ?

- Mean(salary)
- **Avg(salary)**
- Sum(salary)
- Count(salary

9.Aggregate functions are functions that take a _____ as input and return a single value.

- **Collection of values**
- Single value
- Aggregate value
- Both a & b

10.Select _____ from instructor where dept name= 'Comp. Sci.';
Which of the following should be used to find the number of employees getting salary ?

- Mean(salary)

- Avg(salary)
- Sum(salary)
- **Count(salary)**

11. A _____in SQL is a collection of database objects associated with a databaseto define structure.

- Data
- Information
- **Schema**
- Model

12. The _____ operator displays a record if both the first condition AND the second condition are true

- Or
- **And**
- Not
- Nor

13. The _____ operator displays a record if either the first condition OR the second condition is true.

- **Or**
- And
- Not
- Nor

14.The _____operator selects values within a range

- **BETWEEN**
- INBETWEEN
- AND
- OR

15.It Corresponds to the selection predicate of the relational algebra

- Group by
- **Where clause**
- Having
- None of these

ECAP200 – Unit 5: Self-Assessment 05

1. DML Command used to change existing data in table

- Insert
- **Update**
- Select
- Delete

2. Which Relation algebra operator is Binary operator?

- Select
- Project
- **Union**
- None of these

3. The language used in application programs to request data from the DBMS is referred to as the

- **DML**
- DDL
- VDL
- SDL

4. In SQL, which of the following is not a data Manipulation Language Commands?

- Delete
- Insert
- Update
- **Create**

5. Data Manipulation Languages are used for

- Delete Information
- Insert Information into Database
- Retrieve Information from Database
- **All of these**

6. Data Manipulation Languages is not used used for

- Delete Information
- Insert Information into Database
- Retrieve Information from Database
- **Creating schema of table**

7. Which of the following is not a class of constraint in SQL Server?

- NOT NULL
- CHECK

- **NULL**
- UNIQUE

8. Point out the correct statement.

- CHECK constraints enforce domain integrity
- UNIQUE constraints enforce the uniqueness of the values in a set of columns
- In a UNIQUE constraint, no two rows in the table can have the same value for the columns
- **All of the mentioned**

9. Which of the following constraint does not enforce uniqueness?

- UNIQUE
- Primary key
- **Foreign key**
- Check

10. Which of the constraint can be enforced one per table?

- **Primary key constraint**
- Not Null constraint
- Foreign Key constraint
- Check constraint

11. Which of following is applied on two tables?

- Primary key constraint
- Unique constraint
- **Foreign Key constraint**
- All of above

12. The _____ is essentially used to search for patterns in target string.

- **Like Predicate**
- Null Predicate
- In Predicate
- Out Predicate

13. A _____is a SELECT statement embedded in a clause of another SQL statement.

- **Subquery**
- Sequence
- View
- DDl

14. Select _____ dept_name from instructor;
Here which of the following displays the unique values of the column?

- All
- From
- **Distinct**
- Name

15.
Sub queries that return more than one row are called multiple-row subqueries

- Single Row sub queries
- Multiple Row sub queries
- Distinct queries
- None of above

ECAP200 – Unit 6: Self-Assessment 06

1. Tuple relational calculus is _____Query language.

- Procedural
- **Non –Procedural**
- Object –Oriented
- Dynamic

2. A _____uses list of attribute to be selected from the relation based on the condition.

- **Domain relational calculus**
- Tuple relational calculus
- Relational algebra
- None of these

3. In _____the variables represent the tuples from specified relation.

- Domain relational calculus
- **Tuple relational calculus**
- Relational algebra
- None of these

4. Select clause in sql corresponds to Which operation of relational algebra

- **Project**
- Union
- Set difference
- Rename

5. Where clause in sql corresponds to Which operation of relational algebra

- Project
- **Select**
- Set difference
- Rename

6. Sql is based on

- Domain relational calculus
- Tuple relational calculus
- **Relational algebra**
- None of these

