CSC 104

B.Sc. (IInd SEMESTER) EXAMINATION, 2023-24

COMPUTER SCIENCE

(Database Management System)

Credit (4+0)

(CBCS Mode)

नोट : पुस्तिका में 50 प्रश्न दिये गये हैं, सभी प्रश्न करने होंगे। प्रत्येक प्रश्न 1.5 अंक का होगा।

1.   Which of the following is a function of the DBMS ?

   (A)   Storing data

   (B)   Providing multi-users access control

   (C)   Data Integrity

   (D)   All of the above

2.   Which is the set of one or more attributes taken collectively to uniquely identify a record ?

   (A)   Primary Key

   (B)   Foreign Key

   (C)   Super Key

   (D)   Candidate key

3.   Which of the following is not a feature of DBMS ?

   (A)   Recovery

   (B)   High Level of Security

   (C)   Single-user Access only

   (D)   Support ACID Property

4.   Let R = (A,B,C,D,E,F) be a relation scheme with the following dependencies:
   C→F E→A, EC→ D, A→ B.

   (A)   CD

   (B)   EC

   (C)   AE

   (D)   AC

5.   The DBMS acts as an interfere between _____ and _____ of an enterprise-class system.

   (A)   Data and the DBMS

   (B)   OS and SQL

   (C)   Application, database

   (D)   The user and the software

6. Identify the characteristics of transactions

   (A) Atomicity

   (B) Durability

   (C) Isolation

   (D) All of the mentioned

7. Which among the following is a DCL languages ?

   (A) Grant

   (B) Revoke

   (C) Commit

   (D) Both (A) and (B)

8. The logical design, and the snapshot of the data at a given instant in time is known as ?

   (A) Instance & Relation

   (B) Relation & Schema

   (C) Domain & Schema

   (D) Schema & Instance

9. Which of the following is a concurrency problem ?

   (A) Temporary Update Problem

   (B) Incorrect Summary Problem

   (C) Lost Update Problem

   (D) All of the above

10. What is the notation to denote Tuple Relational calculus ?

    (A) $\{T \mid P(T)\}$

    (B) $\{P(T) \mid T\}$

    (C) $\{P(T)\}$

    (D) $\{T\}$

11. What is the Dirty Read Problem known as ?

    (A)   W-W Conflict

    (B)   W-R Conflict

    (C)   R-R Conflict

    (D)   None

12. The _____ operation, denoted by-, allows us to find tuples that are in one relation but are not in another.

    (A)   Union

    (B)   Set-difference

    (C)   Difference

    (D)   Intersection

13. The entity relationship set is represented in E-R diagram as.

    (A)   Double diamonds

    (B)   Undivided rectangles

    (C)   Dashed lines

    (D)   Diamond

14. The following functional dependencies are given :

$AB\text{->}CD, AF\text{->}D, DE\text{->}F, C\text{->}G, F\text{->}E, G\text{->}$

Which one of the following options is false ?

    (A)   CF+ = {ACDEFG}

    (B)   BG+ = {ABCDG}

    (C)   AF+ = {ACDEFG}

    (D)   AB+ = {ABCDG}

15. _____ means that the data used during the execution of a transaction cannot be used by a second transaction until the first one is completed.

    (A)   Consistency

    (B)   Atomicity

    (C)   Durability

    (D)   Isolation

16. Which of the following makes the transaction permanent in the database ?

   (A)   View

   (B)   Commit

   (C)   Rollback

   (D)   Flashback

17. Data about data is normally termed as.

   (A)   Directory

   (B)   Meta data

   (C)   Data bank

   (D)   None of the above

18. Consider the following query:

   SELECT name _____ instructor name, course id FROM instructor, teaches WHERE instructor. ID = teaches. ID; Which keyword must be used here to rename the field name ?

   (A)   From

   (B)   Rename

   (C)   As

   (D)   Join

19. Relation R has eight attributes ABCDEFGH. Fields of R contain only atomic values. $F = \{CH \text{-}> G, A \text{-}> BC, B \text{-}> CFH, E \text{-}> A, F \text{-}> EG\}$ is a set of functional dependencies (FDs) so that F+ is exactly the set FDs that hold for R.

   How many candidates keys does the relation R have ?

   (A)   3

   (B)   4

   (C)   5

   (D)   6

20. Data processing cycle consists of.

    (A) Input cycle and output cycle

    (B) Input cycle, output cycle and processing cycle

    (C) Output cycle and processing cycle

    (D) None of these

21. A view of a database that appears to an application program is known as.

    (A) Schema

    (B) Subschema

    (C) Virtual table

    (D) None of these

22. The term "TCL" stands for _____.

    (A) Ternary Control Language

    (B) Transmission Control Language

    (C) Transaction Central Language

    (D) Transaction Control language

23. In a relation database, every tuple divided into the fields are known as the

    _____.

    (A) Queries

    (B) Domains

    (C) Relations

    (D) All of the above

24. Which of the following is a top-down approach in which the entity's higher level can be divided into two lower sub-entitles ?

