ACCESSIBLE characteristic of strategic information means:  
a.Every business factor must have one and only one value.  
b.Easily accessible with intuitive access paths, and responsive for analysis.  
c.Information must be accurate and must conform to business rules.  
d.Must have a single, enterprise-wide view.

b



DATA INTEGRITY characteristic of strategic information means:  
a.Every business factor must have one and only one value.  
b.Easily accessible with intuitive access paths, and responsive for analysis.  
c.Information must be accurate and must conform to business rules.  
d.Must have a single, enterprise-wide view.

c



Which statement is the most correct definition of data warehouse system?  
a. Data warehouse is Subject Oriented, Integrated, Time-Variant and Nonvolatile collection of data that support management's decision making process.  
b. Data warehouse is Subject Oriented, Integrated, Time-Variant and Nonvolatile collection of data that support daily management process.  
c. Data warehouse is Subject Oriented, Integrated, Time-Variant and Nonvolatile collection of data that support auditing process.  
d. None of the others.

a



What is Business intelligence?  
a. The systems and technologies for gathering, cleansing, consolidating, and storing corporate data. The tools, techniques, and applications for analyzing the stored data.  
b. The tools for decision makers to get the strategic information.  
c. The tools for data warehouse developer to manipulate and monitor the data warehouse database.  
d. The most common Operation System for a data warehouse.

a



Who needs strategic information in an enterprise? (choose the most correct)  
a. Staff  
b. Decision Markers  
c. Managers  
d. Accountants  
e. Directors

b



Which are NOT the desired characteristics of strategic information?  
a. INTEGRATED  
b. DATA INTEGRITY  
c. ACCESSIBLE  
e. CREDIBLE  
f. TIMELY  
g. None of the others

g



What exactly do we mean by strategic information?  
a. Strategic information is important for the continued health and survival of the corporation.  
b. Strategic information is for the day-to-day operations of the business.  
c. It is intended to produce an invoice, make a shipment, settle a claim, or post a withdrawal from a bank account.  
d. The types of information needed to make decisions in the formulation and execution of business strategies and objectives are broad based and encompass the entire organization.

d



Operational systems are online transaction processing (OLTP) systems.  
a. TRUE  
b. False

a



The data warehouse is an informational environment that:  
a. Makes the enterprise's current and historical information easily available for strategic decision making.  
b. Makes the enterprise's current information easily available for strategic decision making.  
c. Makes the enterprise's historical information easily available for strategic decision making.  
d. None of the others

a



........... acts as the glue that connects all parts of the data warehouse.  
a. Metadata  
b. ETL  
c. Operational Metadata  
d. Extraction and Transformation Metadata

a



CREDIBLE characteristic of strategic information means:  
a. Every business factor must have one and only one value.  
b. Easily accessible with intuitive access paths, and responsive for analysis.  
c. Information must be accurate and must conform to business rules.  
d. Must have a single, enterprise-wide view.

a



INTEGRATED characteristic of strategic information means:  
a. Every business factor must have one and only one value.  
b. Easily accessible with intuitive access paths, and responsive for analysis.  
c. Information must be accurate and must conform to business rules.  
d. Must have a single, enterprise-wide view.

d



Select the most correct definition of the data warehouse concept.  
a. Take all the data you already have in the organization, clean and transform it, and then provide useful strategic information.  
b. Take all the data you already have in the organization, store it, and then provide useful strategic information.  
c. Take all the data you already have in the organization and also in the related business domains, clean and transform it, and then provide useful strategic information.  
d. None of the others

a



The initial load (in Data Loading) moves large volumes of data using up substantial amounts of time.  
a. True  
b. False

a



The operational system is an information system that:  
a. Provides an integrated and total view of the enterprise.  
b. Makes the enterprise's current and historical information easily available for strategic decision making.  
c. Makes decision-support transactions possible without hindering operational systems.  
d. Renders the organization's information consistent.  
e. Presents a flexible and interactive source of strategic information.  
f. Support the basic business processes of the company.

f



Who are the users that need information from the data warehouse?  
a. Decision makers  
b. Customers  
e. Staff  
f. Database Administrators

a



In Bottom-Up Approach of designing a data warehouse, data marts are created first to provide analytical and reporting capabilities for specific business subjects based on the dimensional data model.  
a. True  
b. False

a



When a user queries the data warehouse for analysis, he or she usually starts by looking at very details of data.  
a. True  
b. False

a



The data warehouse is an informational environment that:  
a. Provides an integrated and total view of the enterprise.  
b. Store all the business data  
c. Data is often updated and inserted  
d. All company's staff access it everyday.

a



Operational systems are the systems that are used to run the day-to-day core business of the company.  
a. TRUE  
b. FALSE

In the data warehouse architecture, ................ sits on top of all the other components. It coordinates the services and activities within the data warehouse.  
a. Metadata Component  
b. Management and Control Component  
c. Data source Component  
d. Data Storage Component

b



Source data in data warehouse may come from:   
(choose one answer only)   
a. Production Data  
b. Internal Data  
c. Archived Data  
d. External Data  
e. All the others

e



..... table contains the values we want to analyze.  
a. Dimension  
b. Fact  
c. Aggregate  
d. Center

a



Dimension tables contain the ...... of analysis.  
a. criterions  
b. measurements  
c. facts  
d. values

a



What are the three major areas in the data warehouse?  
a. Data Acquisition, Data storage, Information delivery  
b. Data Collection, Data storage, Information delivery  
c. Data Acquisition, Database, Reporting System  
d. Data Acquisition, Data storage, Business Intelligence

a



Which dimension does a data warehouse usually have?  
a. Time  
b. Category  
c. User  
d. Invoice

a



Degenerated dimensions ............  
a. contain many attributes  
b. contain no attribute  
c. contain only one attribute  
d. contain a primary key and a fact value

a



Accurate requirements definition in a data warehouse project is many times more important than in other types of projects.  
a. True  
b. False

a



In the dimensional model, the attributes of the data warehouse are divided into ..........and dimension tables  
a. center  
b. fact  
c. summary  
d. aggregate

b



Which is (are) related to the time-variant nature of the data in a data warehouse? (choose one answer only)  
a. Allows for analysis of the past  
b. Relates information to the present  
c. Enables forecasts for the future  
d. All the others

d



Data warehouse architecture is just an overall guideline. It is not a blueprint for the data warehouse.  
a. True  
b. False

b



Let business requirements drive your data warehouse, not technology  
a. True  
b. False

a



In an operational system, data is usually kept at the lowest level of detail.  
a. True  
b. False

a



Building a data warehouse is very different from building an operational system.  
a. True  
b. False

a



............... signifies that the data warehouse stores the information around a particular subject such as product, customer, sales etc.  
a. Subject oriented  
b. Integrated  
c. Time-Variant  
d. Nonvolatile

a



Data granularity in a data warehouse refers to the level of detail.  
a. True  
b. False

a



Metadata in a data warehouse is similar to the .............or the data catalog in a database management system.  
a. data dictionary  
b. data structure  
c. data tables  
d. data constraints

a



Which is NOT a data warehouse building block?  
a. source data  
b. data staging  
c. data schema  
d. information delivery  
e. metadata  
f. management and control.

c



Which statement(s) is (are) correct?   
1) Maintaining metadata in a modern data warehouse is just for documentation.   
2) Metadata is needed by IT for data warehouse administration.   
a. Only statement 1  
b. Only statement 2  
c. Both statement 1 and 2  
d. None of the others

b



In a fact table, there are 3 kinds of attributes:   
(choose one answer only)   
a. Dimension foreign keys  
b. Degenerated dimensions  
c. Facts  
d. All the others

d



In designing a data warehouse, Top-Down Approach will create a data warehouse as a centralized repository for the entire enterprise.  
a. True  
b. False

a



Fact tables generally occupy the most of the storage capacity.  
a. True  
b. False

a



Which statement is correct regarding to dimensional model?  
a. A fact value CANNOT be calculated from other attributes.  
b. Usually, the primary key of the fact table is an auto generated key.  
c. Dimension tables occupy of the storage capacity.  
d. Every fact table has at least one Foreign Key.

d



Benefits from a data warehouse accrue only after the users put it to full use.  
a. True  
b. False

a



In data warehouse, Data Extraction function has to deal with numerous data sources. You have to employ the appropriate technique for each data source.  
a. True  
b. False

a



Which is NOT a characteristic of a data warehouse?  
a. Separate  
b. Integrated  
c. Time stamped  
d. Subject oriented  
e. Volatile

e



The online transaction processing applications support the day-to-day operations of an enterprise.  
a. True  
b. False

a



Which is NOT popular data warehouse architecture?  
a. Real  
b. Virtual  
c. Remote  
d. Distributed

d



The traditional methods of collecting requirements that work well for operational systems can be directly applied to data warehouses.  
a. True  
b. False

b



A fact is a measure taken at the .............of all the dimensions.  
a. union  
b. intersection  
c. combination  
d. cross

b

...........means applying ongoing changes as necessary in a periodic manner.  
a. Incremental load  
b. Updating load  
c. Full refresh  
d. Immediate load

a



Entity-Relationship Modeling is suitable for............  
a. OLTP systems  
b. Data warehouse systems  
c. OLTP and Data warehouse systems  
d. OLAP

a



...............represents the level of detail in the fact table.  
a. Aggregation  
b. Data granularity  
c. Data level  
d. Data size

b



Which is the challenge of ETL?  
a. Source systems are very diverse and disparate.  
b. Source systems are usually in one platform.  
c. Specify all the source systems.  
d. None of the others

a



................. means populating all the data warehouse tables for the very first time.  
a. Initial load  
b. Incremental load  
c. Load all  
d. Load

a



Which is the challenge of ETL?  
a. Source system structures keep changing over time because of new business conditions.  
b. Source system structures are very different.  
c. Source systems are hosted in very low performance systems.  
d. None of the others

a



The detailed plan results in the definition of the transformation/conversion rules.  
a. True  
b. False

a



......... reveals business trends.  
a. Data warehouse  
b. OLTP  
c. Business system  
d. OLAP

a



Which statement(s) is (are) related to Dimensional Modeling?  
a. Captures critical measures  
b. Views along dimensions  
c. Intuitive to business users  
d. All the others

d



............ systems capture details of events or transactions.  
a. OLTP  
b. Data warehouse  
c. OLAP  
d. Business Intelligence

a



Data on salary may be represented as monthly salary, weekly salary, and bimonthly salary in different source payroll systems.   
What do you call the above problem in ETL?   
a. Inconsistency  
b. Consistency  
c. Diverse  
d. Multiple-form

a



In ETL, .............tables are loaded first.  
a. Small  
b. Fact  
c. Dimension and Fact  
d. Dimension

d



........ focus is on how managers view the business.  
a. Data warehouse  
b. OLTP  
c. Business system  
d. OLAP

a



............ may answer questions on overall process.  
a. OLTP  
b. OLAP  
c. Business Intelligence  
d. Data warehouse

d



Dimensional Modeling is suitable for............  
a. OLTP systems  
b. Data warehouse systems  
c. OLTP and Data warehouse systems  
d. OLAP

b



OLTP is stand for Online Transaction Processing.  
a. True  
b. False

a



............systems focus on individual events.  
a. Data warehouse  
b. OLTP  
c. Business system  
d. OLAP

b



Regarding to Star schema, which statement is NOT true?  
a. In star schema some dimension tables are normalized.  
b. In star schema each dimension is represented with only one dimension table.  
c. There is a fact table at the centre. This fact table contains the keys to each of dimension.  
d. None of the others.

a



Which statement(s) is (are) related to Entity-Relationship Modeling?   
(choose one answer only)   
a. Removes data redundancy  
b. Ensures data consistency  
c. Expresses microscopic relationships  
d. All the others

d

Which operation involves summarizing the data along a dimension?  
a. Dice  
b. Slice  
c. Roll-up  
d. Drill Down

c



SSAS (SQL Server Analysis Services) is Microsoft BI Tool for creating Online Analytical Processing and data mining functionality.  
a. True  
b. False

a



OLAP systems provide ............. and roll-up capabilities.  
a. drill-down  
b. drop-down  
c. top-down  
d. up-down

a



Which statement is correct?  
a. With OLAP cube, we are able to create data mining structure on this data which can be helpful in forecasting, prediction.  
b. OLAP cube help us reduce the cost (time, CPU usage) of updating the data warehouse database.  
c. OLAP is an optimized way to design the data warehouse system.  
d. None of the others.

a



In any analytical system, time is a critical dimension.  
a. True  
b. False

a



Which operation allows an analyst to rotate the cube in space to see its various faces?  
a. Pivot  
b. Dice  
c. Roll-up  
d. Slice

a



Which is the act of picking a rectangular subset of a cube by choosing a single value for one of its dimensions, creating a new cube with one fewer dimension?  
a. Slice  
c. Dice  
b. Roll-up  
c. Drill Down/Up

a



Which operation allows the user to navigate among levels of data ranging from the most summarized to the most detailed?  
a. Drill Down  
b. Dice  
c. Roll-up  
d. Slice

a



BIDS (Business Intelligence Development Studio) provides environment for developing your OLAP Cube and Deploy on SQL Server.  
a. True  
b. False

a



Which operation produces a subcube by allowing the analyst to pick specific values of multiple dimensions?  
a. Slice  
b. Dice  
c. Roll-up  
d. Drill Down/Up

b



ROLAP refers to ............OLAP.  
a. Relational  
b. Rapid  
c. Running  
d. Roll

a



MOLAP refers to ............OLAP.  
a. Multidimensional  
b. Multiple  
c. Many-to-Many  
d. Mix

a



Regarding OLAP, which statement is true?  
a. An OLAP cube is a technology that stores data in an optimized way to provide a quick response to various types of complex queries by using dimensions and measures.  
b. Most cubes store dimensional values with its special storage structure to provide quick response to queries.  
c. An OLAP cube is a technology that stores data in data warehouse.  
d. None of the others

a



Which statement is correct?  
a. We have to choose OLAP Cube when performance is a key factor, the key decision makers of the company can ask for statistics from the data anytime from your huge database.  
b. We have to choose OLAP Cube when storage is a key factor, the key decision makers of the company can ask for statistics from the data anytime from your small database.  
c. We have to choose OLAP Cube when we do not want to implement ETL.  
d. None of the others.

a



Regarding to Online Analytical Processing (OLAP), which statement is INCORRECT?  
a. Designed to hold historical data for analyses and forecast business needs  
b. Data stored in denormalized format  
c. Used by users who are associated with the decision making process, e.g., Managers, CEO.  
d. Holds daily Latest Transactional Data related to your application

d

Select the correct comment on the two statements bellow.   
1) When you perform the logical design of the database, your goal is to produce a conceptual model that reflects the information content of the real-world situation.   
2) In physical design, you are getting closer to the operating systems, the database software, the hardware, and the computing platform.   
a. Only statement 1 is correct  
b. Only statement 2 is correct  
c. Both statements are correct  
d. Both statements are incorrect

c



............. indicator of high-quality data ensures the form and content of a data field is the same across multiple source systems.  
a. Accuracy  
b. Domain Integrity  
c. Data Type  
d. Consistency

d



In which case, indexes can improve the performance?  
a. Insert data  
b. Update data  
c. Read data  
d. None of the others

c



What is NOT a Beneﬁt of Improved Data Quality?  
a. Improved Productivity  
b. Reduced Costs and Risks  
c. Reliable Strategic Decision Making  
d. None of these.

d



One says that: ER modeling will have logical and physical model but Dimensional modeling will have only Physical model.   
ER Modeling is used for normalizing the OLTP database design whereas Dimensional Modeling is used for de-normalizing the ROLAP and MOLAP design.   
IS THIS TRUE?   
a. YES  
b. NO

a



Indexing in data warehouse database reduces performance of ........  
a. Information delivery  
b. ETL  
c. Loading data into data warehouse  
d. OLAP

c



............. indicator of high-quality data ensures the data value of an attribute falls in the range of allowable, defined values.  
a. Accuracy  
b. Domain Integrity  
c. Data Type  
d. Consistency

b



............. indicator of high-quality data ensures value for a data attribute is actually stored as the data type defined for that attribute.  
a. Accuracy  
b. Domain Integrity  
c. Data Type  
d. Consistency

c



Data Cleansing is  
a. Large collection of data mostly stored in a computer system  
b. The removal of noise errors and incorrect input from a database  
c. The systematic description of the syntactic structure of a specific database. It describes the structure of the attributes the tables and foreign key relationships.  
d. None of these.

