

1. What is the main purpose of normalization in DBMS?

- A) To reduce redundancy
- B) To improve security
- C) To increase size
- D) To reduce indexing

Answer: A

2. Which of the following is NOT an anomaly solved by normalization?

- A) Insertion anomaly
- B) Deletion anomaly
- C) Update anomaly
- D) Join anomaly

Answer: D

3. Which normal form removes repeating groups of data?

- A) 1NF
- B) 2NF
- C) 3NF
- D) BCNF

Answer: A

4. A table is in 1NF if:

- A) It has no partial dependency
- B) It has no transitive dependency
- C) It has atomic values
- D) It has foreign keys

Answer: C

5. Which normal form eliminates partial dependency?

- A) 1NF
- B) 2NF
- C) 3NF
- D) BCNF

Answer: B

6. Which normal form eliminates transitive dependency?

- A) 1NF
- B) 2NF
- C) 3NF
- D) 4NF

Answer: C

7. Which normal form is stricter than 3NF?

- A) 4NF
- B) 2NF
- C) BCNF
- D) 1NF

Answer: C

8. Which anomaly occurs when deleting a row causes unintended data loss?

- A) Update anomaly
- B) Insertion anomaly
- C) Deletion anomaly
- D) None

Answer: C

9. Which anomaly occurs when we cannot insert data due to missing fields?

- A) Update anomaly
- B) Insertion anomaly
- C) Deletion anomaly
- D) None

Answer: B

10. Which anomaly occurs when updating one record requires multiple changes?

- A) Update anomaly
- B) Insertion anomaly
- C) Deletion anomaly
- D) None

Answer: A

11. In 2NF, a relation must first satisfy:

- A) 1NF
- B) 3NF
- C) BCNF
- D) None

Answer: A

12. A relation is in 3NF if:

- A) It is in 2NF and has no transitive dependencies
- B) It has no primary key

- C) It has repeating groups
- D) It has no anomalies

Answer: A

13. Which dependency is removed in 3NF?

- A) Partial dependency
- B) Transitive dependency
- C) Multivalued dependency
- D) None

Answer: B

14. Which of the following is NOT a type of dependency?

- A) Functional dependency
- B) Transitive dependency
- C) Multivalued dependency
- D) Indexed dependency

Answer: D

15. Which key uniquely identifies a row in a relation?

- A) Foreign key
- B) Primary key
- C) Candidate key
- D) Super key

Answer: B

16. Which of the following can be a candidate key?

- A) Primary key
- B) Alternate key
- C) Super key with no redundancy
- D) All of these

Answer: D

17. Which is the highest normal form generally used in practice?

- A) 2NF
- B) 3NF
- C) BCNF
- D) 5NF

Answer: C

18. Which normal form deals with multivalued dependencies?

- A) 1NF
- B) 4NF
- C) 3NF
- D) BCNF

Answer: B

19. Which normal form deals with join dependency?

- A) 3NF
- B) BCNF
- C) 4NF
- D) 5NF

Answer: D

20. A table with only atomic values but having partial dependency is in:

- A) 1NF
- B) 2NF
- C) 3NF
- D) BCNF

Answer: A

21. Which of these is an example of partial dependency?

- A) {RollNo, Subject} \rightarrow StudentName
- B) RollNo \rightarrow StudentName
- C) Subject \rightarrow Teacher
- D) RollNo \rightarrow Marks

Answer: A

22. Which of these is an example of transitive dependency?

- A) RollNo \rightarrow Dept, Dept \rightarrow HOD
- B) RollNo \rightarrow Marks
- C) RollNo \rightarrow StudentName
- D) RollNo \rightarrow RollNo

Answer: A

23. Which normal form removes both insertion and deletion anomalies effectively?

- A) 1NF
- B) 2NF
- C) 3NF
- D) BCNF

Answer: C

24. Which of the following is a superset of candidate keys?

- A) Super key
- B) Foreign key
- C) Alternate key
- D) Primary key

Answer: A

25. What is the relation between primary key and candidate key?

- A) Every primary key is a candidate key
- B) Every candidate key is a primary key
- C) Both are same
- D) They are unrelated

