قائمة الاسئلة
امتحان نهاية الفصل الدراسي الأول - للعام الجامعي   1446 هـ - كلية العلوم :: مقرر اختياري (2) (نظم قواعد البيانات المتقدم) - (124106)-
واثق هادي قاسم دخان

1) The relational model represents the database as a ……...collection of
   1) + Relations
   2) - Table
   3) - Entity
   4) - View

2) ………… database provides a traditional database interface, but they store data across multiple machines, and they perform query processing in parallel across multiple machines.
   1) + Parallel
   2) - Distributed
   3) - Graph
   4) - Centralized

3) ………… database system is database is stored on nodes located at geographically separated sites, the nodes in a distributed system communicate with one another through various communication media, and do not share main memory or disks.
   1) - Parallel
   2) - Graph
   3) + Distributed
   4) - Centralized

4) Which type of database is best suited for handling graphs data?
   1) - Parallel database
   2) + Graph database
   3) - Distributed database
   4) - Centralized database

5) A data warehouse is a repository (or archive) of information gathered from multiple sources, stored under a unified schema, at a single site.
   1) - Data visualization
   2) - Data mining
   3) + Data warehouse

6) ………. database systems are those that run on a single computer system.
   1) - Parallel
   2) - Graph
   3) - Distributed
   4) + Centralized

7) …………is the process of semi-automatically analyzing large databases to find useful patterns, such as prediction of values based on past examples, finding of associations between purchases, and automatic clustering of people.
   1) - Data visualization
   2) + Data mining
   3) - Data warehouse
   4) - Data analytics

8) The term ………... refers broadly to the processing of data to infer patterns, correlations, or models for prediction.
   1) - Data visualization
   2) - Data mining
   3) + Data analytics
   4) - Big Data

9) ………… is a collection of data of sizes that exceed the ability of commonly used software to manage, capture, process, store, and analyze that data within an acceptable period of time.
- 1)   -   Data visualization
- 2)   -   Data mining
- 3)   -   Data analytics
- 4)   +   Big Data

10) The term ………. refers to data that arrive in a continuous mode, this data need to process in real time.
- 1)   +   Streaming data
- 2)   -   Data mining
- 3)   -   Data analytics
- 4)   -   Big Data

11) Relational schemas and other metadata about relations are stored in a structure called the ………… or system catalog.
- 1)   -   Data visualization
- 2)   -   Data mining
- 3)   -   Data analytics
- 4)   +   Data dictionary

12) What is the corerect query to retrieve the project number, the project name, and the number of employees who work on that project ?
- 1)   +   SELECT Pnumber, Pname, COUNT (*) FROM PROJECT, WORKS_ON WHERE Pnumber = Pno GROUP BY Pnumber, Pname;
- 2)   -   SELECT Pnumber, Pname, COUNT (*) FROM PROJECT, WORKS_ON WHERE Pnumber = Pno ;
- 3)   -   SELECT Pnumber, Pnam FROM PROJECT, WORKS_ON WHERE Pnumber = Pno GROUP BY Pnumber, Pname;
- 4)   -   SELECT Pnumber, Pname, COUNT (*) FROM PROJECT, WORKS_ON;

13) What is the appropriate expression in relational algebra to retrieve each employee's first and last name and salary?
- 1)   - $\sigma_{(Lname,Fname,Salary)}$ (EMPLOYEE)
- 2)   - $\rho_{(Lname,Fname,Salary)}$ (EMPLOYEE)
- 3)   - $\pi_{(Lname,Fname,Salary)}$ (DEPT)
- 4)   + $\pi_{(Lname,Fname,Salary)}$ (EMPLOYEE)