b



What should we do before executing ETL?  
a. Remove indexes in data warehouse database  
b. Create some non-clustered indexes in data warehouse database  
c. Do nothing  
d. None of the others

a



In data quality, which is (are) the Sources of Data Pollution? (choose one answer only)  
a. System Conversions  
b. Poor Database Design  
c. Heterogeneous System Integration  
d. All the others

d



Fact tables are which of the following?  
a. Completely denoralized  
b. Partially denoralized  
c. Completely normalized  
d. Partially normalized

d



In data quality, which is (are) the Sources of Data Pollution? (choose one answer only)  
a. Input Errors  
b. Incomplete Information at Data Entry  
c. Internationalization/Localization  
d. All the others

d



A table may contain some ............. indexes. Select one answer only.  
a. bitmap  
b. clustered  
c. non-clustered, bitmap  
d. non-clustered

c



............................. are designed to overcome any limitations placed on the warehouse by the nature of the relational data model.  
a. Operational database  
b. Relational database  
c. Multidimensional database  
d. Data repository

d



............. indicator of high-quality data ensures the value stored in the system for a data element is the right value for that occurrence of the data element.  
a. Domain Integrity  
b. Accuracy  
c. Data Type  
d. Consistency

b



In SQL (Structured Query Language),   
Which statement(s) is (are) TRUE regarding to the term cardinality?   
1) Low-cardinality refers to columns with few unique values.   
2) The lower the cardinality, the less duplicated elements in a column.   
3) SQL databases use cardinality to help determine the optimal query plan for a given query.   
a. 1 and 2  
b. 1 and 3  
c. 2 and 3  
d. There isn't statement.

b



Which statement is TRUE?  
a. In SQL Server, primary key is clustered index as default. This makes it a very fast index when accessing data, though it may slow down writes if your primary key is not a sequential number.  
b. Clustered index uses a huge amount of storage to store indexing data.  
c. Clustered index can increase both read and write operations.  
d. None of the others.

a



Which value(s) is(are) typically Low-cardinality column values?(choose ONE answer only)  
a. status flags  
b. Boolean  
c. major classifications such as gender  
d. status flags, Boolean values, or major classifications such as gender

d



The biggest drawback of the level indicator in the classic star schema is that is limits ............  
a. ability  
b. quantify  
c. qualify  
d. flexibility

d

Benefits from a data warehouse accrue only after the users put it to full use.  
a.True  
b.False

a



In a table, there is only one ............. index.  
a. bitmap  
b. clustered  
c. non-clustered  
d. tree

b



A Web-enabled data warehouse adapts the Web for information delivery and collaboration among the users. Is this true?  
a. YES  
b. NO

a



A table may contain some ............. indexes. Select one answer only.  
a. bitmap  
b. clustered  
c. non-clustered, bitmap  
d. non-clustered

c



Bitmapped indexes are ideally suitable for .................data.  
a. low-cardinality  
b. high-cardinality  
c. numerical  
d. textual

a



Which is the traditional data warehouse project life cycle?  
a. 1)Project plan 2)Requirements definition 3)Design 4)Construction 5)Deployment 6)Growth and maintenance  
b. 1)Requirements definition 2)Project plan 3)Design 4)Construction 5)Deployment 6)Growth and maintenance  
c. 1)Project plan 2)Requirements definition 3)Design 4)Construction 5)Deployment  
d. None of the others

a



Regarding to data warehouse. Which statement is true?  
a. All indexes are always specified at the design time.  
b. All indexes are NOT always specified at the design time.  
c. All indexes are always specified at the maintenance time.  
d. Some indexes are specified at the design time, and some others are added at maintenance time.

d



Which value(s) is(are) typically Low-cardinality column values?(choose ONE answer only)  
a. status flags  
b. Boolean  
c. major classifications such as gender  
d. status flags, Boolean values, or major classifications such as gender

...



What are the benefits of partitioning?   
a. Easy management and Better performance  
b. Availability and Easier backup and recovery  
c. Both of A and B  
d. None of A and B

c



A goal of data mining includes which of the following?  
a. To explain some obsserved event or condition  
b. To confirm that data exists  
c. To analyze data for expected relationships  
d. To create a new data warehouse

c



What are some aspects of Data Mining?  
a. Association Rules  
b. Outlier Analysis  
c. Predictive Analytics  
d. All of them

d



Which is NOT a key issue while planning for your data warehouse?  
a. setting proper expectations  
b. assessing risks  
c. deciding between top-down or bottom-up approaches  
d. Choosing from vendor solutions.  
e. requirement changes

e



Which are the optimization strategies in data warehouse system? (choose ONE answer only)  
a. Use Index  
b. Aggregate Table  
c. Query Optimization  
d. All the other choices

d



In SQL (Structured Query Language),   
Which statement(s) is (are) TRUE regarding to the term cardinality?   
1) Low-cardinality refers to columns with few unique values.   
2) The lower the cardinality, the less duplicated elements in a column.   
3) SQL databases use cardinality to help determine the optimal query plan for a given query.   
a. 1 and 2  
b. 1 and 3  
c. 2 and 3  
d. There isn't statement.

b



Using parallel processing technologies (e.g. multithreading), the performance of ETL can be improved. Is it true?  
a. Yes  
b. No

a



What should we do before executing ETL?  
a. Remove indexes in data warehouse database  
b. Create some non-clustered indexes in data warehouse database  
c. Do nothing  
d. None of the others

a



In which case, indexes can improve the performance?  
a. Insert data  
b. Update data  
c. Read data  
d. None of the others

c



Select the correct comment on the two statements bellow.   
1) When you perform the logical design of the database, your goal is to produce a conceptual model that reflects the information content of the real-world situation.   
2) In physical design, you are getting closer to the operating systems, the database software, the hardware, and the computing platform.   
a. Only statement 1 is correct  
b. Only statement 2 is correct  
c. Both statements are correct  
d. Both statements are incorrect

c



What kind of datamining techniques help to find the natural group of objects?  
a. Classification  
b. Regression  
c. Association Rules  
d. Clustering

d



Data Mining means we want to mining the data?  
a. YES  
b. NO

b



Is that true, if one says that OLAP report on the past while Data Mining predicts the future?  
a. YES  
b. NO

a



Which is the question that may NOT answered by Data Mining?  
a. Who are our top 100 best customers for the last three years?  
b. Which 100 customers offer the best profit potential?  
c. For the next two years, which stores are likely to have best performance?  
d. What is the expected return for next year's promotions?

a



Justification the benefits of a data warehouse through stiff ROI (Return on investment) calculations is always easy.  
a. True  
b. False

b



Which statement is TRUE?  
a. In SQL Server, primary key is clustered index as default. This makes it a very fast index when accessing data, though it may slow down writes if your primary key is not a sequential number.  
b. Clustered index uses a huge amount of storage to store indexing data.  
c. Clustered index can increase both read and write operations.  
d. None of the others.

a

# \_\_\_\_\_\_\_\_\_ reveals business trends | data warehouse

# ACCESSIBLE characteristic of strategic information means | Easily accessible with intuitive access paths, and responsive for analysis

# In a fact table, there are 3 kinds of attributes | All the others

# \_\_\_\_\_\_\_\_ means populating all the data warehouse table for the very first time | initial load

# The data warehouse is an informational environment that | Provides an integrated and total view of the enterprise

# Which is the challenge of ETL | Source systems are very diverse and disparate

# What is Business intelligence | The systems and technologies for gathering, cleansing, consolidating, and storing corporate data. The tools, techniques, and applications for analyzing the stored data

# Which is NOT popular data warehouse architecture | Distributed

# Entity-Relationship modeling is suitable for | OLTP systems

# The operational system is an information system that | support the basic business process of the company

# In which case, indexes can improve the performance | C. Read data

# Which dimension does a data warehouse usually have | C. Time

# The diagram illustrates\_\_\_\_\_\_\_\_\_\_ model | D. MOLAP

# In an operational system, data is usually kept at the lowest level of detail | A. True

# Which statement(s) is(are) correct maintaining metadata in a modern data warehouse is just for documentation Metadata is needed by IT for data warehouse administration | B. Only statement 2

# Accurate requirments definition in a data warehouse project is many times more important than in other types of project | B. True

# Benefits from a data warehouse accrue only after the users put it to full use | A. True

# \_\_\_\_\_\_\_\_ indicator of high-quality data ensures the form and content of a data field is the same across multiple source systems | B. Consistency

# In data quality, which is (are) the sources of data pollution? | C. All the others

# MOLAP refers to \_\_\_\_\_\_\_\_ OLAP | A. Multidimensional

# Building a data warehouse is very different from building an operational system | A. True

# Which is NOT a key issue while planning for your data warehouse | D. Requirment changes

# In any analytical system, time is a critical dimension| A. TRue

# \_\_\_\_\_\_\_\_\_\_ acts as the glue that connects all parts of the data warehouse | C. metadata

# Data granularity in a data warehouse refers to the level of detail | B. True

# What are the three major areas in the data warehouse | B. Data acquisition, data storage, information delivery

# In data quality, which is (are) the Sources of Data pollution | C. all the others

# See picture | D. sales

# The online transaction processing applications support the day-to-day operations of an enterprise | A. False

# OLAP systems privide \_\_\_\_\_\_ and roll-up capabilities | B. drill-down

# Bitmapped indexes are ideally suitable for \_\_\_\_\_\_\_ data | B. low-cardinality

# In the data warehouse architecture, \_\_\_\_\_\_\_\_\_ sits on top of all the other components. It coordinates the services and activities | B. Management and control component

# Which statement(s) is (are) related to dimensional modeling? | D. All the others

# Fact tables generally occupy the most of the storage capacity | A. True

# The \_\_\_\_\_\_\_ diagrams crystallize the information requirements for the data warehouse | A. information package

# \_\_\_\_\_\_\_ indicator of high-quality data ensures the data value of an attribute falls in the range of allowable, defined values | B. Domain integrity

# OLTP is tand for Online Transaction Processing | A. True

# Which statement(s) is(are) related to Entity-Relationship Modeling | C. all the others

# In ETL, \_\_\_\_\_\_\_ tables are loaded first | d. dimention

# Data integrity characteristic of strategic information means | A. Information must be accurate and must conform to business rules

# The \_\_\_\_\_\_\_ model contains the structures and relationships represented in the data schema coded with data definition language (DDL) of the DBMS | B. Physical

# Which are Not the desired characteristics of strategic information | A. none of the others

# The diagram is \_\_\_\_\_\_\_\_ model | D.logical

# Which is(are) related to the time -variant nature of the data in a data warehouse | C. All the others

# Operational systems are online transaction processing (OLTP) systems | A. True

# Which is not a characteristic of a data warehouse | Quality training

# which statement is correct? | B. the primary key of the fact table consists of the primary keys of all the connected dimensions

# Which is(are) the common transformation type(s) | D. All the others

# \_\_\_\_\_\_\_\_ table contains the values we want to analyze | A. dimension

# ETL stands for \_\_\_\_\_\_\_\_\_ | C. data extraction, transformation, and loading

# Quality is: | The degree to which the project meets requirements

# All the following are examples of Perform Quality Control EXCEPT: | Cost of quality

# Pareto charts help the project manager: | Focus on the most critical issues to improve quality

# A control chart helps the project manager: | Determine if a process is functioning within set limits

# Testing the entire population would: | Take too long

# All of the following are examples of the cost of nonconformance EXCEPT: | Quality training

# Standard deviation is a measure of how: | Far the measurement is from the mean

# What percentage of the total distribution is 3 sigma from the mean equal to? | 99.73%

# All of the following result from quality audits EXCEPT | Creation of quality metrics

# A control chart shows seven data points in a row on one side of the mean. What should be done? | Find an assignable cause

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# Standard deviation is a measure of how: | Far the measurement is from the mean

# 2. \_\_\_\_focus is on how managers view the business | Data warehouse

# 4. Who need strategic information in enterprise | managers

# 5. In table, there is only one | - index clustered

# 7. The term metadata refers to | data about data

# 8. The presence of \_\_\_\_ diagram in the requirement….between operation and DW system | information package

# 9. \_\_ indicator of high-quality data ensures that there are no missing values for given attribute in the system | completeness

# \_\_ right value for that occurrence of the data element | accuracy

# 11. \_\_ represents the level of detail in the factable | data granularity

# 12. Button-approach, data mart are created first to provide analytical and reporting capabilities for specific business subject base on dimension | true

# 13. System focus on individual events | OLTP

# 14. System capture detail of events or transactions | OLTP

# 15. Source data in DW many come from | External data, production data, internal data, archived data

# 17. DW project life cycle | project plan, requirement definition ,.., ..,

# The term DSS refer to \_\_\_\_\_\_\_\_\_\_ | Decision Support System

# Partition elimination is used in \_\_\_\_\_\_\_\_\_\_\_. | Range Partitioning

# The term BPR expands to \_\_\_\_\_\_\_\_\_\_. | Business Process Re-engineering

# Back propagation neural network uses \_\_\_\_\_\_\_\_\_\_. | Feed-forward topology

# The decision node of a decision tree tests how many attribute values \_\_\_\_\_\_\_. | Single

# As opposed to the outcome of classification, estimation deal with \_\_\_\_\_\_\_\_\_\_ valued outcome. | Continuous

# Classification consists of examining the properties of a newly presented observation and assigning it to a predefined \_\_\_\_\_\_\_\_\_\_\_\_. | Class

# \_\_\_\_\_\_\_\_ is the technique in which existing heterogeneous segments are reshuffled, relocated into homogeneous segments | Clustering

# Data mining is a/an \_\_\_\_\_\_\_\_\_\_ approach, where browsing through data using data mining techniques may reveal something that might be of interest to the user as information that was unknown previously | Exploratory

# Data mining evolve as a mechanism to cater the limitations of \_\_\_\_\_\_\_\_ systems to deal massive data sets with high dimensionality, new data types, multiple heterogeneous data resources etc | OLTP

# Data mining uses \_\_\_\_\_\_\_\_\_ algorithms to discover patterns and regularities in data | Statistical

# There are many variants of the traditional nested-loop join. When the entire table is scanned it is called | Naive nested-loop join

# There are many variants of the traditional nested-loop join. If there is an index and that index is exploited, then it is called | Index nested-loop join

# There are many variants of the traditional nested-loop join. If the index is built as part of the query plan and subsequently dropped, it is called | Temporary index nested-loop join

# The goal of \_\_\_\_\_\_\_\_\_\_ is to look at as few blocks as possible to find the matching records(s). | Indexing

# \_\_\_\_\_\_\_\_\_, if too big and does not fit into memory, will be expensive when used to find a record by given key. | A Dense Index

# If every key in the data file is represented in the index file then index is | Dense Index

# A dense index, if fits into memory, costs only \_\_\_\_\_\_ disk I/O access to locate a record by given key | One

# \_\_\_\_\_\_\_\_\_, if fits into memory, costs only one disk I/O access to locate a record by given key. | A Dense Index

# The goal of ideal parallel execution is to completely parallelize those parts of a computation that are not constrained by data dependencies. The \_\_\_\_\_\_ the portion of the program that must be executed sequentially, the greater the scalability of the computation | Smaller

# The divide&conquer cube partitioning approach helps alleviate the \_\_\_\_\_\_\_\_\_\_ limitations of MOLAP implementation | Scalability

# Multi-dimensional databases (MDDs) typically use \_\_\_\_\_\_\_\_\_\_\_ formats to store pre-summarized cube structures | proprietary file

# Virtual cube is used to query two similar cubes by creating a third "virtual" cube by a join between two cubes | f

# The performance in a MOLAP cube comes from the O(1) look-up time for the array data structure | t

# DOLAP allows download of "cube" structures to a desktop platform with the need for shared relational or cube server. | f

# In a traditional MIS system, there is an almost linear sequence of queries. | t

# Data Warehouse provides the best support for analysis while OLAP carries out the \_\_\_\_\_\_\_\_\_ task | Analysis

# Analytical processing uses \_\_\_\_\_\_\_\_\_\_\_\_ , instead of record level access. | multi-level aggregates

# Data warehousing and on-line analytical processing (OLAP) are \_\_\_\_\_\_\_ elements of decision support system | Essential

# B-Tree is used as an index to provide access to records | Without scanning the entire table

# The users of data warehouse are knowledge workers in other words they are \_\_\_\_\_\_\_\_\_ in the organization | Decision maker

# Relational databases allow you to navigate the data in \_\_\_\_\_\_\_\_\_\_\_\_ that is appropriate using the primary, foreign key structure within the data model | Any Direction

# The input to the data warehouse can come from OLTP or transactional system but not from other third party database | f

# In \_\_\_\_\_\_\_\_\_ system, the contents change with time | OLTP

# Ad-hoc access means to run such queries which are known already. | f

# Suppose the amount of data recorded in an organization is doubled every year. This increase is \_\_\_\_\_\_\_\_\_\_. | Exponential

# The growth of master files and magnetic tapes exploded around the mid- \_\_\_\_\_\_\_. | 1960s

# Naturally Evolving architecture occurred when an organization had a \_\_\_\_\_\_\_ approach to handling the whole process of hardware and software architecture. | Relaxed

# \_\_\_\_\_\_\_ is an application of information and data | Knowledge

# Taken jointly, the extract programs or naturally evolving systems formed a spider web, also known as | Legacy Systems Architecture

# The need to synchronize data upon update is called | Data Coherency

# The STAR schema used for data design is a \_\_\_\_\_\_\_\_\_\_ consisting of fact and dimension tables. | Relational model

# \_\_\_\_\_\_\_ modeling technique is more appropriate for data warehouses. | physical

# If someone told you that he had a good model to predict customer usage, the first thing you might try would be to ask him to apply his model to your customer \_\_\_\_\_\_\_, where you already knew the answer | base

# Which does NOT describe a data warehouse | Updateable

# The primary reason data marts are created is that | it is easier to develop several small data marts than to get everyone to agree on the organizational view of one large data warehouse.