    (A) Aggregation

    (B) Generalization

    (C) Specialization

    (D) All of the above

25. SELECT emp_ name FROM department WHERE dept_ name LIKE'_____ Computer Science'; In the above –given Query, which of the following can be placed in the Query's blank portion to select the "dept _ name" that also contains Computer Science as its ending string ?

(A) &

(B) _

(C) %

(D) $

26. In E-R Model oval represents ?

(A) Entity sets

(B) Relationships

(C) Attributes

(D) Links

27. Which level of data abstraction which define how the data is actually stored is.

(A) Conceptual level

(B) File level

(C) Physical level

(D) None of these

28. A relationship among Students and Projects is.

(A) M:M relationship

(B) 1:M relationship

(C) 1:1 relationship

(D) None of these

29. Keys involved in relationship between tables is called.

(A) Candidate key

(B) Secondary key

(C) Foreign key

(D) Super key

30. If we want to eliminate, duplicates, we use the keyword _____ in the aggregate expression.

(A) Distinct

(B) Count

(C) Avg

(D) None

31. To include integrity constraint in an existing relation use :

(A) Create table

(B) Modify table

(C) Alter table

(D) Drop table

32. UPDATE instructor _____ salary = salary * 1.05; Fill with correct keyword to update the instructor relation.

(A) Where

(B) Set

(C) In

(D) Select

33. What are the ways of dealing with deadlock ?

(A) Deadlock prevention

(B) Deadlock recovery

(C) Deadlock detection

(D) All of the mentioned

34. Durability ensures the permanent changes after which operation.

(A) Rollback

(B) Insert

(C) Commit

(D) Applying lock

35. Which of the following is a type of relational operation ?

(A) Project Operation

(B) Union Operation

(C) Set Difference

(D) All of the above

36. How many types of relational calculus are there ?

(A) 1

(B) 3

(C) 2

(D) 4

37. _____ will undo all statements up to commit ?

(A) Transaction

(B) Flashback

(C) Rollback

(D) Abort

38. The term attribute refers to a _____ of a table.

(A) Record

(B) Column

(C) Tuple

(D) Key

39. What is true about Left Outer Join ?

(A) It contains all tuples that have the same common attribute names in A and B

(B) Tuples in A do not match tuples in B in the left outer join

(C) It is denoted by $\bowtie$.

(D) All the above

40. Which of the following is not a valid aggregate function ?

(A) Count

(B) Compute

(C) Sum

(D) Max

41. Which of the following is the correct order of a SQL statement ?

(A) Select, group by, where, having

(B) Select, where, group by, having

(C) Select, having, where, group by

(D) Select, where, having, group by

42. Which of the following statement is correct regarding the difference between TRUNCATE, DELETE and DROP command ?

I. Truncate is DDL Statement

II. Delete is DCL statement

III. Drop is DDL statement

IV. Truncate and Drop is DML statement

(A) I and III

(B) II and III

(C) I and IV

(D) II and IV

43. Which statement is used to get all data from the student table whose name starts with p ?

(A) SELECT *FROM student WHERE name LIKE '%p%';

(B) SELECT *FROM student WHERE name LIKE 'p%';

(C) SELECT *FROM student WHERE name LIKE '_p%';

(D) SELECT *FROM student WHERE name LIKE '%p';

44. Foreign key is the one in which the _____ of one relation is referenced in another relation.

   (A)   Foreign key

   (B)   Primary key

   (C)   References

   (D)   Check constrain

45. Consider a relation scheme R= (A, B, C, D, E, H) on which the following functional dependencies hold: {A->B, BC->D, E->C, D-> A}. What are the candidate keys of R ?

   (A)   AE, BE

   (B)   AE, BE, DE

   (C)   AEH, BEH, DEH

   (D)   AEH, BEH, BCH

46. Weak entity set is represented as.

   (A)   Underline

   (B)   Double line

   (C)   Double diamond

   (D)   Double rectangle

47. Consider attributes ID, CITY and NAME. Which one of this can be considered as a Primary key ?

   (A)   NAME

   (B)   ID

   (C)   CITY

   (D)   CITY, ID

48. In case of any shut down during transaction before commit which of the following statement is done automatically ?

   (A)   View

   (B)   Commit

   (C)   Rollback

   (D)   Flashback

49. A transaction which completes all its execution is said to be.

   (A)   Committed

   (B)   Aborted

   (C)   Rolled back

   (D)   Failed

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

   (A)   Attribute

   (B)   Tuple

   (C)   Field

   (D)   Instance

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