Answer: A

26. Which normal form may still have anomalies if transitive dependency exists?

- A) 1NF
- B) 2NF
- C) 3NF
- D) BCNF

Answer: B

27. Which dependency means one attribute depends on part of a composite key?

- A) Partial dependency
- B) Transitive dependency
- C) Functional dependency
- D) Multivalued dependency

Answer: A

28. Which dependency means non-key attribute depends on another non-key attribute?

- A) Partial dependency
- B) Transitive dependency
- C) Functional dependency
- D) None

Answer: B

29. What is the main goal of BCNF?

- A) Remove anomalies left by 3NF
- B) Remove atomic violations
- C) Remove multivalued dependencies

D) Remove join dependency

Answer: A

30. Which normal form is considered stricter than 3NF but not always required?

A) 2NF

B) BCNF

C) 1NF

D) 4NF

Answer: B

31. A table not in 1NF must have:

A) Multivalued attributes

B) Partial dependency

C) Transitive dependency

D) None

Answer: A

32. Which normal form ensures that every determinant is a candidate key?

A) 2NF

B) 3NF

C) BCNF

D) 4NF

Answer: C

33. Which dependency is a violation of 4NF?

A) Multivalued dependency

B) Functional dependency

C) Transitive dependency

D) Partial dependency

Answer: A

34. Which normal form is also called project-join normal form?

A) 3NF

B) 4NF

C) 5NF

D) BCNF

Answer: C

35. Which normal form is sometimes called elementary key normal form?

A) 1NF

- B) 2NF
- C) BCNF
- D) 5NF

Answer: C

36. A table is in 2NF if:

- A) It is in 1NF and has no partial dependency
- B) It has atomic values
- C) It has no foreign key
- D) It has no transitive dependency

Answer: A

37. Which normal form is achieved by removing derived attributes?

- A) 1NF
- B) 2NF
- C) 3NF
- D) BCNF

Answer: C

38. Which is an example of insertion anomaly?

- A) Cannot insert a student without a course
- B) Cannot insert a course without a student
- C) Both A and B
- D) None

Answer: C

39. Which is an example of deletion anomaly?

- A) Deleting last student removes course info
- B) Deleting last course removes student info
- C) Both A and B
- D) None

Answer: C

40. Which is an example of update anomaly?

- A) Updating course fee requires multiple changes
- B) Updating student address changes one row
- C) Updating primary key automatically updates all
- D) None

Answer: A

41. Which is true about normalization?

- A) Reduces redundancy
- B) Improves data consistency
- C) Organizes data logically
- D) All of these

Answer: D

42. Which of these is a candidate key but not primary key?

- A) Alternate key
- B) Super key
- C) Foreign key
- D) None

Answer: A

43. Which of the following is the highest form of normalization?

- A) 3NF
- B) BCNF
- C) 4NF
- D) 5NF

Answer: D

44. What is denormalization?

- A) Reversing normalization for performance
- B) Adding more tables
- C) Removing primary keys
- D) Adding redundancy to constraints

Answer: A

45. Which is true about functional dependency?

- A) $X \rightarrow Y$ means Y depends on X
- B) It is used in normalization
- C) Helps to identify keys
- D) All of these

Answer: D

46. Which normal form ensures no multi-valued attributes?

- A) 1NF
- B) 2NF
- C) 3NF
- D) BCNF

Answer: A

47. Which is stronger, BCNF or 3NF?

A) BCNF

B) 3NF

C) Both same

D) None

Answer: A

48. Which is stronger, 4NF or BCNF?

A) 4NF

B) BCNF

C) Both same

D) None

Answer: A

49. Which is stronger, 5NF or 4NF?

A) 5NF

B) 4NF

C) Both same

D) None

Answer: A

50. Which of the following is NOT an advantage of normalization?

A) Reduces redundancy

B) Improves data integrity

C) Simplifies queries always

D) Reduces anomalies

Answer: C