# An independent data mart | is filled with data from the operational environment, without a data warehouse

# Which is NOT a limitation of independent data marts | May not meet the needs of individual functional areas

# A centralized, integrated data warehouse that is the single source of all data available to end users | Enterprise data warehouse

# A subject-oriented, current-valued, detailed database. | Operational data store

# A logical data mart | is a relational view of the data warehouse

# Which is NOT a characteristic of a data warehouse? | Few internal and external sources

# Which is NOT an objective sought with derived data? | Scheduled operational reporting

# The star schema is most like a | relational database

# \_\_\_\_\_\_\_ is an application of information and data. | Knowledge

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# In \_\_\_\_\_\_\_\_\_ system, the contents change with time. | OLTP2.

# Ad-hoc access means to run such queries which are known already. | f

# Suppose the amount of data recorded in an organization is doubled every year. This increase is \_\_\_\_\_\_\_\_\_\_. | Exponential

# \_\_\_\_\_\_\_\_ gives total view of an organization. | Data Warehouse

# \_\_\_\_focus is on how managers view the business | Data warehouse

# OLAP | online analytical processing

# Who need strategic information in enterprise | managers

# In table, there is only one\_\_\_ | index clustered

# The term metadata refers to | data about data

# The presence of \_\_\_\_ diagram in the requirement….between operation and DW system | information package

# indicator of high-quality data ensures that there are no missing values for given attribute in the system | completeness

# right value for that occurrence of the data element | accuracy

# represents the level of detail in the factable | data granularity

# Button-approach, data mart are created first to provide analytical and reporting capabilities for specific business subject base on dimension | t

# System focus on individual events | OLTP

# System capture detail of events or transactions | OLTP

# Source data in DW many come from | External data, production data, internal data, archived data

# DW project life cycle | project plan, requirement definition ,.., ..,

# Which is the challenge ETL | source system structure keep changing over time because of business condition

# Metadata in DW is similar\_\_\_ to the | Data dictionary

# many answer question on overall process | Business intelligence

# on the system run day-to-day business of company | Operation system

# The data warehouse is on information environment that: | makes the enterprise’s current and historical information easily available for strategic decision making

# ROLAP refers to | Relation OLAP

# indicator of high-quality | characteristic

# Which not building block | data schema

# In the dimension model the attribute of DW are divided into | data warehousing, knowledge management

# means applying ongoing changes recession in a | incremental load

# OLAP systems provide \_\_\_\_ and roll-up capabilities | drill-down

# degenerated dimensions \_\_\_ | contain many attributes

# In SQL (Structured Query Language), which statement(s) is (are) TRUE regarding to the term cardinality? 1) Low-cardinality refers to columns with few unique values. 2) The lower the cardinality, the less duplicated elements in a column. 3) SQL databases use cardinality to help determine the optimal query plan for a given query | There isn't statement

# (2 hinh, Locations(countries) o giua) Which operation is illustrated in the figure? | Drill down/up

# (roll-up on location o giua) Which operation is illustrated in the figure? | roll-up

# (Slice for time o giua) Which operation is illustrated in the figure? | slice

# (Dice for time o giua) Which operation is illustrated in the figure? | dice

# (pivot for time o giua) Which operation is illustrated in the figure? | pivot

# In data quality, which is (are) the Sources of Data Pollution? | All the others

# Accurate requirements defination in a datawarehouse project is many times more important than in other types of projects | true

# which is the challenge of ETL? | none of the others

# Which is (are) related to the time-variant nature of the data in a data warehouse? | All the others

# What are the three major areas in the data warehouse | Data Acquisition, Data storage, Information delivery

# Which statement(s) is (are) correct? 1) Maintaining metadata in a mordern data warehouse is just for documentation 2) Metadata is needed by IT for data warehouse administration | only statement 2

# the term metadata refers to | "data about data"

# Select the correct comment on the two statement bellow 1) when you perform the logical design of the database, your goal is to produce a conceptual model that reflects the information content of the real-world situation 2) In physical design, you are getting closer to the operating systems, the database software, the hardware, and the computing platform. | both statement are correct

# Bitmapped indexes are ideally suitable for \_\_\_ data | textual

# Regarding to Online Analytical Processing (OLAP), which statement is INCORRECT? | Holds daily Latest Transactional Data related to your application

# Which metadata focuses on providing support for the end-user at the workstation | business metadata

# (1 hinh, 1 mat mau xanh) which operation is illustrated in the figure | Slice

# (2 hinh, 1 mat mau xanh) which operation is illustrated in the figure | Slice

# In data quality, which is (are) the Sources of Data Pollution | All the others

# Which is NOT a key issue while planning for your data warehouse | requirement changes

# \_\_ focus is on how managers view the business | data warehouse

# the detailed plan results in the defination of the transformation/conversion rules | true

# which statement(s) is (are) related to Dimensional Modeling | All the others

# Which metadata is used for the IT staff respondible for the development and administration of the data warehouse | Technical Metadata

# Indexing in the data warehouse database reduces performance of \_\_ | Loading data into data warehouse

# \_\_\_ means populating all the data warehouse tables for the very first time | initial load

# When your data warehouse has a large number of indexes, the loading of data into the warehouse sppeds up considerably | false

# Dimesional Modeling is suitable for \_\_\_ | Data warehouse systems

# In a fact table, there are 3 kinds of attributes: | All the others

# In ETL, \_\_\_ tables are loaded first | dimension

# who needs strategic information in an enterprise | managers

# benefits from a data warehouse accrue only after the users put it to full use | true

# In designing a data warehouse, Top-Down Approach will create a data warehouse as a centralized repository for the entire enterprise | true

# large tables with millions of rows should have many indexes | f

# in any analytical system, time is a critical dimension | t

# ROLAP refers to \_\_\_ OLAP | relational

# Source data in data warehouse may come from: | All the others

# An OLAP cube is an array of data understood in terms of \_\_ dimensions | Its 0 or more

# Which statement is correct | The primary key of the fact table consists of the primary keys of all the connected dimenstions

# Which statement is correct | With OLAP cube, we are able to create data mining structure on this data which can be helpful in forecasting, prediction

# \_\_ may answer questions on overall process | data warehouse

# Entity-Relationship Modeling is suitable for \_\_ | OLTP systems

# \_\_ signifies that the data warehouse stores the information around a particular subject such as product, customer, sales etc | Subject oriented

# Data granularity in a data warehouse refers to the level of detail | t

# \_\_ table contains the values we want to analyze | dimension

# Which statement(s) is (are) correct? 1) Metadata provides information on predefined queries 2) A metadata repository is like a general purpose directory tool | only statement 2

# Select the most correct defination of the data warehouse concept | Take all the data you already have in the organization, clean and transform it, and then provide useful strategic information

# Regarding to data warehouse. Which statement is true | Some indexes are specified all the design time, and some others are added at maintenance time

# Which statememt is correct regarding to dimensional model? | Every fact table has at least one Foreign Key

# What exactly do we mean by strategic information? | Strategic information is important for the continued health and survival of the corporation

# The data warehouse is an informational enviroment that | Makes the enterprise's current and historical information easily available for strategic decision making

# Operational systems are the systems that are used to run the day-to-day core business of the company | true

# \_\_\_ reveals business trends | data warehouse

# accessible characteristic of strategic information means | easily accessible with intuitive access paths, and responsive for analysis

# \_\_\_ means populating all the data warehouse tables for the very first time | initial load

# The data warehouse is an informational environment that | provides an integrated and total view of the enterprise

# Which is the challenge of ETL | Source systems are very diverse and disparate

# What is Business intelligence | The system and technologies for gathering, cleansing, consolidating, and storing corporate data. The tools, techniques, and applications for analyzing the stored data

# Which is not popular data warehouse architecture | distributed

# Entity-Relationship Modeling is suitable for\_\_ | OLTP systems

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# Large tables with millions of rows should have many indexes | False

# In any analytical system, time is a critical dimension. | True

# ROLAP refers to \_\_\_ OLAP | Relational

# Source data in data warehouse may come from: (choose one answer only) | All the others

# Which statement is correct? | The primary key of the fact table consists of the primary keys of all the connected dimensions.

# \_\_\_ may answer questions on overall process. | Data warehouse

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# Operational systems are the systems that are used to run the day-to-day core business of the company. | True

# In which case, indexes can improve the performance? | Read Data

# Which statement(s) is (are) correct? 1) Metadata provides information on predefined queries. 2) A metadata repository is like a general purpose directory tool. | Both

# \_\_\_ reveals business trends. | Data Warehouse

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# Which is NOT popular data warehouse architecture? | Distributed

# The operational system is an information system that: | Support the basic business processes of the company.

# Which dimension does a data warehouse usually have? | Time

# In an operational system, data is usually kept at the lowest level of detail. | True

# Which statement(s) is (are) correct? A 1) Maintaining metadata in a modern data warehouse is just for documentation. 2) Metadata is needed by IT for data warehouse administration. | Only statement 2

# Accurate requirements definition in a data warehouse project is many times more important than in other types of projects. | True

# Benefits from a data warehouse accrue only after the users put it to full use. | True

# \_\_\_ indicator of high-quality data ensures the form and content of a data field is the same across multiple source systems. | Consistency

# In data quality, which is (are) the Sources of Data Pollution? (choose one answer only) | All the others (2 cau)

# MOLAP refers to \_\_\_ OLAP | Multidimensional

# Building a data warehouse is very different from building an operational system. | True

# Which is NOT a key issue while planning for your data warehouse? | requirement changes

# \_\_\_ acts as the glue that connects all parts of the data warehouse. | Metadata

# What are the three major areas in the data warehouse? | Data Acquisition, Data storage, Information delivery

# The online transaction processing applications support the day-to-day operations of an enterprise. | True

# OLAP systems provide \_\_\_ and roll-up capabilities. | drill-down

# In the data warehouse architecture, \_\_\_ sits on top of all the other components. It coordinates the services and activities within the data warehouse | Management and Control Component

# Which statement(s) is (are) related to Dimensional Modeling? | All the others

# Fact tables generally occupy the most of the storage capacity. | True

# The \_\_\_ diagrams crystallize the information requirements for the data warehouse. | information package

# \_\_\_ indicator of high-quality data ensures The data value of an attribute falls in the range of allowable, defined values | Domain Integrity

# OLTP is stand for Online Transaction Processing. | True

# Answer Which statement(s) is (are) related to Entity-Relationship Modeling? | All the others

# In ETL, \_\_\_ tables are loaded first. | Dimension

# DATA INTEGRITY characteristic of strategic information means: | Information must be accurate and must conform to business rules.

# The \_\_\_ model contains the structures and relationships represented in the database schema coded with the data definition language (DDL) of the DBMS. | physical

# Which are NOT the desired characteristics of strategic information? | None of the others

# Which is (are) related to the time-variant nature of the data in a data warehouse? (choose one answer only) | All the others

# Operational systems are online transaction processing (OLTP) systems. | True

# Which is NOT a characteristic of a data warehouse? | Volatile

# Which is(are) the common transformation type(s)? (choose one answer only) | All the others

# ETL stands for \_\_\_ | data extraction, transformation, and loading

# Degenerated dimensions \_\_\_ | contain many attributes

# Which is the challenge of ETL? | Historical data on changes in values are not preserved in source operational systems

# The term metadata refers to \_\_\_ | "data about data"

# Select the correct comment on the two statements bellow. 1) When you perform the logical design of the database. your goal is to produce a conceptual model that reflects the information content of the real-world situation. 2) In physical design. you are getting closer to the operating systems. the database software. the hardware. and the computing platform. | Both statements are correct

# Which metadata focuses on providing support for the end-user at the workstation? | Business metadata

# \_\_\_ focus is on how managers view the business | Data Warehouse

# Which metadata is used for the IT staff responsible for the development and administration of the data warehouse? | Technical Metadata

# Indexing in data warehouse database reduces performance of \_\_\_ | Loading data into data warehouse

# When your data warehouse has a large number of indexes. the loading of data into the warehouse speeds up considerably. | False

# Dimensional Modeling is suitable for \_\_\_ | Data warehouse systems

# \_\_ indicator of high-quality data ensures that there are no missing values for given attribute in the system | completeness

# In table, there is only one\_\_\_ | index clustered

# The presence of \_\_\_\_ diagram in the requirement….between operation and DW system | information package

# \_\_ right value for that occurrence of the data element | accuracy

# \_\_ represents the level of detail in the fact table | data granularity

# Source data in DW may come from | External data, production data, internal data, archived data

# Systems focus on individual events | OLTP

# System capture details of events or transactions | OLTP

# DW project life cycle | project plan, requirement definition ,.., ..,

# The term DSS refer to \_\_\_\_\_\_\_\_\_\_ | Decision Support System

# Partition elimination is used in \_\_\_\_\_\_\_\_\_\_\_. | Range Partitioning

# The term BPR expands to \_\_\_\_\_\_\_\_\_\_. | Business Process Re-engineering

# Back propagation neural network uses \_\_\_\_\_\_\_\_\_\_. | Feed-forward topology

# The decision node of a decision tree tests how many attribute values \_\_\_\_\_\_\_. | Single

# As opposed to the outcome of classification, estimation deal with \_\_\_\_\_\_\_\_\_\_ valued outcome. | Continuous

# Classification consists of examining the properties of a newly presented observation and assigning it to a predefined \_\_\_\_\_\_\_\_\_\_\_\_. | Class

# Button-approach, data mart are created first to provide analytical and reporting capabilities for specific business subject base on dimension | true

## Who needs strategic information in an enterprise? (choose the most correct) | Decision Markers

## An OLAP cube is an array of data understood in terms of\_\_ dimensions | Its 0 or more

## Which statement is correct? | With OLAP cube, we are able to create data mining structure on this data which can be helpful in forecasting, prediction

## \_\_\_ signifies that the data warehouse stores the information around a particular subject such as product customer, sales etc. | Subject oriented

## Answer In SQL (Structured Query Language), Which statement(s) is (are) TRUE regarding to the term cardinality? 1) Low-cardinality refers to columns with few unique values 2) The lower the cardinality, the less duplicated elements in a column 3) SQL databases use cardinality to help determine the optimal query plan for a given query | 1 and 3

## The detailed plan results in the definition of the transformation/conversion rules. | True

## Regarding to Online Analytical Processing (OLAP). which statement is INCORRECT? | Holds daily Latest Transactional Data related to your application

## Bitmapped indexes are ideally suitable for \_\_\_ data | low-cardinality

# The online transaction processing applications support the day-to-day operations of an enterprise | A. False

# Which is not a characteristic of a data warehouse | Quality training

# \_\_\_\_\_\_\_\_ is the technique in which existing heterogeneous segments are reshuffled, relocated into homogeneous segments | Clustering

# Data mining is a/an \_\_\_\_\_\_\_\_\_\_ approach, where browsing through data using data mining techniques may reveal something that might be of interest to the user as information that was unknown previously | Exploratory

# Data mining evolve as a mechanism to cater the limitations of \_\_\_\_\_\_\_\_ systems to deal massive data sets with high dimensionality, new data types, multiple heterogeneous data resources etc | OLTP

# Data mining uses \_\_\_\_\_\_\_\_\_ algorithms to discover patterns and regularities in data | Statistical

# There are many variants of the traditional nested-loop join. When the entire table is scanned it is called | Naive nested-loop join

# There are many variants of the traditional nested-loop join. If there is an index and that index is exploited, then it is called | Index nested-loop join

# There are many variants of the traditional nested-loop join. If the index is built as part of the query plan and subsequently dropped, it is called | Temporary index nested-loop join

# The goal of \_\_\_\_\_\_\_\_\_\_ is to look at as few blocks as possible to find the matching records(s). | Indexing

# \_\_\_\_\_\_\_\_\_, if too big and does not fit into memory, will be expensive when used to find a record by given key. | A Dense Index

# If every key in the data file is represented in the index file then index is | Dense Index

# A dense index, if fits into memory, costs only \_\_\_\_\_\_ disk I/O access to locate a record by given key | One

# \_\_\_\_\_\_\_\_\_, if fits into memory, costs only one disk I/O access to locate a record by given key. | A Dense Index

# The goal of ideal parallel execution is to completely parallelize those parts of a computation that are not constrained by data dependencies. The \_\_\_\_\_\_ the portion of the program that must be executed sequentially, the greater the scalability of the computation | Smaller

# The divide&conquer cube partitioning approach helps alleviate the \_\_\_\_\_\_\_\_\_\_ limitations of MOLAP implementation | Scalability

# Multi-dimensional databases (MDDs) typically use \_\_\_\_\_\_\_\_\_\_\_ formats to store pre-summarized cube structures | proprietary file

# Virtual cube is used to query two similar cubes by creating a third "virtual" cube by a join between two cubes | f

# The performance in a MOLAP cube comes from the O(1) look-up time for the array data structure | t

# DOLAP allows download of "cube" structures to a desktop platform with the need for shared relational or cube server. | f

# In a traditional MIS system, there is an almost linear sequence of queries. | t

# Data Warehouse provides the best support for analysis while OLAP carries out the \_\_\_\_\_\_\_\_\_ task | Analysis

# Analytical processing uses \_\_\_\_\_\_\_\_\_\_\_\_ , instead of record level access. | multi-level aggregates

# Data warehousing and on-line analytical processing (OLAP) are \_\_\_\_\_\_\_ elements of decision support system | Essential

# B-Tree is used as an index to provide access to records | Without scanning the entire table

# The users of data warehouse are knowledge workers in other words they are \_\_\_\_\_\_\_\_\_ in the organization | Decision maker

# Relational databases allow you to navigate the data in \_\_\_\_\_\_\_\_\_\_\_\_ that is appropriate using the primary, foreign key structure within the data model | Any Direction

# The input to the data warehouse can come from OLTP or transactional system but not from other third party database | f

# In \_\_\_\_\_\_\_\_\_ system, the contents change with time | OLTP

# Ad-hoc access means to run such queries which are known already. | f

# Suppose the amount of data recorded in an organization is doubled every year. This increase is \_\_\_\_\_\_\_\_\_\_. | Exponential

# The growth of master files and magnetic tapes exploded around the mid- \_\_\_\_\_\_\_. | 1960s

# Naturally Evolving architecture occurred when an organization had a \_\_\_\_\_\_\_ approach to handling the whole process of hardware and software architecture. | Relaxed

# \_\_\_\_\_\_\_ is an application of information and data | Knowledge

# Taken jointly, the extract programs or naturally evolving systems formed a spider web, also known as | Legacy Systems Architecture

# The need to synchronize data upon update is called | Data Coherency

# The STAR schema used for data design is a \_\_\_\_\_\_\_\_\_\_ consisting of fact and dimension tables. | Relational model

# \_\_\_\_\_\_\_ modeling technique is more appropriate for data warehouses. | physical

# If someone told you that he had a good model to predict customer usage, the first thing you might try would be to ask him to apply his model to your customer \_\_\_\_\_\_\_, where you already knew the answer | base

# Which does NOT describe a data warehouse | Updateable

# The primary reason data marts are created is that | it is easier to develop several small data marts than to get everyone to agree on the organizational view of one large data warehouse.