14) What is the appropriate expression in relational algebra to retrieve the tuples for all employees who either work in department 4 and make over $25,000 per year, or work in department 5 and make over $30,000?
- 1)   + $\sigma_{((Dno=4 \text{ AND } Salary>25000) \text{ OR } (Dno=5 \text{ AND } Salary>30000))}$ (EMPLOYEE)
- 2)   - $\sigma_{((Dno=4 \text{ AND } Salary>30000) \text{ OR } (Dno=5 \text{ AND } Salary>25000))}$ (EMPLOYEE)
- 3)   - $\sigma_{((Dno=5 \text{ AND } Salary>25000) \text{ OR } (Dno=4 \text{ AND } Salary>30000))}$ (EMPLOYEE)
- 4)   - $\sigma_{((Dno=4 \text{ AND } Salary>25000) \text{ and } (Dno=5 \text{ AND } Salary>30000))}$ (EMPLOYEE)

15) The ……… operation is used to choose a subset of the tuples from a relation that satisfies a selection condition.
- 1)   +   SELECT
- 2)   -   JOIN
- 3)   -   CARTESIAN PRODUCT
- 4)   -   PROJECT

16) The process of ………… involves systematically assigning similar objects/entities to object classes/entity types.
- 1)   +   Classification
- 2)   -   Clustering
- 3)   -   Association

4) - Analysis

17) The abstraction of ……….. is used to associate objects from several independent classes.
1) - Classification
2) - Clustering
3) + Association
4) - Analysis

18) What is the appropriate operation in relational algebra to retrieve the names of employees who work on all the projects that 'John Smith' works on?
1) - SELECT
2) - JOIN
3) + DIVISION
4) - PROJECT

19) This step is called ……….. or data model mapping; its result is a database schema in the implementation data model of the DBMS.
1) + Logical design
2) - Physical design
3) - Conceptual design
4) - Conceptual schema

20) The last phase is the ……….. phase, during which the internal storage structures, file organizations, indexes, access paths, and physical design parameters for the database files are specified.
1) - Logical design
2) + Physical design
3) - Conceptual design
4) - Conceptual schema

21) The ……….. for a binary relationship specifies the maximum number of relationship instances that an entity can participate in.
1) + Cardinality ratio
2) - Cardinality degree
3) - Relationship degree
4) - Relationship ratio

22) ……….. is the process of defining a set of subclasses of an entity type; this entity type is called the superclass of the specialization.
1) - Classification
2) - Generalization
3) - Association
4) + Specialization

23) We use the term ………. to refer to the process of defining a generalized entity type from the given entity types.
1) - Classification
2) + Generalization
3) - Association
4) - Specialization

24) The collection of all entities of a particular entity type in the database at any point in time is called an ……… or entity collection.
1) - Entity type
2) + Entity set
3) - Entity attributes
4) - Entity instance

25) The basic concept that the ER model represents is an ……., which is a thing or object in the real world with

an independent existence.
1)   -   Relations
2)   -   Table
3)   +   Entity
4)   -   View

26) An attribute is called a………., and its values can be used to identify each entity uniquely.
1)   -   Composite attributes
2)   +   Key attribute
3)   -   Simple attribute
4)   -   Derived attribute

27) We say that an entity that is a member of a subclass …….. all the attributes of the entity as a member of the superclass.
1)   +   Inherits
2)   -   Receives
3)   -   Takes
4)   -   Gets

28) Which type of attribute can be divided into smaller sub-parts, representing more basic attributes with independent meanings?
1)   +   Composite attributes
2)   -   Key attribute
3)   -   Simple attribute
4)   -   Derived attribute

29) What is the correct query for find the sum of the salaries of all employees, the maximum salary, the minimum salary, and the average salary?
1)   -   SELECT SUM (MAX (MIN (AVG (Salary))) FROM EMPLOYEE;
2)   -   SELECT Salary FROM EMPLOYEE WHERE (Salary), MAX (Salary), MIN (Salary), AVG (Salary) ;
3)   -   SELECT SUM (Salary), MAX (Salary), MIN (Salary), AVG (Salary;
4)   +   SELECT SUM (Salary), MAX (Salary), MIN (Salary), AVG (Salary) FROM EMPLOYEE;

30) Entity types that do not have key attributes of their own are called ……. types.
1)   -   Entity type
2)   -   Entity set
3)   +   Weak entity
4)   -   Entity instance