	Final Exam	
Department: Mathematics **Date: 31/5/2021**	**Level: 3**	**Course Title:** Database Systems Analysis **Code No.:** ر 335

ANSWER ALL THE FOLLOWING QUESTIONS:

Question 1: State true or false and correct the wrong statement (35 Marks)

1. Null represents a value for an attribute that is currently unknown or is not applicable for this tuple. T
2. Conceptual schemas correspond to different views of the data. F External
3. leaf node is a class that has no subclasses of its own. T
4. Backup and recovery services are improved using the database approach. T
5. SQL includes both data definition language and data maintenance language. F manipulation
6. A subclass can be a subclass in only one class F more than
7. In the ERD; the oval represent relationship between two entities. F attribute
8. The attributes in FK may have values other than the domain(s) of the primary key attributes PK F same values
9. Internal schemas correspond to different views of the data. F External
10. Database Designers is responsible for data resource management that plans, organizes, describes and controls data resources. F Data Administrator DA
11. The cardinality of a relation is the number of tuples it contains. T
12. Aggregate functions can be used only in the SELECT and the UPDATE clause. F Having

Question 2: Choose the correct answers: (30 Marks)

1. **……. is a complete definition or description of the database structure and constraints stored in the catalog.**

   A. DBMS B. Database Application C. Meta-data D. Database

2. **Which one of the following SQL statements is correct?**

   A. UPDATE table_name SET attribute1 = 'new_value1', attribute2= 'new_value2' WHERE attribute1 = 'old_value1';

   B. UPDATE table_name SET attribute1= 'new_value1' AND attribute2= 'new_value2' WHERE attribute1 = 'old_value1';

   C. UPDATE attribute1, attribute2 SET 'new_value1', 'new_value2' WHERE attribute 1 = 'old_value1';

   D. UPDATE attribute1, attribute2 SET 'new_value1' AND 'new_value2' WHERE attribute 1 = 'old_value1';

3. **Which one of the following is an aggregate function in SQL?**

A. LEN B. JOIN C. AVG D. LIM

4. **Which statement represents the query "find all staff names with a salary greater than 5000"?**

A. SELECT name WHERE salary > 5000;

B. SELECT name FROM staff WHERE salary > 5000;

C. SELECT salary > 5000 FROM staff;

D. SELECT * FROM staff;

5. **The command to delete tuples from the customer table is:**

A. DROP TABLE CUSTOMER; B. DELETE FROM CUSTOMER

B. REMOVE TABLE CUSTOMER; D. UPDATE TABLE CUSTOMER;

6. **……. schemas Contains the definitions of stored records.**

A. Conceptual B. External C. Internal D. Sub

7. **…….is unaware of the DBMS. He accesses the database through specially written application programs that attempt to make the operations as simple as possible.**

A. Data Administrator (DA) B. Database Administrator (DBA)

B. Database Designers D. End-Users

8. **…… system prevents unauthorized users accessing the database.**

A. Integrity B. Security C. Concurrency control D. Recovery

9. **…… key is the candidate key that is selected to identify tuples uniquely within the relation.**

A. Foreign B. Super C. Primary D. Composite

10. **…….is an entity type that is a distinct subgrouping of occurrences of an entity type, which require to be represented in a data model.**

A. Subclass B. Member C. Superclass D. Regular

11. **……is a class that has no subclasses of its own.**

A. A shared subclass B. A leaf node C. Partial subclass D. General superclass

12. **A ……. attribute represents a value that is derivable from the value of a related attribute or set of attributes, not necessarily in the same entity.**

A. Composite B. derived C. simple D. single

13. **Which one of the following SQL statements is correct?**

A. SELECT Username, Password WHERE Username = 'user1'

B. SELECT Username, Password FROM Users

C. SELECT Username, Password FROM Username = 'user1'

D. SELECT Username AND Password FROM Users

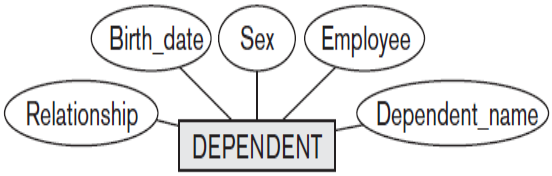
14. In a table, a column contains duplicate value, if you want to list all different values only, then which SQL clause is used?

A. UNIQUE B. NOT NULL C. DISTINCT D. EXIST

15. The opposite figure is a part of ERD; the DEPENDENT is considered as …….

A. a tuple B. an attribute

B. an entity D. a record



Question 3: (25 Marks):

A. Define relational database.

B. What is the difference between entity integrity and referential integrity constraints?

C. List three limitations of the file based approach.

D. List three functions of the DBMS

A. Relational Database is a collection of relations with distinct relation names / the database relationships are treated in the form of a table.

B. Entity integrity no primary key value can be null, referential integrity is that foreign key value should match a key value of some tuple or be wholly null.

Another answer: entity integrity is concerned with the integrity of the primary key while referential integrity is concerned with the foreign key.

C. Data redundancy and inconsistency

Data isolation

Integrity problems

Difficulty in accessing data

D. Security system

Integrity system

Concurrency control system

Recovery system