# An independent data mart | is filled with data from the operational environment, without a data warehouse

# Which is NOT a limitation of independent data marts | May not meet the needs of individual functional areas

# A centralized, integrated data warehouse that is the single source of all data available to end users | Enterprise data warehouse

# A subject-oriented, current-valued, detailed database. | Operational data store

# A logical data mart | is a relational view of the data warehouse

# Which is NOT a characteristic of a data warehouse? | Few internal and external sources

# Which is NOT an objective sought with derived data? | Scheduled operational reporting

# The star schema is most like a | relational database

# \_\_\_\_\_\_\_ is an application of information and data. | Knowledge

# Naturally Evolving architecture occurred when an organization had a \_\_\_\_\_\_\_ approach to handling the whole process of hardware and software architecture. | Relaxed

# Taken jointly, the extract programs or naturally evolving systems formed a spider web, also known as | Legacy Systems Architecture

# The need to synchronize data upon update is called | Data Coherency

# The growth of master files and magnetic tapes exploded around the mid- \_\_\_\_\_\_\_. | 1960s

# The users of data warehouse are knowledge workers in other words they are \_\_\_\_\_\_\_\_\_ in the organization | Decision maker

# In \_\_\_\_\_\_\_\_\_ system, the contents change with time. | OLTP2.

# Ad-hoc access means to run such queries which are known already. | f

# Suppose the amount of data recorded in an organization is doubled every year. This increase is \_\_\_\_\_\_\_\_\_\_. | Exponential

# \_\_\_\_\_\_\_\_ gives total view of an organization. | Data Warehouse

# OLAP stands for | online analytical processing

# Button-approach, data mart are created first to provide analytical and reporting capabilities for specific business subject base on dimension | true

# Metadata in DW is similar\_\_\_ to the | Data dictionary

# many answer question on overall process | Business intelligence

# on the system run day-to-day business of company | Operation system

# The data warehouse is on information environment that: | makes the enterprise’s current and historical information easily available for strategic decision making

# ROLAP refers to | Relation OLAP

# indicator of high-quality | characteristic

# Which is not a data warehouse building block | data schema

# In the dimension model the attribute of DW are divided into | data warehousing, knowledge management

# Bottom-Up Approach data warehouse as a collection of conformed data marts | T

# OLAP | Online analytical processing

# HOLAP refers to \_\_\_\_\_ OLAP | Hybrid

# DOLAP refers to \_\_\_\_\_ OLAP | Desktop

# DW reveals business trends | T

# The importance of metadata is the same in a data warehouse as it is in an operational system | False

# Metadata is needed by IT for data warehouse administration. | True

# Technical metadata is usually less structured than business metadata. | False

# Maintaining metadata in a modern data warehouse is just for documentation. | False

# Metadata provides information on prede?ned queries. | True

# Business metadata comes from sources more varied than those for technical metadata| True

# Technical metadata is shared between business users and IT staff. | False

# A metadata repository is like a general purpose directory tool. | True

# Metadata standards facilitate metadata interchange among tools. | True

# Business metadata is only for business users; business metadata cannot be understood or used by IT staff. | False

# The data warehouse is an informational environment that | Makes decision-support transactions possible without hindering operational systems.

# The data warehouse is an informational environment that | Renders the organization’s information consistent.

# The data warehouse is an informational environment that | Presents a ?exible and interactive source of strategic information.

# INTEGRATED characteristic of strategic information means: | Must have a single, enterprise-wide view

# CREDIBLE characteristic of strategic information means: | Every business factor must have one and only one value.

# TIMELY characteristic of strategic information means: | Information must be available within the stipulated time frame.

# \_\_\_ means applying ongoing changes as necessary in a periodic manner. | Incremental load

# \_\_\_ means completely erasing the contents of one or more tables and reloading with fresh data (initial load is a refresh of all the tables). | Full refresh

# Which is the challenge of ETL? | There is usually a need to deal with source systems on multiple platforms and different operating systems

# Which is the challenge of ETL? | Many source systems are older legacy applications running on obsolete database technologies.

# Which is the challenge of ETL? | Generally, historical data on changes in values are not preserved in source operational systems. Historical information is critical in a data warehouse.

# Which is the challenge of ETL? | Quality of data is dubious in many old source systems that have evolved over time.

# Which is the challenge of ETL? | Source system structures keep changing over time because of new business conditions. ETL functions must also be modi?ed accordingly

# Which is the challenge of ETL? | Gross lack of consistency among source systems is prevalent. Same data is likely to be represented differently in the various source systems.

# Which is the challenge of ETL? | Even when inconsistent data is detected among disparate source systems, lack of a means for resolving mismatches escalates the problem of inconsistency

# Which is the challenge of ETL? | Most source systems do not represent data in types or formats that are meaningful to the users. Many representations are cryptic and ambiguous.

# business intelligence relates to the tools, techniques, and applications for analyzing the stored data | T

# a BI setting takes data as the raw material, collects it, re?nes it, and processes it into several information products | T

# Which is popular data warehouse architecture? | Real, Virtual, Remote

# In a data warehouse, therefore, you ?nd it ef?cient to keep data summarized at different levels | T

# Depending on the query, you can then go to the particular level of detail and satisfy the query | T

# if you want to keep data in the lowest level of detail, you have to store a lot of data in the data warehouse.|

# \_\_\_indicator of high-quality data ensures The value stored in the system for a data element is the right value for that occurrence of the data element | Accuracy

# \_\_\_indicator of high-quality data ensures Value for a data attribute is actually stored as the data type defined for that attribute | Data Type

# \_\_\_indicator of high-quality data ensures The same data must not be stored in more than one place in a system | Redundancy

# \_\_\_indicator of high-quality data ensures The values of each data item adhere to prescribed business rules | Conformance to Business Rules

# Wherever a data item can naturally be structured into individual components, the item must contain this well-de?ned structure | Structural De?niteness

# A ?eld must be used only for the purpose for which it is de?ned | Data Anomaly

# A data element may possess all the other characteristics of quality data but if the users do not understand its meaning clearly, then the data element is of no value to the users | Clarity.

# The users determine the timeliness of the data | Timely.

# Every data element in the data warehouse must satisfy some requirements of the collection of users | Usefulness

# The data stored in the relational databases of the source systems must adhere to entity integrity and referential integrity rules | Adherence to Data Integrity Rules

# provides information about the contents and structures to the developers. | Metadata

# opens the door to the end-users and makes the contents recognizable in their own terms | Metadata

# The data in the data warehouse is | Separate, Available, Integrated, Time stamped, Subject oriented, Nonvolatile, Accessible

# (1 hinh, 1 mat mau xanh) which operation is illustrated in the figure | Slice

# (2 hinh, 1 mat mau xanh) which operation is illustrated in the figure | Slice

# (2 hinh, Locations(countries) o giua) Which operation is illustrated in the figure? | Drill down/up

# (roll-up on location o giua) Which operation is illustrated in the figure? | roll-up

# (Slice for time o giua) Which operation is illustrated in the figure? | slice

# (Dice for time o giua) Which operation is illustrated in the figure? | dice

# (pivot for time o giua) Which operation is illustrated in the figure? | pivot

# which is/are the actions that should be done when developing a data warehouse? | All the others

# which statement is the most correct definition of data warehouse system? | (dai nhat)Data warehouse is Subject Oriented, Integrated, Time-Variant and Nonvolatile collection of data

# When a user queries the data warehouse for analysis, he or she usually starts by looking at very details of data | False

# Who are the users that need information from the data warehouse | Decision Marker

# In Bottom-up approach of designing a data warehouse, data marts are created first to provide analustical and reporting capabilities for specific | True

# Metadata in a data warehouse is similar to the \_\_\_or the data catalog in a database management system | data dictionary

# Data granularity in a data warehouse refers to the level of detail | True

# In data warehouse, Data Extraction function has to deal with numerous data sources. You have to employ the appropriate technique for each data source | True

# Justification the benefits of a data warehouse through stiff ROI (Return on Investment) calculations is always easy | False

# Let business requirements drive your data warehouse, not technology | True

# Which is the traditional data warehouse project life cycle? | Project plan, Requirements definition, Design, Contruction, Deployment, Growth and maintenance

# In the dimensional model, the attributes of the data warehouse are divided into ... and dimension tables | Fact

# Dimension tables contain the ...of analysis | criterions

# A fact is a measure taken at the ...of all the dimensions | intersection

# The presence of ...diagrams in the requirements definition document is the mjor and significant difference between operational systems and data warehouse system | information package

# The traditional methods of collecting requirements that work well for operational systems can be directly applied to data warehouses | False

# Data warehouse architecture is just an overall guideline. It is not a blueprint for the data warehouse | False

# In a data warehouse, the metadata component is unique, with no truly matching component in operational systems | True

# Which is NOT Business Metadata? | Data models of source systems

# Business metadata comes from sources more varied than those for technical metadata | True

# Which is NOT metadata | Rows in tables

# Which is NOT Technical Metadata | Data transformation business rules

# Regarding to Star schema, which statement is NOT true? | In star schema some dimension tables are normalized

# Data on salary may be represented as monthly salary, weekly salary, and bimonthly salary in different source payroll systems. What do you call the above problem in ETL? | Inconsistency

# Which statement is correct about global plan? | Very simple schema ( I page) identifying the sources and the targets

# Which operation produces a subcube by allowing the analyst to pick specific values of multiple dimensions? | Dice

# Which statement is correct? | (dai nhat) We have to choose OLAP Cube when performance is a key faactor, the key decision makers of the company can ask for....

# Which operation allows the user to navigate among levels of data ranging from the most summarized to the most detailed? | Drill Down

# Which operation involves summarizing the data along a dimension? | Roll-up

# Which is the act of picking a rectangular subset of a cube by choosing a single value for one of its dimentions, creating a new cube with one fewer dimension? | Slice

# BIDS (Business Intelligence Development Studio) provides environment for developing your OLAP Cube and Deploy on SQL Server | True

# Regarding OLAP, which statement is true? | An OLAP cube is a technology that stores data in an optimized way to provide a quick response to various types of complex queries by using dimentions and measures

# The diagram illustrates ... model (desktop, OLAP services, Database Server) | OLAP

# SSAS is Microsoft Bi Tool for createing Online Analytical Processing and data mining functionality | True

# The diagram illustrates ...model | MOLAP (co MDDB)

# Which opertaion allows an analyst to rotate the cube in space to see its various faces | Pivot

# What should we do before executing ETL? | Remove indexes in data warehouse database

# Which statement is TRUE? | A clustered index is a physical concept - it's an index that affects the order in which records are stored on disk

# A table may contain some, ...indexes. Select one answer only | non-clustered, bitmap

# Which are the optimization strategies in data warehouse system? | All

# In a table, there is only one ...index | Clustered

# The diagram is ...model (12431) | Physical

# Using parrallel processing technologies, the performance of ETL can be improved. Is it true? | Yes

# Which statement is TRUE? | In SQL Server, primary key is clustered index as default....

# Use bitmap indexes for attributes with low cardinality. Is it true? | Yes

# Data Mining means we want to mining the data? | No

# What kind of datamining techniques help to find the natural group of objects? | Clustering

# MOLAP increases performances for data analysis tasks | True

# Fact tables are the expression of multiple-to-multiple associations between dimensions. Is it true? | Yes

# When the ETL procedure finish, data will be stored in Data Staging Area? | No

# What are the data sources of the ETL procedure? | Both of A and B

# A data warehouse is which of the following? | Organized around important subject areas

# The load and index is which of the following? | A process to load the data in the data warehouse and to create the necessary indexes

# A star schema has what type of relationship between a dimension and fact table? | One-to-many

# In Families of Stars schema the fact tables are usually shared betwwen the groups? | No

# The extract process is which of the following? | Capturing a subset of the data contained in various operational system

# The data is stored, retrieved and updated in.... | OLTP

# Data Cleansing is | The removal of noise errors and incorrect input from a database

# What is NOT a Benefit of Improved Data Quality? | None of these

# Is that true, if one says that OLAP report on the past while Data Mining predicts the future? | Yes

# What are some aspects of Data Mining? | All of them

# Before the data from various disparate sources can be use fully stored in a data warehouse, you do not have to remove the inconsistencies. Is this true? | False

# In a data warehouse, there is no application flavor. The data in a data warehouse cuts across applications. Is this true? | True

# One says that: Data granularity refers to the level of detail. Depending on the requirements, multiple levels of detail may be present. .....| True

# What are the benefits of storing data in different data mart? | Both

# In all methods of gathering requirements we use questions to elicit information. What is NOT the type of used questions? | Open questions

# Which is NOT the reason to create a Data Mart? | Data can be inconsistence

# What are the benefits of partitioning? | Both

# Which one is NOT type of slowly changing dimensions? | Type 2 relates to measurement of interest

# Which one is NOT correct about slicing and dicing? | None of above

# A Web-enabled data warehouse adapts the Web for information delivery and collaboration among the users. Is this true? | Yes

# Which is the question that may NOT answered by Data Mining? | Who are our top 100 best customers for the last three years?