7. Operator which is Used for string pattern matching

- And
- Or
- **Like**
- Between

8. In SQL, a_____ is a virtual table based on the result-set of an SQL statement.

- Sequence
- **View**
- Join
- None of these

9. Domain relational calculus is

- Procedural
- **Non procedural**
- Object oriented
- None of these

10. QBE stands for

- Query by Entity
- **Query by Example**
- Query by Equation
- Query by Entity Set

11. It is the first graphical query language, using visual tables where the user would enter commands, example elements and conditions

- SQL
- **Query by Example**

- Relational algebra
- None of these

12. QBE is Based on

- Relational algebra
- **Domain relational calculus**
- Tuple relational calculus
- All of the above

13. This operator is used to display the records that are present only in the first table or query, and doesn't present in second table / query

- Union
- Intersection
- **Minus**
- All of the above

14. Operator compares the result of two queries and returns the distinct rows that are output by both queries

- Union
- **Intersection**
- Minus
- All of the above

15.
This operator is used to combine two similar queries results into one single result

- Union
- Intersection
- Minus
- All of the above

ECAP200 – Unit 7: Self-Assessment 07

1. It is a technique for designing relational database tables to minimize duplication in information and thus increasing logical consistency.

- **Normalization**
- Functional Dependency
- Anomalies
- Multivalued Dependency

2.Attribute B has a _____on attribute A, if for each value of attribute A, there is exactly one value of attribute B

- Multivalued dependency
- **Functional Dependency**
- Transitive dependency
- Full functional Dependency

3.An attribute is _____on a set of attributes, if it is Functionally dependent on S and Not functionally dependent on any proper subset of S

- Multivalued dependency
- Functional Dependency
- Transitive dependency
- **Full functional Dependency**

4.Attribute B has a _____on attribute A, if for each value of attribute A, there are more than one values of attribute B. Then, it is denoted as:

- **Multivalued dependency**
- Functional Dependency
- Transitive dependency
- Full functional Dependency

5.It exists when value of an attribute is dependent on the value of other dependent attributes.

- Multivalued dependency
- Functional Dependency
- **Transitive dependency**
- Full functional Dependency

6.What is objective of normalization

- Develop a good description of the data, its relationships and constraints.
- Produce a stable set of relations
- Reduces redundancy
- All of above

7.The primary importance of _____is not that it eliminates *redundancy*, but rather, it's that it eliminates repeating groups

- **First normal form**
- Second normal form
- Third normal form
- Fourth normal form

8.A relation schema is in_____, if the values in the domain of each attribute of the relation are simple or atomic

- **First normal form**

- Second normal form
- Third normal form
- Fourth normal form

9.Which is not objective of normalization

- To reduce Redundancy in data
- To increase logical consistency
- **To define Schema**
- To remove anomalies

10.In which normal form all non-primary attributes are fully functionally dependent on primary key

- First normal form
- **Second normal form**
- Third normal form
- Fourth normal form

11.In which Normal form all non primary attributes have no transitivity dependency on the primary key

- First normal form
- Second normal form
- **Third normal form**
- Fourth normal form

12.A relation is in_____, if every determinant is a candidate key

- First normal form
- Second normal form
- **BCNF**
- Fourth normal form

13. Which normal form is concerned with multivalued dependency.

- First normal form
- Second normal form
- BCNF
- **Fourth normal form**

14. OLTP is

- **On-Line Transaction Processing**
- On line traditional processing
- On-Link Transaction processing

- None of these

15. Technology used to perform complex analysis of the data in a data warehouse

- On-Line Transaction Processing
- **On line analytical processing**
- On-Link Transaction processing
- None of these

ECAP200 – Unit 8: Self-Assessment 08

1.A _____is a unit of program execution that accesses and possibly updates various data items.

