Government Zirtiri Residential Science College

Subject: **BCA**
Paper name: **Database Management System**
Paper No: **BCA402**
Semester: **Fourth semester**

A. Multiple choice questions [75 (15 from each unit)]

1. The data model which describes how the data is actually stored is:
   a) Internal model
   b) External model
   c) Logical model
   d) None of these

2. The scheme for hierarchical database is:
   a) A tree
   b) A graph
   c) A B tree
   d) None of the above

3. Data about data is normally termed as:
   a) Directory
   b) Data bank
   c) Meta data
   d) None of the above

4. A top to bottom relationship among the items in a database is established by a
   a) Hierarchical schema
   b) Network schema
   c) Relational schema
   d) All of the above

5. A data model is
   a) Used to describe structure of database
   b) Set of basic operations on the database
   c) Both (a) and (b)
   d) None of the above

6. Which one of the following design is both software and hardware independent?
   a) Logical
   b) Physical
   c) Conceptual
   d) None of the above

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7. A schema describes:
   a) Record relationship
   b) Data elements
   c) Record and files
   d) All of the above

8. A computer file contains several records. What does each record contain?
   a) Bytes
   b) Words
   c) Fields
   d) Database

9. Architecture of the database can be viewed as
   a) two levels.
   b) four levels.
   c) three levels.
   d) one level.

10. In the architecture of a database system external level is the
    a) physical level.
    b) logical level.
    c) conceptual level
    d) view level.

11. DBMS helps achieve
    a) Data independence
    b) Centralized control of data
    c) Neither (A) or (B)
    d) Both (A) and (B)

12. Administrative supervision of database activities is the responsibility of the
    a) Database administrator
    b) Database manager
    c) System administrator
    d) All of the above

13. The following may be regarded as a metadata:
    a) E-R diagram
    b) Table
    c) Data dictionary
    d) View of a database

14. Which database level is closest to the users?
   a) External
   b) Internal
   c) Physical
   d) Conceptual

15. Which of the following is record based logical model?
   a) Network model
   b) Object oriented model
   c) E-R model
   d) None of these

16. A primary key:
   a) Is also referred to as a composite key
   b) Is a unique identifier in a column
   c) Uniquely identifies the data in row
   d) Must be accompanied by a corresponding foreign key

17. E-R model uses which symbol to represent weak entity set :
   a) Dotted rectangle
   b) Diamond
   c) Doubly outlined rectangle
   d) None of the above

18. The E-R model includes additional concepts like
   a) Specialization
   b) Generalization
   c) Categorization
   d) All of the above

19. E-R modeling technique is a:
   a) Top down approach
   b) Bottom up approach
   c) Left-right approach
   d) None of the above

20. In an E-R model, oval represents :
   a) Entity sets
   b) Attributes
   c) Relationships
   d) Links

21. In the relational model, cardinality is termed as:
    a) A number of tuples.
    b) A number of attributes.
    c) A number of tables.
    d) A number of constraints.

22. A relational database consists of a collection of
    a) Tables
    b) Fields
    c) Records
    d) Keys

23. Which one of the following cannot be taken as a primary key?
    a) Id
    b) Register number
    c) Dept_id
    d) Street

24. Which one of the following produces the relation that has attributes of R1 and R2?
    a) Cartesian product
    b) Difference
    c) Intersection
    d) Product

25. Which one of the following is not a valid relational database?
    a) Sybase
    b) Oracle
    c) IMS
    d) Unify

26. In a relational database a referential integrity constraint can be specified with the help of:
    a) Primary key
    b) Foreign key
    c) Secondary key
    d) None of the above

27. In a relational schema, each tuple is divided into fields is called:
    a) Relations
    b) Domains
    c) Queries
    d) None of the above

28. Specialization is:
    a) Top down approach
    b) Bottom up approach
    c) Both A and B
    d) None of the above

29. Large collection of files are called:
    a) Fields
    b) Records
    c) Database
    d) File system

30. Which one of the following attribute can be taken as a primary key?
    a) Name
    b) Street
    c) Id
    d) Department

31. Relational calculus is a
    a) Procedural language.
    b) Non- Procedural language.
    c) Data definition language.
    d) High-level language.

32. Which of the following is used to denote the selection operation in relational algebra?
    a) Pi (Greek)
    b) Sigma (Greek)
    c) Lambda (Greek)
    d) Omega (Greek)

33. A function that has no partial functional dependencies is in
    a) 3NF
    b) 2NF
    c) 4NF
    d) BCNF

34. A normal form in which every determinant is a key:
    a) 2NF
    b) 3NF
    c) BCNF
    d) 4NF

35. Which of the following statement is/are true?
    a) A relation is in BCNF if it is not in 4NF
    b) BCNF is stricter the 3NF
    c) A relation is in BCNF if every determinant of the relation is a candidate key.
    d) All are true

36. Which of the following is true?
    a) A relation in BCNF is always in 3NF
    b) A relation in 3NF is always in BCNF
    c) BCNF and 3NF are same
    d) A relation in BCNF is not in 3NF

37. Functional dependencies are a generalization of :
    a) Key dependencies
    b) Relation dependencies
    c) Database dependencies
    d) None of these.