Question 1

Marks: 1

Consider the distributed query optimization, the result of ***Data Localization Layer* is \_\_\_\_\_\_\_**

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. none of the others. |  |
|  | b. reduced query on data fragments. |  |
|  | c. optimized relational algebra query. |  |
|  | d. optimized execution plan. |  |

Question 2

Marks: 1

Consider ER diagram containing superclass/subclass relationship with an optional participation constraint and a disjoint constraint. How to translate it to relational model?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. None of the others. |  |
|  | b. Create one relation represented for superclass and many relations, one represented for each subclass. |  |
|  | c. Create two relations, a relation represents for the superclass and another relation represents for all subclasses. |  |
|  | d. Create only one relation represented for all. |  |

Question 3

Marks: 1

Which of following statement is correct?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. The nondisjoint superclass/subclass relationship be represented by 'And' |  |
|  | b. The disjoint superclass/subclass relationship be represented by 'Or' |  |
|  | c. The disjoint constraint only applies when a superclass has only one subclass. |  |
|  | d. The disjoint constraint only applies when a superclass has more than one subclass. |  |

Question 4

Marks: 1

Which of concurrent control method can be used to avoid deadlock?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. 2-phase commit protocol |  |
|  | b. Timestamping |  |
|  | c. None of the others |  |
|  | d. 2-phase locking protocol |  |

Question 5

Marks: 1

Using Embedded SQL, a programmer is responsible for writing explicit code to fetch data into memory or store data back to the database. But when a \_\_\_\_\_\_\_\_\_\_ be used, a programmer can manipulate persistent data without having to write such code explicitly.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Object Query Language |  |
|  | b. Persistent Stored Module (SQL/PSM) |  |
|  | c. Persistent Programming Language |  |
|  | d. Functional Query Language |  |

Question 6

Marks: 1

Physical database design is concerned with actually defining the data model using the \_\_\_\_\_\_\_\_ of a particular DBMS

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. DML (data manipulation language) |  |
|  | b. DBDL (database design language) |  |
|  | c. None of the others |  |
|  | d. DDL (data definition language) |  |

Question 7

Marks: 1

To create a subtype, the user must have \_\_\_\_\_\_\_\_ privilege on any user-defined type that referenced within the new subtype.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. USAGE |  |
|  | b. UNDER |  |
|  | c. REFERENCE |  |
|  | d. All of the privileges |  |

Question 8

Marks: 1

Distribution transparency allows the user to perceive the database as a single logical database. Which of the following is lowest level of distribution transparency ?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Replication transparency |  |
|  | b. Location transparency |  |
|  | c. Fragmentation transparency |  |
|  | d. Local mapping transparency |  |

Question 9

Marks: 1

Select incorrect statement about derived horizontal fragmentation

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. A derived horizontal fragmentation can be defined using the semi-join operation of relational algebra. |  |
|  | b. A derived horizontal fragmentation is a horizontal fragmentation that is based on horizontal fragmentation of a parent relation. |  |
|  | c. The relation be fragmented that is a relation contain foreign key. |  |
|  | d. None of the others |  |

Question 10

Marks: 1

Suppose that we create a Staff table using the statement:  
CREATE TABLE Staff OF Staff Type UNDER Person;  
Which of the following statement is NOT correct

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. When we delete rows from the Staff table, the rows disappear from both the Staff and Person tables. |  |
|  | b. When we access all rows of Person, this will also include all Staff details. |  |
|  | c. The Staff table is supertable, and the Person table is subtable. |  |
|  | d. The Staff table is subtable, and the Person table is supertable. |  |

Question 11

Marks: 1

When the ordering attribute (index field) chosen is the key attributes of the relation, the index will be a \_\_\_\_\_\_\_; when the ordering attribute (index field) is the non-key attributes, the index will be a \_\_\_\_\_\_\_. Each relation can only have either a primary index or a clustering index and several secondary indexes.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. clustering index ... primary index |  |
|  | b. primary index ... clustering index |  |
|  | c. clustering index ... secondary index |  |
|  | d. primary index ... secondary index |  |

Question 12

Marks: 1

Select INCORRECT statement about CORBA (The Common Object Request Broker Architecture)

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. The CORBA is a standard defined by the Object Management Group (OMG) that enables software components written in multiple computer languages and running on multiple computers to work together. |  |
|  | b. The COBRA is first Object-Oriented Programming Language |  |
|  | c. The CORBA uses an interface definition language (IDL) to specify the interfaces which objects present to the outer world. |  |
|  | d. The CORBA enables separate pieces of software written in different languages and running on different computers to work with each other like a single application or set of services. |  |

Question 13

Marks: 1

Consider a replication environment, select a correct statement

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. update-conflict may only occur in workflow ownership model. |  |
|  | b. update-conflict may only occur in master-slave ownership model. |  |
|  | c. update-conflict never occurs in replication environment. |  |
|  | d. update-conflict may occur when multiple sites are allowed to update replicated data. |  |

Question 14

Marks: 1

Select INCORRECT about Object Query Language (OQL)

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. OQL aggregate functions can be applied within SELECT clause or to result of SELECT operation. |  |
|  | b. None of the others. |  |
|  | c. OQL does not provide explicit update operators, but leaves this to operations defined on object types. |  |
|  | d. OQL provides declarative access to the object database using SQL-like syntax. |  |

Question 15

Marks: 1

Which of following statement is not correct ?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. None of the others |  |
|  | b. Insert, update and delete operations on database in high normal-form is easy. But to get a sufficient information, a join operation must be taken on many relations. |  |
|  | c. The process of normalization generally produces a database schema with small relations (each realtion has a few attributes). |  |
|  | d. Each relation in high normal-form is poorly representation of 'real world' entity |  |

Question 16

Marks: 1

Consider the distributed query optimization, which of following statement is NOT correct ?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. ***Global optimization layer*** takes account of statistical information to find a near-optimal execution plan. |  |
|  | b. ***Query decomposition layer*** takes a query expressed on the global relations and performs a partial optimization. |  |
|  | c. None of the others. |  |
|  | d. ***Local optimization layer*** is run at each of the local sites involved in the query. Each local DBMS will perform its own local optimization. |  |

Question 17

Marks: 1

The result of \_\_\_\_\_\_\_\_ is a logical database design that is structurally consistent and has minimal redundancy. There may be circumstances for improving performance, we must be refine a relation become \_\_\_\_\_\_\_

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. normalization ... higher normalization |  |
|  | b. denormalization ... lower normalization |  |
|  | c. normalization ... denormalization |  |
|  | d. denormalization ... normalization |  |

Question 18

Marks: 1

Which of the following statements is NOT correct about 2-PL protocol?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. In growing-phase, a transaction acquires all the locks needed but cannot release any locks. |  |
|  | b. A transaction follows the two-phase locking protocol if all locking operations precede the first unlock operation in the transaction. |  |
|  | c. In shrinking-phase, a transaction releases its locks but cannot acquire any new locks |  |
|  | d. Shrinking and growing are phases in 2-PL protocol. Shrinking is the first phase, and growing is the second phase. |  |

Question 19

Marks: 1

There are two mechanisms to propagate updates in replication environment. With \_\_\_\_\_ replication, the replicated data is updated immediately when the source data is updated. An alternative mechanism is called \_\_\_\_\_ replication.With this mechanism, the replicated data is updated after the source database has been modified.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. master ... slave |  |
|  | b. publisher ... subscribers |  |
|  | c. update-anywhere ... read-only |  |
|  | d. synchronous ... asynchronous |  |

Question 20

Marks: 1

A many-to-many relationship can be decomposed by three relations that have two one-to-many relationships from two relations to a intermediate relation. For improving performance based on denormalization, we can duplicate some attributes that frequently be used from \_\_\_\_\_\_\_ relation into \_\_\_\_\_\_ relation to reduce \_\_\_\_\_\_ operation.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. the intermediate ... a one-side ... projection |  |
|  | b. a one-side ... the intermediate ... projection |  |
|  | c. the intermediate ... a one-side ... join |  |
|  | d. a one-side ... the intermediate ... join |  |

Question 21

Marks: 1

\_\_\_\_\_\_\_\_\_ is a schedule, that in which for each pair of transactions Ti and Tj, if Tj reads a data item previously written by Ti, then the commit operation of Ti precedes the commit operation of Tj.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Recoverable schedule |  |
|  | b. Conflict serializability schedule |  |
|  | c. View serializability schedule |  |
|  | d. Serial schedule |  |

Question 22

Marks: 1

After translating ER data model into relational data model, we should validate the groupings of attributes in each relation by using the rules of \_\_\_\_\_\_. The purpose of \_\_\_\_\_\_ is to ensure that the set of relations has a minimal and yet sufficient number of attributes necessary to support the data requirements of the enterprise.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. integrity constraint ... business logic |  |
|  | b. business logic ... normalization |  |
|  | c. business logic ... integrity constraint |  |
|  | d. normalization ... normalization |  |

Question 23

Marks: 1

In centralized deadlock detection, the Deadlock Detection Coordinator is responsible for constructing and maintaining a global wait-for-graph. \_\_\_\_\_\_\_

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. To reduce communication cost, there are some sites be appointed as the Deadlock Detection Coordinators. |  |
|  | b. Each sites has a own Deadlock Detection Coordinator. |  |
|  | c. Only one site be appointed as the Deadlock Detection Coordinator. |  |
|  | d. None of the others. |  |

Question 24

Marks: 1

Which of following statement is not correct?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. The aims of query processing are to transform a query into a correct and efficient execution strategy, and to execute the strategy to retrieve the required data. |  |
|  | b. The best optimized query is a query that returns the smallest number of tuples. |  |
|  | c. None of the others. |  |
|  | d. Query processing is the activities involved in parsing, validating, optimizing, and executing a query. |  |

Question 25

Marks: 1

Select correct statement about the ***set*** built-in collection type

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. a set is an unordered collections that do allow duplicates |  |
|  | b. a set is an unordered collections that do not allow duplicates |  |
|  | c. a set is an ordered collections that do not allow duplicates |  |
|  | d. a set is an ordered collections that do allow duplicates |  |

Question 26

Marks: 1

Which of the following statement is not correct to avoid of creating index ?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Avoid indexing an attribute or relation that is frequently updated. |  |
|  | b. Avoid indexing on small relation. |  |
|  | c. Avoid indexing attributes that consist of long character strings. |  |
|  | d. Avoid indexing an attribute if the query will retrieve a significant proportion (for example 25%) of the tuples in the relation. |  |

Question 27

Marks: 1

To carry out physical database design effectively, it is necessary to have knowledge of the transactions that will run on the database. So, we have to analyse the transactions. Which of the following characteristic should not be included in analyzing the transactions process ?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. time which transaction be executed |  |
|  | b. transaction frequence |  |
|  | c. all of the others |  |
|  | d. criticality of transaction |  |

Question 28

Marks: 1

With a large database system, we should distribute data across disks to decrease disk I/O time. Which of the following is not a the basic principle of distributing the data across disks ?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. None of the others |  |
|  | b. The recovery log file should be separated from the rest of the database |  |
|  | c. The main database files should be separated from the index files |  |
|  | d. The operating system files should be separated from the database files |  |

Question 29

Marks: 1

In the IBM's Distributed Relational Database Architecture, there are four types of transaction. Those are: ***remote request***, ***remote unit of work***, ***distributed unit of work*** and \_\_\_\_\_\_\_

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. local transaction |  |
|  | b. distributed transaction |  |
|  | c. local request |  |
|  | d. distributed request |  |

Question 30

Marks: 1

Which of the following statements is incorrect ?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. The design methodology helps the designer to plan, manage, control and evaluate database development projects. |  |
|  | b. The design methodology consists of phases each containing a number of steps that guide the designer in the choice of techniques that are appropriate at each stage of the project. |  |
|  | c. The design methodology also helps the designer to capture the user requirements more easier. |  |
|  | d. The design methodology is a structured approach that uses procedures, techniques, tools, and documentation aids, to support and facilitate the process of design. |  |

Question 31

Marks: 1

The query processing can be divided into four main phases: query decomposition, query \_\_\_\_\_\_\_\_\_\_, code generation, and query execution.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. optimization |  |
|  | b. analyzation |  |
|  | c. normalization |  |
|  | d. all of the others |  |

Question 32

Marks: 1

An user must have the \_\_\_\_\_\_\_ privilege on the user-defined type specified as a supertype in the subtype definition.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. EXECUTE |  |
|  | b. REFERENCE |  |
|  | c. USAGE |  |
|  | d. UNDER |  |

Question 33

Marks: 1

To present data structure in memory and in a database stored on disk, the conventional DBMSs use ***two-level storage model***, In contrast, Object-Oriented DBMSs use ***\_\_\_\_\_\_\_\_\_***.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. single-level storage model |  |
|  | b. double-level storage model |  |
|  | c. three-level storage model |  |
|  | d. object-relational storage model |  |

Question 34

Marks: 1

Select incorrect statement

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Static query optimization method does not need the database statistics. |  |
|  | b. The dynamic query optimization method is better than the static query optimization method. |  |
|  | c. The static query optimization method is better than the dynamic query optimization method. |  |
|  | d. Two methods for executing the query optimization are dynamic query optimization and static query optimization. |  |

Question 35

Marks: 1

To identify entities in an is-a relationship, the \_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_ can be used. The process of maximizing the differences between members of an entity by identifying their distinguishing characteristics is called \_\_\_\_\_\_\_\_. The process of minimizing the differences between entities by identifying their common characteristics is called \_\_\_\_\_\_\_\_

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. specialization ... supertype |  |
|  | b. subclass ... superclass |  |
|  | c. generalization ... subclass |  |
|  | d. specialization ... generalization |  |

Question 36

Marks: 1

Which one is not a reason for needing to design database at conceptual level ?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. None of the others |  |
|  | b. Allows for easy converting from high-level model to relational model |  |
|  | c. Allows for easy communication between end-users and developers |  |
|  | d. Independent of DBMS |  |

Question 37

Marks: 1

The Common Object Request Broker Architecture (CORBA) defines architecture of \_\_\_\_\_\_\_ environment, in which a CORBA-based program can interoperate with another CORBA-based program across a variety of vendors

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Web service |  |
|  | b. ORB (Object Request Broker) - based |  |
|  | c. Database service |  |
|  | d. Internet |  |

Question 38

Marks: 1

Object-Relational DBMS, by using ***row type***, we can represent for a \_\_\_\_\_\_\_\_ attribute directly

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. simple |  |
|  | b. derived |  |
|  | c. all of the others |  |
|  | d. composite |  |

Question 39

Marks: 1

Select a correct statement

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. When two transactions either read or write completely separate data items, conflict may be occur |  |
|  | b. When two transactions only read a data item, conflict may be occur |  |
|  | c. When one transaction writes a data item and another either reads or writes the same data item, conflict may be occur |  |
|  | d. All of the others |  |

Question 40

Marks: 1

When two transactions either methods for replication ensures atomicity feature of an transaction ?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Transactional update |  |
|  | b. Database trigger |  |
|  | c. All of the others |  |
|  | d. Snapshot update |  |

Question 41

Marks: 1

Select the incorrect statement about database statistics.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Both heuristic and cost-based method of query optimization depend on database statistics. |  |
|  | b. The database statistics typically cover information about relations, attribute, and indexes. |  |
|  | c. The DBMS should update the statistics every time a tuple is inserted, updated, or deleted. |  |
|  | d. Database statistics should be only updated on a periodic basis. |  |

Question 42

Marks: 1

What is the process of generating and reproducing multiple copies of data at one or more sites called ?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Data asynchronization |  |
|  | b. Data backup and recovery |  |
|  | c. Data synchronization |  |
|  | d. Data replication |  |

Question 43

Marks: 1

For improving performance, instead of combining the relations into a single relation, a otherwise approach decomposes a large relation into a number of smaller and more manageable pieces called \_\_\_\_\_\_\_\_.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. lower normalization form relations |  |
|  | b. partitions |  |
|  | c. portions |  |
|  | d. higher normalization form relations |  |

Question 44

Marks: 1

Select INCORRECT meaning about the objective of ***local-autonomy feature* in the Date's twelve rules for a distributed DBMS**

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. none of the others. |  |
|  | b. local operations remain purely local |  |
|  | c. all operations at a given site are controlled by the centralized site |  |
|  | d. local data is locally owned and managed |  |

Question 45

Marks: 1

The relational model has only one type of structure is the relation and it only uses this structure for representing for both data and relationships between data. So, It is said that the relational model is \_\_\_\_\_\_\_. This is a weakness of relational model.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. semantically overloaded |  |
|  | b. rich semantic |  |
|  | c. poor semantic |  |
|  | d. Impedance mismatch |  |

Question 46

Marks: 1

In distributed query optimization, the ***Data Localization Layer*** gets information about distribution of data. By using its reconstruction algorithms, it replaces the global relations at the leaves of the relational algebra tree with \_\_\_\_\_\_\_\_\_\_\_

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. suitable relational algebra operations. |  |
|  | b. other global relations. |  |
|  | c. other optimized global relations |  |
|  | d. suitable data fragments |  |

Question 47

Marks: 1

Which one is not a task in conceptual database design phase?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. identify attributes and attribute domains |  |
|  | b. identify integrity constraints |  |
|  | c. identify entity types |  |
|  | d. identify relations |  |

Question 48

Marks: 1

In an entity-relationship model, all Library Item is separated into one of Book, Journal and Digital-Video entity types. What are participation and disjoint constraints between Library Item generalization entity and its specialization entities (i.e Book, Journal, Digital-Video) ?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. optional (partial participation) and disjoint |  |
|  | b. optional (partial participation) and nodisjoint (overlapping) |  |
|  | c. mandatory (total participation) and nondisjoint (overlapping) |  |
|  | d. mandatory (total participation) and disjoint |  |

Question 49

Marks: 1

Given a relation Staff(staffNo, fName, lname, ..., managerNo). The managerNo attribute references to the primary key staffNo. Which of following operation can not affect to the referential integrity.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Update an exists tuple on managerNo of the Staff relation |  |
|  | b. Delete an exists tuple from the Staff relation |  |
|  | c. Insert a new tuple into the Staff relation. |  |
|  | d. None of the others. |  |

Question 50

Marks: 1

To convert ER data model to relational data model. For each many-to-many (\*:\*) binary relationship, we create a relation to represent the relationship and post a copy of the \_\_\_\_\_\_\_\_ attribute(s) of the entities that participate in the relationship into this relation, to act as \_\_\_\_\_\_\_\_.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. foreign keys ... primary key |  |
|  | b. primary key ... alternate key |  |
|  | c. primary key ... unique key |  |
|  | d. primary key ... foreign keys |  |

## Question 1



Consider the distributed query optimization, which of following statement is NOT correct ?

Select one:

a. ***Query decomposition layer*** takes a query expressed on the global relations and performs a partial optimization.

b. None of the others.

c. ***Global optimization layer*** takes account of statistical information to find a near-optimal execution plan.

d. ***Local optimization layer*** is run at each of the local sites involved in the query. Each local DBMS will perform its own local optimization.

## Question 2



Four layers of a distributed query optimization are: ***query decomposition***, ***data localization***, ***global optimization*** and ***\_\_\_\_\_\_\_\_\_***

Select one:

a. After a participant has voted to commit a transaction, the participant may be blocked if it does not receive the global decision

b. All of the others.

c. After a participant has voted to commit a transaction, it can cannot go ahead and commit the transaction.

d. local optimization

## Question 3



In 2-phase commit protocol, which of the following is NOT a state of a particippant ?

Select one:

a. INITIAL

b. ABORTED

c. COMMITED

d. COMPLETED

## Question 4



Which one is not a disadvantage of data replication environment ?

Select one:

a. node decoupling

b. cost of updating

c. storage requirements

d. complexity

## Question 5



Which statement is not correct about type of Master/Slave ownership in replication environment ?