- **Transaction**
- Data
- Information
- All of above

2. A _____is a unit of program execution that accesses and possibly updates various data items.

- **Transaction**
- Data
- Information
- All of above

3. Which property explains either all operations of the transaction are properly reflected in the database or none are

- **Atomicity**
- Consistency
- Isolation
- Durability

4. Execution of a transaction in isolation preserves the _____of the database.

- Atomicity
- **Consistency**
- Isolation
- Durability

5. Which property ensure that each transaction must be unaware of other concurrently executing transactions.

- Atomicity
- Consistency

- (•) **Isolation**
- ( ) Durability

6. Which property ensures after a transaction completes successfully, the changes it has made to the database persist, even if there are system failures.

- ( ) Atomicity
- ( ) Consistency
- ( ) Isolation
- (•) **Durability**

7. The initial state the transaction stays in this state while it is executing

- (•) **Active**
- ( ) Partially committed
- ( ) Committed
- ( ) Failed

8. Last state of successful transaction are

- ( ) Active
- ( ) Partially committed
- (•) **Committed**
- ( ) Failed

9. Last state of unsuccessful transaction are

- ( ) Active
- ( ) Partially committed
- (•) **Aborted**
- ( ) Failed

10. Multiple transactions that are allowed to run in the system is called as

- ( ) Aborted transaction
- (•) **Concurrent transaction**
- ( ) Serial transaction
- ( ) All of above

11. File which maintain Sequence of records is

- ( ) View
- (•) **Log**
- ( ) Atomicity
- ( ) Normalized

12. Collections of operations that form a single logical unit of work are called _____

- Views
- Networks
- Units
- **Transactions**

13. The “all-or-none” property is commonly referred to as _____

- Isolation
- Durability
- **Atomicity**
- None of the mentioned

14. Which of the following is a property of transactions?

- Atomicity
- Durability
- Isolation
- **All of the mentioned**

15. All logs are written on to the stable storage and the database is updated when a transaction commits is

- **Deferred database modification**
- Immediate database modification
- Non deferred database modification
- All of the above

16. Each log follows an actual database modification. That is, the database is modified immediately after every operation

- Deferred database modification
- **Immediate database modification**
- Non deferred database modification
- All of the above

ECAP200 – Unit 9: Self-Assessment 09

1. A _____ is a mechanism to control concurrent access to a data item

- **Lock**
- Data

- Information
- Data Independence

2. In _____lock data item can be both read as well.

- Shared
- **Exclusive**
- Concurrent lock
- All of the above

3. In _____lock data item can be both read only.

- **Shared**
- Exclusive
- Concurrent lock
- All of the above

4. Any number of transactions can hold _____locks on an item

- **Shared**
- Exclusive
- Concurrent lock
- All of the above

5. If any transaction holds a_____on the item no other transaction may hold any lock on the item.

- Shared
- **Exclusive**
- Concurrent lock
- All of the above

6._____is a situation where a set of processes are blocked because each process is holding a resource and waiting for another resource acquired by some other process

- Normalization
- Data preprocessing
- **Deadlock**
- All of the above'

7.Data items can be locked in _____modes.

- Three
- Four
- **Two**
- Five

8. A system is in a _____ state if there exists a set of transactions in which every transaction is waiting for another transaction in the set.

- **Deadlock**
- Starved
- Isolated
- None of the mentioned

9. Which of the following is not a method in deadlock handling

- Deadlock prevention
- Deadlock detection
- Deadlock recovery
- **Deadlock distribution**

10. Deadlocks can be prevented using

- Preemption and transaction rollbacks
- Wait and die scheme
- Wound-wait scheme
- **All of the mentioned**

11. A The _____ is used to order the transactions based on their Timestamps.

- Timestamp Ordering Protocol
- Lock based protocol
- Validation based protocols
- All of above

12. The _____is used to manage the order between conflicting pairs among transactions at the execution time.

- Timestamp Ordering Protocol
- **Lock based protocol**
- Validation based protocol
- All of above

13. In timestamp protocol _____ are assigned to transactions in the order they are submitted

- Timestamps
- **Concurrent execution**
- Serial transaction
- All of the above

14. Which of the following systems is responsible for ensuring isolation?

- Recovery system
- Atomic system
- **Concurrency control system**
- Compiler system

15. In the validation based protocol, the transaction is executed in____ phases.

- **Three**
- Four
- Five
- Six

16. In this phase, the temporary variable value will be validated against the actual data to see if it violates the serializability.