38. Cartesian product in relational algebra is
    a) Unary operator
    b) Binary operator
    c) Ternary operator
    d) Not defined.

39. Which of the operations constitute a basic set of operations for manipulating relational data?
    a) Predicate calculus
    b) Relational calculus
    c) Relational algebra
    d) None of the above

40. The natural join is equal to:
    a) Cartesian product
    b) Combination of union and Cartesian product
    c) Combination of selection and Cartesian product
    d) Combination of projection and Cartesian product

41. A data manipulation command combines the records from one or more tables is called
    a) SELECT
    b) PROJECT
    c) JOIN
    d) PRODUCT

42. Which of the following operations need the participating relations to be union compatible?
    a) UNION
    b) INTERSECTION
    c) DIFFERENCE
    d) All of the above

43. Which of the following is not valid unary operation in the relational algebra?
    a) SELECT
    b) MIN
    c) PROJECT
    d) RENAME

44. Functional Dependencies are the types of constraints that are based on:
    a) Key
    b) Key revisited
    c) Superset key
    d) None of the mentioned

45. A table joined with itself is called
    a) Join
    b) Self join
    c) Outer join
    d) Equi join

46. What is the language used by most of the DBMS for helping their users to access data.
    a) High level language
    b) Query language
    c) SQL
    d) 4GL

47. The language used in application program to request data from the DBMS is referred to as the:
    a) DML
    b) DDL
    c) Query language
    d) All of the above

48. Which one of the following is an authorization command of SQL?
    a) Access
    b) Grant
    c) Allow
    d) None of these

49. Grant is a command from SQL type:
    a) DDL
    b) DCL
    c) DML
    d) All of the above

50. Which one of the following is used to define the structure of the relation, deleting relations and relating schemas?
    a) DML(Data Manipulation Langauge)
    b) DDL(Data Definition Langauge)
    c) Query
    d) Relational Schema

51. In the given query which of the keyword has to be inserted?
       INSERT INTO employee _____ (1002,Joey,2000);
    a) Table
    b) Values
    c) Relation
    d) Field

52. SELECT * FROM employee WHERE dept_name="Comp Sci";
    In the SQL given above there is an error . Identify the error.
    a) Dept_name
    b) Employee
    c) "Comp Sci"
    d) From

53. UPDATE instructor _____ salary= salary * 1.05;
    Fill in with correct keyword to update the instructor relation.
    a) Where
    b) Set
    c) In
    d) Select

54. Which one of these is an aggregate function in SQL?
    a) AVG
    b) SELECT
    c) ORDER BY
    d) None of these

55. Which one of the following aggregate SQL function returns number of rows?
    a) AVG
    b) MIN
    c) COUNT
    d) SUM

56. ODBC stands for
   a) Object Database Connectivity.
   b) Oral Database Connectivity.
   c) Oracle Database Connectivity.
   d) Open Database Connectivity.

57. The language which has recently become the defacto standard for interfacing application programs with relational database system is
   a) Oracle.
   b) SQL.
   c) DBase.
   d) 4GL.

58. The full form of DDL is
   a) Dynamic Data Language
   b) Detailed Data Language
   c) Data Definition Language
   d) Data Derivation Language

59. Which of the following creates a virtual relation for storing the query?
   a) Function
   b) View
   c) Procedure
   d) None of the mentioned

60. The statement in SQL which allows to change the definition of a table is
   a) Alter
   b) Update.
   c) Create.
   d) Select.

61. Rollback of transactions is normally used to:
   a) Recover from transaction failure
   b) Update the transaction
   c) Retrieve old records
   d) Repeat a transaction

62. Data processing cycle consists of
   a) Input cycle and output cycle
   b) Input cycle, output cycle, storage and processing cycle
   c) Output cycle and processing cycle
   d) None of these

63. A deadlock exists in the system if and only if the wait for graph:
    a) Has a cycle in it
    b) Has a path from first node to last node
    c) Is a tree
    d) None of the above

64. Which commands are used to control which users have which privilege over which objects?
    a) QUE and QUIST
    b) GRANT and REVOKE
    c) CASCADE and MVD
    d) None of the above

65. When a deadlock is detected the recovery is normally accomplished by:
    a) Rollback of transaction
    b) Locking of data
    c) Consistency checking
    d) None of these

66. Media recovery refers to recovering database:
    a) After a system crash
    b) After some individual transaction has failed
    c) After database has been physically damaged
    d) None of the above.