Select one:

a. The slave sites subscribe to read-only copies of that relation.

b. A master site may own the data in an entire relation.

c. None of the others.

d. This type of replication is also known as symmetric replication.

## Question 6



In a distributed environment, the algorithms based on 2-phase locking can be classified as \_\_\_\_\_\_\_\_, primary copy, or distributed.

Select one:

a. None of the others.

b. centralized

c. secondary copy

d. fragmentized

## Question 7



When a distributed relational database is designed. The fragmentation, allocation and \_\_\_\_\_\_\_\_ are the factors that have to be considered.

Select one:

a. all of the others.

b. partition

c. replication

d. distribution

## Question 8



Select incorrect statement

Select one:

a. Designing and managing heterogeneous distributed database is easier than homogeneous distributed database.

b. In heterogeneous distributed DBMS, sites may run different DBMS products.

c. A distributed DBMS may be classified as homogeneous or heterogeneous.

d. None of the others.

## Question 9



Select INCORRECT meaning about the objective of ***local-autonomy feature* in the Date's twelve rules for a distributed DBMS**

Select one:

a. none of the others.

b. all operations at a given site are controlled by the centralized site

c. local operations remain purely local

d. local data is locally owned and managed

## Question 10



Which of the followings is **not** a benefit of database replication in a distributed system ?

Select one:

a. support a disconnected computing model

b. increase availability

c. None of the others.

d. increase performance of the system

## Question 1



In a distributed environment, the algorithms based on 2-phase locking can be classified as \_\_\_\_\_\_\_\_, primary copy, or distributed.

Select one:

a. centralized

b. secondary copy

c. fragmentized

d. None of the others.

## Question 2



Which of the implementation methods for replication ensures atomicity feature of an transaction ?

Select one:

a. Snapshot update

b. All of the others

c. Transactional update

d. Database trigger

## Question 3



Distribution transparency allows the user to perceive the database as a single logical database. Which of the following is lowest level of distribution transparency ?

Select one:

a. Location transparency

b. Replication transparency

c. Fragmentation transparency

d. Local mapping transparency

## Question 4



There are three common methods for handling deadlock detection in distributed DBMS. Those are: ***centralized***, ***hierarchical***, and ***\_\_\_\_\_\_\_\_\_*** deadlock detection

Select one:

a. majority

b. primary

c. distributed

d. decentralized

## Question 5



Select INCORRECT meaning about the objective of ***local-autonomy feature* in the Date's twelve rules for a distributed DBMS**

Select one:

a. none of the others.

b. local data is locally owned and managed

c. all operations at a given site are controlled by the centralized site

d. local operations remain purely local

## Question 6



Which one is not a disadvantage of data replication environment ?

Select one:

a. storage requirements

b. complexity

c. node decoupling

d. cost of updating

## Question 7



When a distributed relational database is designed. The fragmentation, allocation and \_\_\_\_\_\_\_\_ are the factors that have to be considered.

Select one:

a. all of the others.

b. replication

c. distribution

d. partition

## Question 8



Which statement is not correct about type of Master/Slave ownership in replication environment ?

Select one:

a. The slave sites subscribe to read-only copies of that relation.

b. A master site may own the data in an entire relation.

c. This type of replication is also known as symmetric replication.

d. None of the others.

## Question 9



Select incorrect statement about asynchronous replication

Select one:

a. The consistency of replicated data can be violated temporarily.

b. When the source data is updated, the other replica must be updated immediately.

c. When the source data is updated, the other replica can be updated later periodically.

d. Even if one or more sites that hold replicas are unavailable, the update transaction may complete successfully.

## Question 10



Which of the followings is **not** a benefit of database replication in a distributed system ?

Select one:

a. None of the others.

b. support a disconnected computing model

c. increase availability

d. increase performance of the system

ADB:

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Question 1

Marks: 1

Consider the distributed query optimization, the result of ***Data Localization Layer* is \_\_\_\_\_\_\_**

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. none of the others. |  |
|  | b. reduced query on data fragments. |  |
|  | c. optimized relational algebra query. |  |
|  | d. optimized execution plan. |  |

Question 2

Marks: 1

Consider ER diagram containing superclass/subclass relationship with an optional participation constraint and a disjoint constraint. How to translate it to relational model?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. None of the others. |  |
|  | b. Create one relation represented for superclass and many relations, one represented for each subclass. |  |
|  | c. Create two relations, a relation represents for the superclass and another relation represents for all subclasses. |  |
|  | d. Create only one relation represented for all. |  |

Question 3

Marks: 1

Which of following statement is correct?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. The nondisjoint superclass/subclass relationship be represented by 'And' |  |
|  | b. The disjoint superclass/subclass relationship be represented by 'Or' |  |
|  | c. The disjoint constraint only applies when a superclass has only one subclass. |  |
|  | d. The disjoint constraint only applies when a superclass has more than one subclass. |  |

Question 4

Marks: 1

Which of concurrent control method can be used to avoid deadlock?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. 2-phase commit protocol |  |
|  | b. Timestamping |  |
|  | c. None of the others |  |
|  | d. 2-phase locking protocol |  |

Question 5

Marks: 1

Using Embedded SQL, a programmer is responsible for writing explicit code to fetch data into memory or store data back to the database. But when a \_\_\_\_\_\_\_\_\_\_ be used, a programmer can manipulate persistent data without having to write such code explicitly.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Object Query Language |  |
|  | b. Persistent Stored Module (SQL/PSM) |  |
|  | c. Persistent Programming Language |  |
|  | d. Functional Query Language |  |

Question 6

Marks: 1

Physical database design is concerned with actually defining the data model using the \_\_\_\_\_\_\_\_ of a particular DBMS

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. DML (data manipulation language) |  |
|  | b. DBDL (database design language) |  |
|  | c. None of the others |  |
|  | d. DDL (data definition language) |  |

Question 7

Marks: 1

To create a subtype, the user must have \_\_\_\_\_\_\_\_ privilege on any user-defined type that referenced within the new subtype.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. USAGE |  |
|  | b. UNDER |  |
|  | c. REFERENCE |  |
|  | d. All of the privileges |  |

Question 8

Marks: 1

Distribution transparency allows the user to perceive the database as a single logical database. Which of the following is lowest level of distribution transparency ?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Replication transparency |  |
|  | b. Location transparency |  |
|  | c. Fragmentation transparency |  |
|  | d. Local mapping transparency |  |

Question 9

Marks: 1

Select incorrect statement about derived horizontal fragmentation

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. A derived horizontal fragmentation can be defined using the semi-join operation of relational algebra. |  |
|  | b. A derived horizontal fragmentation is a horizontal fragmentation that is based on horizontal fragmentation of a parent relation. |  |
|  | c. The relation be fragmented that is a relation contain foreign key. |  |
|  | d. None of the others |  |

Question 10

Marks: 1

Suppose that we create a Staff table using the statement:  
CREATE TABLE Staff OF Staff Type UNDER Person;  
Which of the following statement is NOT correct

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. When we delete rows from the Staff table, the rows disappear from both the Staff and Person tables. |  |
|  | b. When we access all rows of Person, this will also include all Staff details. |  |
|  | c. The Staff table is supertable, and the Person table is subtable. |  |
|  | d. The Staff table is subtable, and the Person table is supertable. |  |

Question 11

Marks: 1

When the ordering attribute (index field) chosen is the key attributes of the relation, the index will be a \_\_\_\_\_\_\_; when the ordering attribute (index field) is the non-key attributes, the index will be a \_\_\_\_\_\_\_. Each relation can only have either a primary index or a clustering index and several secondary indexes.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. clustering index ... primary index |  |
|  | b. primary index ... clustering index |  |
|  | c. clustering index ... secondary index |  |
|  | d. primary index ... secondary index |  |

Question 12

Marks: 1

Select INCORRECT statement about CORBA (The Common Object Request Broker Architecture)

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. The CORBA is a standard defined by the Object Management Group (OMG) that enables software components written in multiple computer languages and running on multiple computers to work together. |  |
|  | b. The COBRA is first Object-Oriented Programming Language |  |
|  | c. The CORBA uses an interface definition language (IDL) to specify the interfaces which objects present to the outer world. |  |
|  | d. The CORBA enables separate pieces of software written in different languages and running on different computers to work with each other like a single application or set of services. |  |

Question 13

Marks: 1

Consider a replication environment, select a correct statement

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. update-conflict may only occur in workflow ownership model. |  |
|  | b. update-conflict may only occur in master-slave ownership model. |  |
|  | c. update-conflict never occurs in replication environment. |  |
|  | d. update-conflict may occur when multiple sites are allowed to update replicated data. |  |

Question 14

Marks: 1

Select INCORRECT about Object Query Language (OQL)

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. OQL aggregate functions can be applied within SELECT clause or to result of SELECT operation. |  |
|  | b. None of the others. |  |
|  | c. OQL does not provide explicit update operators, but leaves this to operations defined on object types. |  |
|  | d. OQL provides declarative access to the object database using SQL-like syntax. |  |

Question 15

Marks: 1

Which of following statement is not correct ?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. None of the others |  |
|  | b. Insert, update and delete operations on database in high normal-form is easy. But to get a sufficient information, a join operation must be taken on many relations. |  |
|  | c. The process of normalization generally produces a database schema with small relations (each realtion has a few attributes). |  |
|  | d. Each relation in high normal-form is poorly representation of 'real world' entity |  |

Question 16

Marks: 1

Consider the distributed query optimization, which of following statement is NOT correct ?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. ***Global optimization layer*** takes account of statistical information to find a near-optimal execution plan. |  |
|  | b. ***Query decomposition layer*** takes a query expressed on the global relations and performs a partial optimization. |  |
|  | c. None of the others. |  |
|  | d. ***Local optimization layer*** is run at each of the local sites involved in the query. Each local DBMS will perform its own local optimization. |  |

Question 17

Marks: 1

The result of \_\_\_\_\_\_\_\_ is a logical database design that is structurally consistent and has minimal redundancy. There may be circumstances for improving performance, we must be refine a relation become \_\_\_\_\_\_\_

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. normalization ... higher normalization |  |
|  | b. denormalization ... lower normalization |  |
|  | c. normalization ... denormalization |  |
|  | d. denormalization ... normalization |  |

Question 18

Marks: 1

Which of the following statements is NOT correct about 2-PL protocol?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. In growing-phase, a transaction acquires all the locks needed but cannot release any locks. |  |
|  | b. A transaction follows the two-phase locking protocol if all locking operations precede the first unlock operation in the transaction. |  |
|  | c. In shrinking-phase, a transaction releases its locks but cannot acquire any new locks |  |
|  | d. Shrinking and growing are phases in 2-PL protocol. Shrinking is the first phase, and growing is the second phase. |  |

Question 19

Marks: 1

There are two mechanisms to propagate updates in replication environment. With \_\_\_\_\_ replication, the replicated data is updated immediately when the source data is updated. An alternative mechanism is called \_\_\_\_\_ replication.With this mechanism, the replicated data is updated after the source database has been modified.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. master ... slave |  |
|  | b. publisher ... subscribers |  |
|  | c. update-anywhere ... read-only |  |
|  | d. synchronous ... asynchronous |  |

Question 20

Marks: 1

A many-to-many relationship can be decomposed by three relations that have two one-to-many relationships from two relations to a intermediate relation. For improving performance based on denormalization, we can duplicate some attributes that frequently be used from \_\_\_\_\_\_\_ relation into \_\_\_\_\_\_ relation to reduce \_\_\_\_\_\_ operation.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. the intermediate ... a one-side ... projection |  |
|  | b. a one-side ... the intermediate ... projection |  |
|  | c. the intermediate ... a one-side ... join |  |
|  | d. a one-side ... the intermediate ... join |  |

Question 21

Marks: 1

\_\_\_\_\_\_\_\_\_ is a schedule, that in which for each pair of transactions Ti and Tj, if Tj reads a data item previously written by Ti, then the commit operation of Ti precedes the commit operation of Tj.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Recoverable schedule |  |
|  | b. Conflict serializability schedule |  |
|  | c. View serializability schedule |  |
|  | d. Serial schedule |  |

Question 22

Marks: 1

After translating ER data model into relational data model, we should validate the groupings of attributes in each relation by using the rules of \_\_\_\_\_\_. The purpose of \_\_\_\_\_\_ is to ensure that the set of relations has a minimal and yet sufficient number of attributes necessary to support the data requirements of the enterprise.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. integrity constraint ... business logic |  |
|  | b. business logic ... normalization |  |
|  | c. business logic ... integrity constraint |  |
|  | d. normalization ... normalization |  |

Question 23

Marks: 1

In centralized deadlock detection, the Deadlock Detection Coordinator is responsible for constructing and maintaining a global wait-for-graph. \_\_\_\_\_\_\_

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. To reduce communication cost, there are some sites be appointed as the Deadlock Detection Coordinators. |  |
|  | b. Each sites has a own Deadlock Detection Coordinator. |  |
|  | c. Only one site be appointed as the Deadlock Detection Coordinator. |  |
|  | d. None of the others. |  |

Question 24

Marks: 1

Which of following statement is not correct?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. The aims of query processing are to transform a query into a correct and efficient execution strategy, and to execute the strategy to retrieve the required data. |  |
|  | b. The best optimized query is a query that returns the smallest number of tuples. |  |
|  | c. None of the others. |  |
|  | d. Query processing is the activities involved in parsing, validating, optimizing, and executing a query. |  |

Question 25

Marks: 1

Select correct statement about the ***set*** built-in collection type

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. a set is an unordered collections that do allow duplicates |  |
|  | b. a set is an unordered collections that do not allow duplicates |  |
|  | c. a set is an ordered collections that do not allow duplicates |  |
|  | d. a set is an ordered collections that do allow duplicates |  |

Question 26

Marks: 1

Which of the following statement is not correct to avoid of creating index ?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Avoid indexing an attribute or relation that is frequently updated. |  |
|  | b. Avoid indexing on small relation. |  |
|  | c. Avoid indexing attributes that consist of long character strings. |  |
|  | d. Avoid indexing an attribute if the query will retrieve a significant proportion (for example 25%) of the tuples in the relation. |  |

Question 27

Marks: 1

To carry out physical database design effectively, it is necessary to have knowledge of the transactions that will run on the database. So, we have to analyse the transactions. Which of the following characteristic should not be included in analyzing the transactions process ?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. time which transaction be executed |  |
|  | b. transaction frequence |  |
|  | c. all of the others |  |
|  | d. criticality of transaction |  |

Question 28

Marks: 1

With a large database system, we should distribute data across disks to decrease disk I/O time. Which of the following is not a the basic principle of distributing the data across disks ?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. None of the others |  |
|  | b. The recovery log file should be separated from the rest of the database |  |
|  | c. The main database files should be separated from the index files |  |
|  | d. The operating system files should be separated from the database files |  |

Question 29

Marks: 1

In the IBM's Distributed Relational Database Architecture, there are four types of transaction. Those are: ***remote request***, ***remote unit of work***, ***distributed unit of work*** and \_\_\_\_\_\_\_

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. local transaction |  |
|  | b. distributed transaction |  |
|  | c. local request |  |
|  | d. distributed request |  |

Question 30

Marks: 1

Which of the following statements is incorrect ?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. The design methodology helps the designer to plan, manage, control and evaluate database development projects. |  |
|  | b. The design methodology consists of phases each containing a number of steps that guide the designer in the choice of techniques that are appropriate at each stage of the project. |  |
|  | c. The design methodology also helps the designer to capture the user requirements more easier. |  |
|  | d. The design methodology is a structured approach that uses procedures, techniques, tools, and documentation aids, to support and facilitate the process of design. |  |

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Question 31

Marks: 1

The query processing can be divided into four main phases: query decomposition, query \_\_\_\_\_\_\_\_\_\_, code generation, and query execution.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. optimization |  |
|  | b. analyzation |  |
|  | c. normalization |  |
|  | d. all of the others |  |

Question 32

Marks: 1

An user must have the \_\_\_\_\_\_\_ privilege on the user-defined type specified as a supertype in the subtype definition.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. EXECUTE |  |
|  | b. REFERENCE |  |
|  | c. USAGE |  |
|  | d. UNDER |  |

Question 33

Marks: 1

To present data structure in memory and in a database stored on disk, the conventional DBMSs use ***two-level storage model***, In contrast, Object-Oriented DBMSs use ***\_\_\_\_\_\_\_\_\_***.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. single-level storage model |  |
|  | b. double-level storage model |  |
|  | c. three-level storage model |  |
|  | d. object-relational storage model |  |

Question 34

Marks: 1

Select incorrect statement

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Static query optimization method does not need the database statistics. |  |
|  | b. The dynamic query optimization method is better than the static query optimization method. |  |
|  | c. The static query optimization method is better than the dynamic query optimization method. |  |
|  | d. Two methods for executing the query optimization are dynamic query optimization and static query optimization. |  |

Question 35

Marks: 1

To identify entities in an is-a relationship, the \_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_ can be used. The process of maximizing the differences between members of an entity by identifying their distinguishing characteristics is called \_\_\_\_\_\_\_\_. The process of minimizing the differences between entities by identifying their common characteristics is called \_\_\_\_\_\_\_\_

