**Chapter 2**

**Data Modelling and Relational Database Design**

**MCQs**

1.An entity is

(a) a collection of items in an application

(b) a distinct real world item in an application

(c) an inanimate object in an application

(d) a data structure

Ans: b

2.In an E-R diagram entities are represented by

(a) circles

(b) rectangles

(c) diamond shaped box

(d) ellipse

Ans: b

3.One entity may be

(a) related to only one other entity

(b) related to itself

(c) related to only two other entities

(d) related to many other entities

Ans: d

4.By relation cardinality we mean

(a) number of items in a relationship

(b) number of relationships in which an entity can appear

(c) number of items in an entity

(d) number of entity sets which may be related to a given entity

Ans: b

5. ER modeling technique is a :

A. Top-down approach  
B. Bottom-up approach  
C. Left-right approach  
D. None of the above

Ans : A

Explanation: E-R modeling technique is a Top-down approach.

6.Rows of a relation are called

(a) tuples

(b) a relation row

(c) a data structure

(d) an entity

Ans: a

7.Normalization is a process of restructuring a relation to

(a) minimize duplication of data in a database

(b) maximize duplication of data to ensure reliability

(c) make it of uniform size

(d) allow addition of data

Ans: a

8. In ER model the details of the entities are hidden from the user. This process is called :

A. generalization  
B. specialization  
C. abstraction  
D. none of these above

Ans : C

Explanation: In ER model the details of the entities are hidden from the user. This process is called abstraction.

9.Which of the following refers to the number of attributes in a relation?

a. Degree

b. Row

c. Column

d. All of the above

Ans:c

10.The Entity Customer has three candidate keys: a) CustId b) Email and c) ContactNo. Suggest the best primary key for this entity.

A. CustId  
B. Email  
C. ContactNo  
D. CustId and ContactNo

Ans:a

11.A many to many relationship between two entities usually results in how many tables?

A. One  
B. Two  
C. Three  
D. Four

Ans : C

Explanation: A many to many relationship between two entities usually results in Three tables.

12.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

.Ans : A

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

13.Every weak entity set can be converted into a strong entity set by:

A. using generalization  
B. adding appropriate attributes  
C. using aggregation  
D. none of the above

Ans : B

Explanation: Every weak entity set can be converted into a strong entity set by adding appropriate attributes.

14.Every weak entity set can be converted to a strong entity set by :

A. Using generalization  
B. Simply adding appropriate attribute  
C. Using aggregation  
D. Repeating the entity set several times

Ans : A

Explanation: Every weak entity set can be converted to a strong entity set by Using generalization

15.The attribute AGE is calculated from DATE\_OF\_BIRTH. The attribute AGE is

A. Single valued  
B. Multi valued  
C. Composite  
D. Derived

Ans : D

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

16.Which of the following can be a multivalued attribute?

A. Phone\_number  
B. Name  
C. Date\_of\_birth  
D. All of the mentioned

Ans : A

Explanation: Name and Date\_of\_birth cannot hold more than 1 value.

17.Which of the following is a single valued attribute?

A. Register\_number  
B. Address  
C. SUBJECT\_TAKEN  
D. Reference

Ans : A

Explanation: Register\_number is a single valued attribute.

18.Data integrity constraints are used to:  
a) Control who is allowed access to the data  
b) Ensure that duplicate records are not entered into the table  
c) Improve the quality of data entered for a specific property (i.e., table column)  
d) Prevent users from changing the values stored in the table

Answer: c

19.A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ key is a minimal super key

a) Primary

b) Foreign

c) Candidate

d) Non-Prime

Answer: c Clarification: In the relational model of databases, a candidate key of a relation is a minimal superkey for that relation

20. What is true about Unique and primary key?

a) Unique can have multiple NULL values but Primary can’t have.

b) Unique can have single NULL value but Primary can’t have even single.

c) Both can have duplicate values

d) None of the Mentioned

Answer: b Clarification: Primary key doesn’t allow Null values and Unique key allows Null value, but only one Null value

21.A Key which is a set of one or more columns that can identify a record uniquely is called?

a) Natural key

b) Candidate key

c) Not Null key

d) Alternate key

Answer: b

Clarification: A candidate key is a combination of attributes that can be uniquely used to identify a database record without any extraneous data. Each table may have one or more candidate keys. One of these candidate keys is selected as the table primary key.

22.Which key accepts multiple NULL values?

a) Foreign Key

b) Unique Key

c) Primary Key

d) None of the Mentioned

Answer: a

Clarification: A foreign key is a key used to link two tables together. This is sometimes called a referencing key.Foreign Key is a column or a combination of columns whose values match a Primary Key in a different table.

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

a) UNIQUE

b) Primary key

c) Foreign key

d) None of the mentioned

Answer: c

Clarification: FOREIGN KEY constraints identify and enforce the relationships between tables.

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

a) Primary key constraint

b) Not Null constraint

c) Foreign Key constraint

d) Check constraint

Answer: a

Clarification: Each table is having only one primary key constraint and it contains only unique values.

25. 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

Answer: c

Clarification: Super key is the superset of all the keys in a relation.

26. 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

Answer: b

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

27.Which one of the following cannot be taken as a primary key?

a) Id

b) Register number

c) Dept\_id

d) Street

Answer: d

Clarification: Street is the only attribute which can occur more than once

28.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

Answer: a

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

29.: If any of the foreign-key columns is null, the tuple is defined automatically to satisfy the

A. Integrity

B. Atomicity

C. Isolation

D. Constraint

Answer: d

30.: By default, in SQL a foreign key references the primary-key attributes of the

A. Referencing table

B. Referenced table

C. Primary table

D. Both the tables

Answer: b