67. In multiuser database, if two users wish to update the same record at the same time, they are prevented by doing so by
    a) Jamming
    b) Password
    c) Documentation
    d) Record lock

68. One of the following steps is not involved in processing a query:
    a) Parsing and transaction
    b) Optimization
    c) Evaluation
    d) Distribution

69. Which technique is used to restore a database upto the last consistent state after system failure?
    a) Backup
    b) Recovery
    c) Both a and b
    d) None of the above

70. What is log in log based recovery system?
    a) Filter
    b) Records
    c) Blocks
    d) Numbers

71. What is used for database security?
    a) Data encryption
    b) A view
    c) Finger print
    d) All of the above

72. Data security tread include:
    a) Privacy invasion
    b) Hardware protection
    c) Fraudulent manipulation of data
    d) All of the above

73. Data integrity means:
    a) Providing first access to stored data
    b) Ensuring correctness and consistency of data
    c) Providing data sharing
    d) None of the above

74. Authentication refers to:
    a) Methods of restricting user access to system
    b) Controlling access to portions on the database
    c) Controlling the operation on the data
    d) All of the above

75. Prevention of access to the database by unauthorized users is referred to as:
    a) Integrity
    b) Productivity
    c) Security
    d) Reliability

B. **Fill up the blanks [15 (3 from each unit)]**

1. In an object-oriented model, one object can access data of another object by passing _____.

2. _____ is a process of combining two or more entities to form a more meaningful new entity.

3. _____ is a bottom-up approach in which two or more entities of lower level combine to form a higher level entity if they have some attributes in common.

4. In E-R model, the details of the entities are hidden from the user. The process is called_____.

5. A _____ in a table represents a relationship among a set of values. (column)

6. The term _____ is used to refer to a row.

7. Third normal from is based on the concept of _____.

8. Relational Algebra is a _____ query language that takes two relations as input and produces another relation as an output of the query.

9. In the _____ normal form, a composite attribute is converted to individual attributes.

10. To remove a relation from an SQL database, we use the _____ command.

11. SELECT name FROM instructor WHERE dept name = 'Physics' ORDER BY name;
    By default, the order by clause lists items in _____ order.

12. _____ function divides one numeric expression by another and returns the remainder.

13. _____ is responsible for using that the database remains in a consistent state despite system failure.

14. In the _____ phase, the system replays updates of all transactions by scanning the log forward from the last checkpoint.

15. The log is a sequence of _____ recording all the update activities in the database.

Key Answers

A. **Multiple choice questions**

1. a) Internal model	2. a) A tree
3. c) Meta data	4. a) Hierarchical schema
5. c) Both (a) and (b)	6. c) Conceptual
7. d) All of the above	8. c) Fields

9. c) three levels.
10. d) view level.
11. d) Both (A) and (B)
12. a) Database administrator
13. c) Data dictionary
14. a) External
15. a) Network model
16. b) Is a unique identifier in a column
17. c) Doubly outlined rectangle
18. d) All of the above
19. a) Top down approach
20. b) Attributes
21. a) A number of tuples.
22. a) Tables
23. d) Street
24. a) Cartesian product
25. d) Unify
26. b) Foreign key
27. b) Domains
28. a) Top down approach
29. c) Database
30. c) Id
31. b) Non- Procedural language.
32. b) Sigma (Greek)
33. b) 2NF
34. c) BCNF
35. d) All are true
36. a) A relation in BCNF is always in 3NF
37. a) Key dependencies
38. b) Binary operator
39. c) Relational algebra
40. d) Combination of projection and Cartesian product
41. c) JOIN
42. d) All of the above
43. b) MIN
44. a) Key
45. b) Self join
46. b) Query language
47. a) DML
48. b) Grant
49. b) DCL
50. b) DDL(Data Definition Langauge)
51. b) Values
52. c) "Comp Sci"
53. b) Set
54. a) AVG
55. c) COUNT
56. d) Open Database Connectivity.
57. b) SQL
58. c) Data Definition Language
59. b) View
60. a) Alter
61. a) Recover from transaction failure
62. b) Input cycle, output cycle, storage and processing cycle
63. a) Has a cycle in it
64. b) GRANT and REVOKE
65. a) Rollback of transaction
66. c) After database has been physically
damaged 67. d) Record lock
68. d) Distribution
69. b) Recovery
70. b) Records
71. d) All of the above
72. d) All of the above
73. b) Ensuring correctness and consistency of data
74. d) All of the above
75. c) Security

B. Fill up the blanks

1. Message
2. Aggregation
3. Generalization
4. abstraction
5. column
6. tuple
7. Transitive dependency
8. procedural
9. First Normal form
10. Drop

11. ascending
12. MOD
13. Transaction manager
14. redo
15. log records