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. specialization ... supertype |  |
|  | b. subclass ... superclass |  |
|  | c. generalization ... subclass |  |
|  | d. specialization ... generalization |  |

Question 36

Marks: 1

Which one is not a reason for needing to design database at conceptual level ?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. None of the others |  |
|  | b. Allows for easy converting from high-level model to relational model |  |
|  | c. Allows for easy communication between end-users and developers |  |
|  | d. Independent of DBMS |  |

Question 37

Marks: 1

The Common Object Request Broker Architecture (CORBA) defines architecture of \_\_\_\_\_\_\_ environment, in which a CORBA-based program can interoperate with another CORBA-based program across a variety of vendors

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Web service |  |
|  | b. ORB (Object Request Broker) - based |  |
|  | c. Database service |  |
|  | d. Internet |  |

Question 38

Marks: 1

Object-Relational DBMS, by using ***row type***, we can represent for a \_\_\_\_\_\_\_\_ attribute directly

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. simple |  |
|  | b. derived |  |
|  | c. all of the others |  |
|  | d. composite |  |

Question 39

Marks: 1

Select a correct statement

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. When two transactions either read or write completely separate data items, conflict may be occur |  |
|  | b. When two transactions only read a data item, conflict may be occur |  |
|  | c. When one transaction writes a data item and another either reads or writes the same data item, conflict may be occur |  |
|  | d. All of the others |  |

Question 40

Marks: 1

Which of the implementation methods for replication ensures atomicity feature of an transaction ?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Transactional update |  |
|  | b. Database trigger |  |
|  | c. All of the others |  |
|  | d. Snapshot update |  |

Question 41

Marks: 1

Select the incorrect statement about database statistics.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Both heuristic and cost-based method of query optimization depend on database statistics. |  |
|  | b. The database statistics typically cover information about relations, attribute, and indexes. |  |
|  | c. The DBMS should update the statistics every time a tuple is inserted, updated, or deleted. |  |
|  | d. Database statistics should be only updated on a periodic basis. |  |

Question 42

Marks: 1

What is the process of generating and reproducing multiple copies of data at one or more sites called ?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Data asynchronization |  |
|  | b. Data backup and recovery |  |
|  | c. Data synchronization |  |
|  | d. Data replication |  |

Question 43

Marks: 1

For improving performance, instead of combining the relations into a single relation, a otherwise approach decomposes a large relation into a number of smaller and more manageable pieces called \_\_\_\_\_\_\_\_.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. lower normalization form relations |  |
|  | b. partitions |  |
|  | c. portions |  |
|  | d. higher normalization form relations |  |

Question 44

Marks: 1

Select INCORRECT meaning about the objective of ***local-autonomy feature* in the Date's twelve rules for a distributed DBMS**

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. none of the others. |  |
|  | b. local operations remain purely local |  |
|  | c. all operations at a given site are controlled by the centralized site |  |
|  | d. local data is locally owned and managed |  |

Question 45

Marks: 1

The relational model has only one type of structure is the relation and it only uses this structure for representing for both data and relationships between data. So, It is said that the relational model is \_\_\_\_\_\_\_. This is a weakness of relational model.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. semantically overloaded |  |
|  | b. rich semantic |  |
|  | c. poor semantic |  |
|  | d. Impedance mismatch |  |

Question 46

Marks: 1

In distributed query optimization, the ***Data Localization Layer*** gets information about distribution of data. By using its reconstruction algorithms, it replaces the global relations at the leaves of the relational algebra tree with \_\_\_\_\_\_\_\_\_\_\_

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. suitable relational algebra operations. |  |
|  | b. other global relations. |  |
|  | c. other optimized global relations |  |
|  | d. suitable data fragments |  |

Question 47

Marks: 1

Which one is not a task in conceptual database design phase?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. identify attributes and attribute domains |  |
|  | b. identify integrity constraints |  |
|  | c. identify entity types |  |
|  | d. identify relations |  |

Question 48

Marks: 1

In an entity-relationship model, all Library Item is separated into one of Book, Journal and Digital-Video entity types. What are participation and disjoint constraints between Library Item generalization entity and its specialization entities (i.e Book, Journal, Digital-Video) ?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. optional (partial participation) and disjoint |  |
|  | b. optional (partial participation) and nodisjoint (overlapping) |  |
|  | c. mandatory (total participation) and nondisjoint (overlapping) |  |
|  | d. mandatory (total participation) and disjoint |  |

Question 49

Marks: 1

Given a relation Staff(staffNo, fName, lname, ..., managerNo). The managerNo attribute references to the primary key staffNo. Which of following operation can not affect to the referential integrity.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Update an exists tuple on managerNo of the Staff relation |  |
|  | b. Delete an exists tuple from the Staff relation |  |
|  | c. Insert a new tuple into the Staff relation. |  |
|  | d. None of the others. |  |

Question 50

Marks: 1

To convert ER data model to relational data model. For each many-to-many (\*:\*) binary relationship, we create a relation to represent the relationship and post a copy of the \_\_\_\_\_\_\_\_ attribute(s) of the entities that participate in the relationship into this relation, to act as \_\_\_\_\_\_\_\_.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. foreign keys ... primary key |  |
|  | b. primary key ... alternate key |  |
|  | c. primary key ... unique key |  |
|  | d. primary key ... foreign keys |  |

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Question 31

Marks: 1

How to translate entities having a multiple-valued attribute in an ER diagram to relational model?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Translate multi-valued attribute to 1:1 relationship |  |
|  | b. Translate multi-valued attribute to composite attribute |  |
|  | c. Create a relation to represent the multi-valued attribute |  |
|  | d. Translate multi-valued attribute to multi single attributes |  |

Question 32

Marks: 1

Select correct statement

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. If all participants vote commit, then the coordinator instructs all participants to commit the transaction. |  |
|  | b. Two-phase commit protocol has two phases: voting phase and decision phase. |  |
|  | c. All of the others. |  |
|  | d. If one participant votes abort, then the coordinator instructs all participants to abort the transaction. |  |

Question 33

Marks: 1

Which of the following is a strategy for developing an Object-Oriented DBMS ?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Extend existing database language with object-oriented capabilities. |  |
|  | b. Embed OODB language constructs in a conventional host language. |  |
|  | c. Extend existing object-oriented programming language. |  |
|  | d. All of the others |  |

Question 34

Marks: 1

Which of the following is not a object-oriented feature that being added in ORDBMS ?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. interface |  |
|  | b. encapsulation |  |
|  | c. polymorphism |  |
|  | d. inheritance |  |

Question 35

Marks: 1

The query processing can be divided into four main phases: query decomposition, query \_\_\_\_\_\_\_\_\_\_, code generation, and query execution.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. analyzation |  |
|  | b. normalization |  |
|  | c. optimization |  |
|  | d. all of the others |  |

Question 36

Marks: 1

Which of following is NOT correct about the rule for data fragmentation ?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. ***completeness***: If a relation R is decomposed into fragments R1, R2, ..., Rn, then each data item that can be found in R must appear in at least one fragment. |  |
|  | b. ***disjointness***: If a data item appears in a fragment, then it should not appear in the any other fragment. Vertical fragmentation is the exception to this rule. |  |
|  | c. None of the others. |  |
|  | d. ***reconstruction***: It must be possible to define a relational operation that will reconstruct the relation R from the fragments. |  |

Question 37

Marks: 1

In the physical database design, which of the following task is **not** included in this phase?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Design representation of derived data. |  |
|  | b. Design security mechanisms. |  |
|  | c. None of the others. |  |
|  | d. Design file organizations and indexes. |  |

Question 38

Marks: 1

Which of followings is NOT an advantage of horizontal/vertical partitioning?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. decreased disk storage |  |
|  | b. increased availability |  |
|  | c. increased security |  |
|  | d. improved load balancing |  |

Question 39

Marks: 1

A nested relation can be represented in Object-Relational DBMS by using \_\_\_\_\_\_\_\_

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Recusion |  |
|  | b. All of the others |  |
|  | c. UDT (User-Defined Type) |  |
|  | d. UDR (User-Defined Routine) |  |

Question 40

Marks: 1

Physical database design is concerned with actually defining the data model using the \_\_\_\_\_\_\_\_ of a particular DBMS

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. DBDL (database design language) |  |
|  | b. DDL (data definition language) |  |
|  | c. DML (data manipulation language) |  |
|  | d. None of the others |  |

Question 41

Marks: 1

When a \_\_\_\_\_\_\_ attribute is stored in database, it is immediately available for accessing. So that, beside storage overhead for storing it, we be incurred a additional overhead to keep it \_\_\_\_\_\_\_ with other attributes from which it is derived.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. derived ... correspond |  |
|  | b. derived ... consistent |  |
|  | c. multivalued ... correspond |  |
|  | d. multivalued ... consistent |  |

Question 42

Marks: 1

Which of the statement below is not correct ?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. The relational data model is a form of logical data model. |  |
|  | b. The ER model was developed for the purposes of understanding data requirements and business rules about the data, not structuring the data. |  |
|  | c. An ER data model is not a relational data model. |  |
|  | d. None of the others. |  |

Question 43

Marks: 1

When SQL statement is embedded in high-level programming language, there is a problem occurs involving in conversion between two different type systems. This problem is called \_\_\_\_\_\_\_

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. invalid type-checking |  |
|  | b. poor programming paradigms |  |
|  | c. invalid type-conversion |  |
|  | d. impedance mismatch |  |

Question 44

Marks: 1

How do you represent a 1:\* (one-to-many) unary relationship in a relational data model ?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. This relationship is represented by two relations, in which the foreign key of a relation references to the primary key of another relation. |  |
|  | b. This relationship is represented by a relation, in which the primary key always has at least two attributes. |  |
|  | c. This relationship is represented by a new associative relation whose primary key consists of the primary key attributes of the participating entity types. |  |
|  | d. This relationship is represented by a recursive foreign key whose values reference the primary key values of the same relation. |  |

Question 45

Marks: 1

In data replication environment, select the correct statement about the ***master-slave ownership.***

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. All sites have the privilege to update the data. |  |
|  | b. The master-slave replication is also known as asymmetric replication. |  |
|  | c. Only slave sites have the privilege to update the data. |  |
|  | d. All updates at source site are not need to propagate to other sites that holds the replica. |  |

Question 46

Marks: 1

In Functional Data Model, both attributes and relationships between entity types can be presented by the \_\_\_\_\_\_\_ with arguments. Thus, the FDM makes no distinction between attributes and relationship.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. procedures |  |
|  | b. methods |  |
|  | c. functions |  |
|  | d. constructors |  |

Question 47

Marks: 1

For improving performance, instead of combining the relations into a single relation, a otherwise approach decomposes a large relation into a number of smaller and more manageable pieces called \_\_\_\_\_\_\_\_.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. higher normalization form relations |  |
|  | b. partitions |  |
|  | c. portions |  |
|  | d. lower normalization form relations |  |

Question 48

Marks: 1

Select correct statement

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Paralle DBMS is a DBMS running across multiple processors and disks that is designed to execute operations in parallel, whenever possible, in order to improve performance. |  |
|  | b. Distributed processing means that A centralized database that can be accessed over a computer network. |  |
|  | c. All of the others. |  |
|  | d. Distributed DBMS is that the system consists of data that is physically distributed across a number of sites in the network. |  |

Question 49

Marks: 1

Which of the following is not a state of a transaction?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. aborted |  |
|  | b. active |  |
|  | c. rolled-back |  |
|  | d. committed |  |

Question 50

Marks: 1

At a time, each Department is managed by only one Manager, and we want to keep track of historical data (about the manager of department). The relationship between Department entity and Manager entity should be presented as \_\_\_\_\_\_\_ in ER diagram

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. 1:n (one-to-many) |  |
|  | b. n:n (many-to-many) |  |
|  | c. n:1 (many-to-one) |  |
|  | d. 1:1 (one-to-one) |  |

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Question 1

Marks: 1

\_\_\_\_\_\_\_\_ is a language for defining the specifications of object types for ODMG-compliant systems, equivalent to the Data Definition Language (DDL) of traditional DBMSs. Thus, a Object-Oriented Database scheme can be defined by using \_\_\_\_\_\_\_\_\_\_

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Object Query Language (OQL) |  |
|  | b. Interface Definition Language (IDL) |  |
|  | c. Object Definition Language (ODL) |  |
|  | d. Object Model (OM) |  |

Question 2

Marks: 1

The strategies for implementing join operation are block nested loop join, indexed nested loop join, sort-merge join and \_\_\_\_\_\_\_\_\_

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. hash join |  |
|  | b. nested sort-merge join |  |
|  | c. theta join |  |
|  | d. indexed sort-merge join |  |

Question 3

Marks: 1

Which statement is not correct about type of Master/Slave ownership in replication environment ?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. The slave sites subscribe to read-only copies of that relation. |  |
|  | b. A master site may own the data in an entire relation. |  |
|  | c. This type of replication is also known as symmetric replication. |  |
|  | d. None of the others. |  |

Question 4

Marks: 1

Generalization and specialization entities are used to represent for \_\_\_\_\_\_\_\_\_\_\_ relationship

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. recursive |  |
|  | b. composition |  |
|  | c. none of the others |  |
|  | d. existence-dependent |  |

Question 5

Marks: 1

The major components of the Object Data Management Group (ODMG) architecture for an Object-Oriented DBMS are: Object Model (OM), \_\_\_\_\_\_\_\_, Object Query Language (OQL) and C++, Smalltalk, and Java Language Binding.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. None of the others |  |
|  | b. Common Object Request Broker Architecture (CORBA) |  |
|  | c. Interface Definition Language (IDL) |  |
|  | d. Object Definition Language (ODL) |  |

Question 6

Marks: 1

In general, data replication enhances the performance of \_\_\_\_\_\_ operations and increases the availability of data to read-only transactions. However, \_\_\_\_\_\_ transactions incur greater overhead. Controlling concurrent updates by several transactions to replicated data is more complex than in centralized systems.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. write ... update |  |
|  | b. read ... update |  |
|  | c. read ... read |  |
|  | d. update ... read |  |

Question 7

Marks: 1

What problems might not arise from vertically partitioning a relation?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Duplication of data across the partitions will use more storage space than data stored in normalized relations. |  |
|  | b. Partitioning is usually not transparent to programmers, who will have to write more complex programs due to the violations of third normal form. |  |
|  | c. None of the others |  |
|  | d. The violations of third normal form will lead to anomalies. |  |

Question 8

Marks: 1

In enhanced entity relationship model, the relationship between Department entity and University entity should be modeled as a \_\_\_\_\_\_ relationship

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. none of the others |  |
|  | b. specialization/generalization |  |
|  | c. composition |  |
|  | d. aggregation |  |

Question 9

Marks: 1

The built-in collections in ODMG Object Model are: set, bag, list, array, and \_\_\_\_\_\_\_\_\_

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. double-list |  |
|  | b. collection |  |
|  | c. multi-set |  |
|  | d. dictionary |  |

Question 10

Marks: 1

In 2-phase commit protocol, which of the following is NOT a state of the coordinator ?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. WAITING |  |
|  | b. COMMITED |  |
|  | c. COMPLETED |  |
|  | d. DECIDED |  |

Question 11

Marks: 1

The first step of physical database design is to identify all base \_\_\_\_\_\_\_\_. In this step, the designer must to define the relations and all characteristics of the attributes such as: domain and \_\_\_\_\_\_\_ on the domain, default value, ...

