

UNIT-I: Introduction to Database and System Architecture

I. Choose the correct answer:

1. A database is a collection of:

- a) Programs
- b) Related data
- c) Hardware devices
- d) Operating systems

Answer: b) Related data

2. Which of the following is an application of Database Management Systems?

- a) Banking
- b) Railway reservation
- c) Library management
- d) All of the above

Answer: d) All of the above

3. In a traditional file system, data redundancy is:

- a) Eliminated
- b) Minimized
- c) High
- d) Not possible

Answer: c) High

4. The main advantage of DBMS over file systems is:

- a) Increased redundancy
- b) Data independence
- c) Slower processing
- d) Complex access

Answer: b) Data independence

5. The physical level of data abstraction describes:

- a) How users see data
- b) Entire database structure
- c) How data is stored in storage devices
- d) Application programs

Answer: c) How data is stored in storage devices

6. Which level of data abstraction is closest to the users?

- a) Physical level
- b) Logical level
- c) View level
- d) Internal level

Answer: c) View level

7. A data model is used to:

- a) Store data physically
- b) Describe database structure
- c) Design operating systems
- d) Create hardware devices

Answer: b) Describe database structure

8. Which of the following is a data model?

- a) Relational model
- b) ER model
- c) Network model
- d) All of the above

Answer: d) All of the above

9. Who is responsible for defining the database schema?

- a) End user
- b) Database Administrator
- c) Programmer
- d) Operator

Answer: b) Database Administrator

10. The person responsible for database security is:

- a) End user
- b) DBA
- c) Clerk
- d) Data entry operator

Answer: b) DBA

11. An entity represents:

- a) Relationship between attributes
- b) A real-world object
- c) A database table only
- d) A report

Answer: b) A real-world object

12. A collection of similar entities is called:

- a) Attribute set
- b) Entity set
- c) Relationship set
- d) View set

Answer: b) Entity set

13. Which symbol is used to represent an entity in an ER diagram?

- a) Rectangle
- b) Oval
- c) Diamond
- d) Triangle

Answer: a) Rectangle

14. Attributes in ER diagrams are represented by:

- a) Rectangle
- b) Circle/Oval
- c) Diamond
- d) Square

Answer: b) Circle/Oval

15. Relationships in ER diagrams are represented by:

- a) Rectangle
- b) Oval
- c) Diamond
- d) Triangle

Answer: c) Diamond

16. Which attribute uniquely identifies an entity?

- a) Composite attribute
- b) Multivalued attribute
- c) Key attribute
- d) Derived attribute

Answer: c) Key attribute

17. A composite attribute can be:

- a) Divided into smaller subparts
- b) Derived from another attribute
- c) Have multiple values

d) Cannot be divided

Answer: a) Divided into smaller subparts

18. Which of the following is a multivalued attribute?

a) Age

b) Name

c) Phone Numbers

d) Salary

Answer: c) Phone Numbers

19. Converting an ER model into relational tables is known as:

a) Physical design

b) Logical database design

c) Data abstraction

d) Data mining

Answer: b) Logical database design

20. Extended ER features include:

a) Specialization

b) Generalization

c) Aggregation

d) All of the above

Answer: d) All of the above

Fill in the Blanks

1. A _____ is an organized collection of related data.

Answer: Database

2. Banking, library, and reservation systems are examples of _____ applications.

Answer: database

3. In a file system, data _____ is usually high.

Answer: redundancy

4. DBMS provides data _____ from application programs.

Answer: independence

5. The three levels of data abstraction are physical, logical, and _____ levels.

Answer: view

6. The _____ level describes how data is actually stored.

Answer: physical

7. The _____ model represents data using tables.

Answer: relational

8. The person responsible for managing a database is called _____.

Answer: DBA (Database Administrator)

9. An _____ represents a real-world object in the ER model.
Answer: entity
10. A collection of similar entities is called an _____.
Answer: entity set
11. In an ER diagram, entities are represented using _____.
Answer: rectangles
12. Attributes are represented by _____ in an ER diagram.
Answer: ovals
13. Relationships are represented by _____ shapes.
Answer: diamond
14. An attribute that uniquely identifies an entity is called a _____ attribute.
Answer: key
15. A _____ attribute can be divided into smaller components.
Answer: composite
16. A _____ attribute can have more than one value.
Answer: multivalued
17. Specialization and generalization are features of the _____ ER model.
Answer: Extended
18. The process of designing database tables from an ER diagram is called _____ database design.
Answer: logical
19. The overall logical structure of a database is called the database _____.
Answer: schema
20. A relationship among entities is represented by a _____ set.
Answer: relationship