1. What is the purpose of normalization in database design?
   1. **To eliminate data redundancy**
   2. To improve data security
   3. To speed up data retrieval
   4. To simplify database administration
2. Which normal form ensures that every non-key attribute is functionally dependent on the entire primary key?
   1. First normal form (1NF)
   2. **Second normal form (2NF)**
   3. Third normal form (3NF)
   4. Boyce-Codd normal form (BCNF)
3. A functional dependency is a relationship between:
   1. Two primary keys
   2. A primary key and a foreign key
   3. **Two attributes in a relation**
   4. Two different relations
4. In a functional dependency A → B, which of the following statements is true?
   1. **Attribute A determines attribute B**
   2. Attribute B determines attribute A
   3. Both attributes A and B determine each other
   4. There is no relationship between attributes A and B
5. Which normal form allows partial dependencies to be eliminated?
   1. First normal form (1NF)
   2. **Second normal form (2NF)**
   3. Third normal form (3NF)
   4. Fourth normal form (4NF)
6. The process of decomposing a relation into smaller, well-structured relations is known as:
   1. Normalization
   2. Indexing
   3. Denormalization
   4. **Decomposition**
7. Which normal form allows transitive dependencies to be eliminated?
   1. First normal form (1NF)
   2. Second normal form (2NF)
   3. **Third normal form (3NF)**
   4. Fourth normal form (4NF)
8. Which normal form requires that there are no non-trivial multivalued dependencies in a relation?
   1. First normal form (1NF)
   2. Second normal form (2NF)
   3. Third normal form (3NF)
   4. **Boyce-Codd normal form (BCNF)**
9. Which of the following is an example of a transitive dependency?
   1. A → B
   2. A → C
   3. B → C
   4. **A → B → C**
10. The process of breaking down a relation into multiple relations to eliminate redundancy is called:
    1. **Decomposition**
    2. Normalization
    3. Denormalization
    4. Partitioning
11. Which normal form allows only a single-valued dependency between attributes in a relation?
    1. First normal form (1NF)
    2. Second normal form (2NF)
    3. **Third normal form (3NF)**
    4. Fourth normal form (4NF)
12. Which normal form is an extension of the third normal form and eliminates the need for certain types of join operations?
    1. Fourth normal form (4NF)
    2. Fifth normal form (5NF)
    3. Sixth normal form (6NF)
    4. **Boyce-Codd normal form (BCNF)**
13. Which of the following is not a functional dependency?
    1. A → B
    2. AB → C
    3. **A → BC**
    4. AB → AB
14. Which normal form is achieved when every non-key attribute is fully functionally dependent on the primary key?
    1. First normal form (1NF)
    2. Second normal form (2NF)
    3. **Third normal form (3NF)**
    4. Boyce-Codd normal form (BCNF)
15. Which normal form is also known as the "Domain/Key" normal form?
    1. **First normal form (1NF)**
    2. Second normal form (2NF)
    3. Third normal form (3NF)
    4. Fourth normal form (4NF)
16. In a relation, if attribute A uniquely determines attribute B, and attribute B uniquely determines attribute C, this is an example of:
    1. **Transitive dependency**
    2. Multivalued dependency
    3. Functional dependency
    4. Candidate key
17. Which normal form is based on the concept of multivalued dependencies?
    1. First normal form (1NF)
    2. Second normal form (2NF)
    3. Third normal form (3NF)
    4. **Fourth normal form (4NF)**
18. Which of the following is not a benefit of normalization?
    1. Improved data integrity
    2. **Increased storage efficiency**
    3. Simplified data modification
    4. Enhanced data availability
19. Which normal form is based on the concept of partial dependencies?
    1. First normal form (1NF)
    2. **Second normal form (2NF)**
    3. Third normal form (3NF)
    4. Fourth normal form (4NF)
20. Which of the following is a valid functional dependency?
    1. A → A
    2. **A → B**
    3. A → AB
    4. A → 1
21. Which normal form guarantees that there are no repeating groups in a relation?
    1. **First normal form (1NF)**
    2. Second normal form (2NF)
    3. Third normal form (3NF)
    4. Fourth normal form (4NF)
22. Which of the following is an example of a non-trivial functional dependency?
    1. A → A
    2. **A → B**
    3. AB → A
    4. A → 1
23. Which normal form allows dependencies on a combination of attributes but not on individual attributes?
    1. First normal form (1NF)
    2. **Second normal form (2NF)**
    3. Third normal form (3NF)
    4. Fourth normal form (4NF)
24. Which normal form is stricter, BCNF or 3NF?
    1. **BCNF**
    2. 3NF
    3. They have the same level of strictness
    4. It depends on the specific database design
25. Which of the following is an example of a composite attribute?
    1. Name
    2. Age
    3. **Address**
    4. EmployeeID
26. Which normal form allows dependencies on a combination of attributes and individual attributes?
    1. First normal form (1NF)
    2. Second normal form (2NF)
    3. **Third normal form (3NF)**
    4. Fourth normal form (4NF)
27. Which normal form is a more relaxed version of the Boyce-Codd normal form?
    1. First normal form (1NF)
    2. Second normal form (2NF)
    3. Third normal form (3NF)
    4. **Fourth normal form (4NF)**
28. Which of the following is a valid reason to denormalize a database?
    1. To eliminate redundancy
    2. To improve data integrity
    3. To simplify data modification
    4. **To optimize performance**
29. By normalizing relations or sets of relations, one minimizes \_\_\_.
    1. Data
    2. Fields
    3. **Redundancy**
    4. Database
30. In addition to removing undesirable characteristics, normalization also eliminates \_\_\_ anomalies.
    1. Insert
    2. Update
    3. Delete
    4. **All of the above**
31. In practical applications, how many types of Normal Forms are there?
    1. 3
    2. **4**
    3. 5
    4. 6
32. When a relation is in 2NF and there is \_\_\_, it is in 3NF.
    1. Transition Dependency
    2. **No Transition Dependency**
    3. Relational Dependency
    4. No Relational Dependency