- Read
- **Validation**
- Write
- All of above

2nd Semester ECAP200 – Unit 10: Self-Assessment 10

1. DCL stands for :

- **Data Control Language**
- Data Console Language
- Data Console Level
- Data Control Level

2. Statements that specify and modify database schemas

- Data control language
- **Data Definition Language**
- Data Manipulation Language
- Data Query language

3. Statements that manipulate database content

- Data control language
- Data Definition Language
- **Data Manipulation Language**
- Data Query language

4. Statements that control permission to users are

- **Data control language**
- Data Definition Language
- Data Manipulation Language
- Data Query language

5.
This command removes a table from a database.

- **Drop table**
- Delete table
- Alter table
- Create table

6. Commands used to provide any user access privileges or other privileges for the database.

- **Grant**
- Insert
- Revoke
- All of above

7. Commands used to take back permissions from any user

- Grant
- Insert
- **Revoke**
- All of above

8._____commands in SQL allow controlling access to data within database.

- Database
- Data
- **Data control**
- All of the Mentioned

9. In an SQL statement, which of the following parts states the conditions for row selection?

- **Where**
- Sequence
- Order By
- Group By

10. Returns a string with the first letter of each word in upper case

- Upper
- Lower

- **Initcap**
- All of the above

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

- avg
- max
- **total**
- count

12. We apply the aggregate function to a group of sets of tuples using the _____ clause.

- **group by**
- group
- group set
- group attribute

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

- add
- avg
- max
- **sum**

14. The _____ aggregation operation provide mean of all the values of the attribute

- add
- **avg**
- max
- sum

15. This returns char, with all results in Capital letters

- **Upper**
- Lower
- Initcap
- All of the above

ECAP200 – Unit 11: Self-Assessment 11

1. Which one of the following is a failure to a system

- Boot crash
- Read failure
- **Transaction failure**

- All of the mentioned

2. Which of the following belongs to transaction failure

- Read error
- Boot error
- **Logical error**
- All of the mentioned

3. Which storage does not survive system crashes

- **Volatile**
- Non volatile
- Buffer
- All of above

4. Which storage survive system crashes

- Volatile
- **Non volatile**
- Buffer
- All of above

5. A storage that survives all failures

- Volatile
- Non volatile
- **Stable Storage**
- All of above

6. The _____is a sequence of records, and maintains a record of update activities on the database.

- **Log**
- Recovery
- Transaction
- All of above

7. A database _____ is a temporary storage area in the main memory.

- Log
- Non log
- **Buffer**
- All of above

8. A _____is responsible for allocating space to the buffer in order to store data into the buffer.

- **Buffer Manager**
- Transaction manager
- Query manager
- All of above

9. The _____ manages the available main memory by dividing the main memory into a collection of pages

- Log
- Non log
- **Buffer**
- All of above

10. A _____is a unit of program execution that accesses and possibly updates various data items.

- **Transaction**
- Buffer
- Data
- All of above

11. Which is not Concurrency Control and Recovery mechanism.

- Lock based Protocols
- Timestamp based protocols
- Validation based protocols
- **Deadlock based protocols**

12. Which concept follow this: Throw out block that has not been read or written for the longest time.

- **LRU- Least recently used**
- FIFO – First in First Out
- Clock
- All of the above

13. Which concept follow this: The oldest block in the buffer is emptied for the new block

- LRU- Least recently used
- **FIFO – First in First Out**
- Clock
- All of the above

14. It let blocks in buffer have second chance to live Clock wise.

- LRU- Least recently used
- FIFO – First in First Out
- **Clock**
- All of the above

15. Which storage is approximated by maintaining multiple copies on distinct nonvolatile media?

- Volatile
- Non volatile
- **Stable**
- Buffer