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. tables ... tables |  |
|  | b. relations ... constraints |  |
|  | c. relations ... triggers |  |
|  | d. constraints ... triggers |  |

Question 12

Marks: 1

In a distributed environment, the algorithms based on 2-phase locking can be classified as \_\_\_\_\_\_\_\_, primary copy, or distributed.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. fragmentized |  |
|  | b. centralized |  |
|  | c. secondary copy |  |
|  | d. none of the others. |  |

Question 13

Marks: 1

To maintain the integrity of data caused by DE normalization, the \_\_\_\_\_\_\_ can be used

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. all of the others |  |
|  | b. batch reconciliation |  |
|  | c. trigger |  |
|  | d. application transaction |  |

Question 14

Marks: 1

Which of the task below is not included in conceptual database design phase ?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Identify and associate attributes with entity or relationship types. |  |
|  | b. Identify entity and relationship types. |  |
|  | c. Identify how to implement the business process rules. |  |
|  | d. Validate the conceptual data model against user transactions, and review the conceptual data model with user. |  |

Question 15

Marks: 1

Select incorrect statement

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Horizontal fragment can be defined by using selection operation of relational algebra. |  |
|  | b. Vertical fragment can be defined by using projection operation of relational algebra. |  |
|  | c. None of the others. |  |
|  | d. Mixed fragment can be defined by using selection and projection operations of relational algebra. |  |

Question 16

Marks: 1

In database design, there is a bottom-up approach process, this process defines universal entity type from a set of particular entity types by identifying their common characteristics. What is this process ?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. generalization |  |
|  | b. specialization |  |
|  | c. normalization |  |
|  | d. denormalization |  |

Question 17

Marks: 1

FDM - Functional Data Model is one of the simplest in the family of semantic data models. In this model, the main modeling primitives are ***entities*** and ***\_\_\_\_\_\_\_\_\_\_***

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. functional dependencies |  |
|  | b. None of the others |  |
|  | c. entity relationships |  |
|  | d. functional relationships |  |

Question 18

Marks: 1

Select incorrect statement

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. The order of execution of operations starts at the root node to the leaf nodes. |  |
|  | b. The relational algebra tree represents the input relations of the query as leaf nodes of the tree, and represents the relational algebra operations as internal nodes. |  |
|  | c. A relational algebra tree is a tree data structure that corresponds to a relational algebra expression. |  |
|  | d. An execution of the relational algebra tree consists of executing an internal node operation whenever its operands are available and then replacing that internal node by the relation that results from executing the operation. |  |

Question 19

Marks: 1

Select incorrect statement

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. With asynchronous replication, when the source data is updated, the replicated data is updated immediately. |  |
|  | b. With synchronous replication, even if one or more sites that hold replicas are unavailable, the update transaction may complete successfully. |  |
|  | c. With synchronous replication, when the source data is updated, the other replica can be updated later periodically. |  |
|  | d. With asynchronous replication, even if one or more sites that hold replicas are unavailable, the update transaction may complete successfully. |  |

Question 20

Marks: 1

Select INCORRECT statement about OMG - Object Management Group

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. The OMG is a international nonprofit-making industry consortium founded in 1989 to address the issues of object standards. |  |
|  | b. The primary aims of OMG are promotion of object-oriented approach and Development of standards in which location, environment, language, and other characteristics of objects are completely transparent to other objects. |  |
|  | c. The OMG is not a recognized standard group unlike the ISO - International Organization for Standardization. |  |
|  | d. None of the others |  |

Question 21

Marks: 1

The encapsulation feature in Object-Relational database model is presented by \_\_\_\_\_\_\_

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. persistent stored module. |  |
|  | b. all of the others |  |
|  | c. user-defined supertype and subtype. |  |
|  | d. observer and mutator functions of user-defined type. |  |

Question 22

Marks: 1

Which schedule below is conflict serializable schedule?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. {write(T1, x), write(T2, x), read(T2, y), write(T1, y)} |  |
|  | b. {write(T2, x), write(T1, x), write(T2, y), write(T1, y)} |  |
|  | c. {read(T1, x), write(T2, x), write(T2, y), write(T1, y)} |  |
|  | d. None of the others |  |

Question 23

Marks: 1

Select incorrect statement about 2-phase commit protocol

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. After a participant has voted to commit a transaction, it can cannot go ahead and commit the transaction. |  |
|  | b. After a participant has voted to commit a transaction, the participant may be blocked if it does not receive the global decision |  |
|  | c. After a participant has voted to commit a transaction, it can change its vote and abort the transaction. |  |
|  | d. All of the others. |  |

Question 24

Marks: 1

Consider ER diagram containing superclass/subclass relationship with an optional participation constraint and a disjoint constraint. How to translate it to relational model?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Create two relations, a relation represents for the superclass and another relation represents for all subclasses. |  |
|  | b. None of the others. |  |
|  | c. Create one relation represented for superclass and many relations, one represented for each subclass. |  |
|  | d. Create only one relation represented for all. |  |

Question 25

Marks: 1

Select correct statements

A)   
CREATE TYPE PersonType (fName VARCHAR(15), lName VARCHAR(15))   
INSTANTIABLE   
FINAL;

SET p = NEW PersonType();   
  
B)   
CREATE TYPE PersonType AS (fName VARCHAR(15), lName VARCHAR(15))   
NOT INSTANTIABLE   
NOT FINAL;

SET p = NEW PersonType();   
  
C)   
CREATE TYPE PersonType AS (fName VARCHAR(15), lName VARCHAR(15))   
NOT INSTANTIABLE   
FINAL;

SET p = NEW PersonType();   
  
D)   
CREATE TYPE PersonType AS (fName VARCHAR(15), lName VARCHAR(15))   
INSTANTIABLE   
NOT FINAL;

SET p = NEW PersonType();

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. C) |  |
|  | b. B) |  |
|  | c. A) |  |
|  | d. D) |  |

Question 26

Marks: 1

Which of statement below is not correct about Distributed Database Environment?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Data is split into a number of fragments. |  |
|  | b. All data fragments must be replicated. |  |
|  | c. Data at each site is under the control of a Database Management System |  |
|  | d. A distributed database is a collection of multiple, logically interrelated databases distributed over a computer network. |  |

Question 27

Marks: 1

Which of following statement is correct?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. The disjoint constraint only applies when a superclass has only one subclass. |  |
|  | b. The nondisjoint superclass/subclass relationship be represented by 'And' |  |
|  | c. The disjoint constraint only applies when a superclass has more than one subclass. |  |
|  | d. The disjoint superclass/subclass relationship be represented by 'Or' |  |

Question 28

Marks: 1

Select a correct statement

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. When two transactions only read a data item, conflict may be occur |  |
|  | b. All of the others |  |
|  | c. When one transaction writes a data item and another either reads or writes the same data item, conflict may be occur |  |
|  | d. When two transactions either read or write completely separate data items, conflict may be occur |  |

Question 29

Marks: 1

\_\_\_\_\_\_\_\_ can cause \_\_\_\_\_\_\_ problem. This problem occurs when two (or more) transactions are each waiting for locks to be released that are held by the other.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. concurrent protocol ... overlock |  |
|  | b. 2PL protocol ... livelock |  |
|  | c. None of the others |  |
|  | d. 2PL protocol ... deadlock |  |

Question 30

Marks: 1

Given below relations:   
Department(DepID, DepName)   
Instructor(InsID, FullName, DOB, Sex, DepID) , with DepID is a foreign key   
To display full name of female instructor that belongs to IT department. Which of the relational algebra expression below is already optimized?   
(note: Alias of Department is D, alias of Instructor is I)

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. ΠFullName (σDepName='IT'(Department) ⋈D.DepID=I.DepIDΠFullName,DepID(σSex='F'(Instructor))) |  |
|  | b. ΠFullName (σDepName='IT'(Department) ⋈D.DepID=I.DepID σSex='F'(Instructor)) |  |
|  | c. ΠFullName (σDepName='IT' and Sex='F' (Department ⋈D.DepID=I.DepIDInstructor)) |  |
|  | d. ΠFullName (ΠDepID(σDepName='IT'(Department)) ⋈D.DepID=I.DepIDΠFullName,DepID(σSex='F'(Instructor))) |  |

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Question 1

Marks: 1

Select **incorrect** statement about the translation process from ER diagram, containing weak entities, to relational model

Choose one answer.  (đề sai?? All of the others?)

|  |  |  |
| --- | --- | --- |
|  | a. The key of a relation corresponding to a weak entity does not include key of the owner entity. |  |
|  | b. For each weak entity in ER diagram, create a relation that includes all attributes of that weak entity. |  |
|  | c. None of the others. |  |
|  | d. Create only one relation corresponding to a weak entity and the owner entity of it |  |

Question 2

Marks: 1

Student(StudentID, StudentName, CampusAddress, GPA)   
Registration(StudentID, CourseID, Grade)   
  
Support that the following is a typical query against these relations   
  
SELECT Student.StudentID, StudentName, CourseID, Grade   
FROM Student, Registration   
WHERE Student.StudentID AND Registration.StudentID AND GPA > 3.0   
ORDER BY StudentName;   
  
On what attributes should not indexes be defined to speed up this query?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. GPA, StudentName of the Student relation |  |
|  | b. StudentID of the Student relation |  |
|  | c. None of the others |  |
|  | d. StudentID, CourseID of the Registration relation |  |

Question 3

Marks: 1

Why conceptual design phase should not be ignored in the designing database for enterprise application ?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. It uses entity-relationship diagram. |  |
|  | b. It identifies the most important relations and their attributes. |  |
|  | c. All of the others. |  |
|  | d. It identifies what data be used in an enterprise, and entirely independent of implementation details. |  |

Question 4

Marks: 1

Select INCORRECT statement about OMG - Object Management Group

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. The primary aims of OMG are promotion of object-oriented approach and Development of standards in which location, environment, language, and other characteristics of objects are completely transparent to other objects. |  |
|  | b. The OMG is not a recognized standard group unlike the ISO - International Organization for Standardization. |  |
|  | c. None of the others |  |
|  | d. The OMG is a international nonprofit-making industry consortium founded in 1989 to address the issues of object standards. |  |

Question 5

Marks: 1

Given below relations:   
Department(DepID, DepName)   
Instructor(InsID, FullName, DOB, Sex, DepID) , with DepID is a foreign key   
To display full name of female instructor that belongs to IT department. Which of the relational algebra expression below is already optimized?   
(note: Alias of Department is D, alias of Instructor is I)

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. ΠFullName (ΠDepID(σDepName='IT'(Department)) ⋈D.DepID=I.DepID ΠFullName,DepID(σSex='F'(Instructor))) |  |
|  | b. ΠFullName (σDepName='IT'(Department) ⋈D.DepID=I.DepID σSex='F'(Instructor)) |  |
|  | c. ΠFullName (σDepName='IT'(Department) ⋈D.DepID=I.DepID ΠFullName,DepID(σSex='F'(Instructor))) |  |
|  | d. ΠFullName (σDepName='IT' and Sex='F' (Department ⋈D.DepID=I.DepID Instructor)) |  |

Question 6

Marks: 1

Consider the distributed query optimization, the result of ***Data Localization Layer* is \_\_\_\_\_\_\_**

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. reduced query on data fragments. |  |
|  | b. optimized relational algebra query. |  |
|  | c. none of the others. (**Each fragment is stored at site with “optimal” distribution)** |  |
|  | d. optimized execution plan. |  |

Question 7

Marks: 1

Select incorrect statement

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Heterogeneous systems usually result when individual sites have implemented their own databases and integration is considered at a later stage. |  |
|  | b. Heterogeneous Distributed DBMS is a system where all sites use the same DBMS product. |  |
|  | c. All of the others. |  |
|  | d. Designing and managing a homogeneous system is much easier than heterogeneous system. |  |

Question 8

Marks: 1

Select correct statement about the ***set*** built-in collection type

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. a set is an ordered collections that do not allow duplicates |  |
|  | b. a set is an unordered collections that do allow duplicates |  |
|  | c. a set is an unordered collections that do not allow duplicates |  |
|  | d. a set is an ordered collections that do allow duplicates |  |

Question 9

Marks: 1

Which of the following situations can NOT be applied the denormalization to improve data retrieval?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Duplicating key attributes in one-to-many (1:\*) relationships to simplify join-predicate. |  |
|  | b. Duplicating attributes in many-to-many (\*:\*) relationships to reduce join operations |  |
|  | c. Combining one-to-one (1:1) relationships. |  |
|  | d. Duplicating non-key or foreign key attributes in one-to-many (1:\*) relationships to reduce join operations |  |

Question 10

Marks: 1

Select incorrect statement

Choose one answer. (?? What is better? Time, cost, data)

|  |  |  |
| --- | --- | --- |
|  | a. Two methods for executing the query optimization are dynamic query optimization and static query optimization. |  |
|  | b. Static query optimization method does not need the database statistics. |  |
|  | c. The static query optimization method is better than the dynamic query optimization method. |  |
|  | d. The dynamic query optimization method is better than the static query optimization method. |  |

Question 11

Marks: 1

In a human resource management database, each staff may be has many position throughout working in the company. The end users only want to know information about the latest position of each staff. The relationship from Staff entity to Position entity should be presented as \_\_\_\_\_\_\_ in ER diagram

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. 1:n (one-to-many) |  |
|  | b. 1:1 (one-to-one) |  |
|  | c. n:n (many-to-many) |  |
|  | d. n:1 (many-to-one) |  |

Question 12

Marks: 1

Select incorrect statement about reference type of object-relational database model

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. None of the others |  |
|  | b. Reference type gives the optimizer an alternative way to navigate data instead of using value-based joins. |  |
|  | c. Reference type allows a row to be shared among multiple tables. |  |
|  | d. Reference type enables users to replace complex join definitions in queries with much simpler path expressions. |  |

Question 13

Marks: 1

A many-to-many relationship can be decomposed by three relations that have two one-to-many relationships from two relations to a intermediate relation. For improving performance based on denormalization, we can duplicate some attributes that frequently be used from \_\_\_\_\_\_\_ relation into \_\_\_\_\_\_ relation to reduce \_\_\_\_\_\_ operation.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. a one-side ... the intermediate ... join |  |
|  | b. a one-side ... the intermediate ... projection |  |
|  | c. the intermediate ... a one-side ... projection |  |
|  | d. the intermediate ... a one-side ... join |  |

Question 14

Marks: 1

Select INCORRECT statement about CORBA (The Common Object Request Broker Architecture)

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. The COBRA is first Object-Oriented Programming Language |  |
|  | b. The CORBA enables separate pieces of software written in different languages and running on different computers to work with each other like a single application or set of services. |  |
|  | c. The CORBA uses an interface definition language (IDL) to specify the interfaces which objects present to the outer world. |  |
|  | d. The CORBA is a standard defined by the Object Management Group (OMG) that enables software components written in multiple computer languages and running on multiple computers to work together. |  |

Question 15

Marks: 1

Select **incorrect** statement about creating an index.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Create index on the attributes that is frequently updated |  |
|  | b. Create index on the attributes that are frequently involved in condition of join operation |  |
|  | c. Create index on the foreign key if it is frequently accessed. |  |
|  | d. Create a index on primary key. |  |

Question 16

Marks: 1

Which of the followings is **not** a benefit of database replication in a distributed system ?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. increase availability |  |
|  | b. none of the others. |  |
|  | c. support a disconnected computing model |  |
|  | d. increase performance of the system |  |

Question 17

Marks: 1

Select **incorrect** statement about the creating directed edge in ***precedence graph.***

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. create a directed edge Ti -> Tj, if Tj writes a value into an item after it has been read by Ti |  |
|  | b. create a directed edge Ti -> Tj, if Tj reads the value of an item be written by Ti |  |
|  | c. create a directed edge Ti -> Tj, if Tj writes a value into an item after it has been written by Ti |  |
|  | d. create a directed edge Ti -> Tj, if Tj reads the value of an item be read by Ti |  |

Question 18

Marks: 1

Using Embedded SQL, a programmer is responsible for writing explicit code to fetch data into memory or store data back to the database. But when a \_\_\_\_\_\_\_\_\_\_ be used, a programmer can manipulate persistent data without having to write such code explicitly.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Object Query Language |  |
|  | b. Persistent Programming Language |  |
|  | c. Functional Query Language |  |
|  | d. Persistent Stored Module (SQL/PSM) |  |

Question 19

Marks: 1

Which of following statement is not correct?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Query processing is the activities involved in parsing, validating, optimizing, and executing a query.  (denomolization (parsing, validating), optimizing, **code generation** and executing) |  |
|  | b. None of the others. |  |
|  | c. The aims of query processing are to transform a query into a correct and efficient execution strategy, and to execute the strategy to retrieve the required data. |  |
|  | d. The best optimized query is a query that returns the smallest number of tuples. |  |

Question 20

Marks: 1

With UML, a \_\_\_\_\_\_\_ model the functionality provided by the system, users who interact with system, and association between the users and the functionality.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. activity diagram |  |
|  | b. class diagram |  |
|  | c. use-case diagram |  |
|  | d. collaboration diagram |  |

Question 21

Marks: 1

Which of the following about transaction is NOT correct ?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. When transaction is aborted, all effects of the transaction on the data must be rolled back. |  |
|  | b. After a transaction has been committed, all effects of the transaction on the data can be rolled back. |  |
|  | c. All of the others. |  |
|  | d. After a transaction has been committed, all effects of the transaction on the data should be permanently recorded in the database. |  |

Question 22

Marks: 1

Which one is not a reason for needing to design database at conceptual level ?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Allows for easy converting from high-level model to relational model |  |
|  | b. Allows for easy communication between end-users and developers |  |
|  | c. Independent of DBMS |  |
|  | d. None of the others |  |

Question 23

Marks: 1

There are two mechanisms to propagate updates in replication environment. With \_\_\_\_\_ replication, the replicated data is updated immediately when the source data is updated. An alternative mechanism is called \_\_\_\_\_ replication.With this mechanism, the replicated data is updated after the source database has been modified.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. synchronous ... asynchronous |  |
|  | b. master ... slave |  |
|  | c. publisher ... subscribers |  |
|  | d. update-anywhere ... read-only |  |

Question 24

Marks: 1

Which of the following statements is NOT correct about 2-PL protocol?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Shrinking and growing are phases in 2-PL protocol. Shrinking is the first phase, and growing is the second phase. |  |
|  | b. In growing-phase, a transaction acquires all the locks needed but cannot release any locks. |  |
|  | c. In shrinking-phase, a transaction releases its locks but cannot acquire any new locks |  |
|  | d. A transaction follows the two-phase locking protocol if all locking operations precede the first unlock operation in the transaction. |  |

Question 25

Marks: 1

When the ordering attribute (index field) chosen is the key attributes of the relation, the index will be a \_\_\_\_\_\_\_; when the ordering attribute (index field) is the non-key attributes, the index will be a \_\_\_\_\_\_\_. Each relation can only have either a primary index or a clustering index and several secondary indexes.

Choose one answer.  (primary index = clustering index, secondary index = non-clustering index)

|  |  |  |
| --- | --- | --- |
|  | a. clustering index ... secondary index |  |
|  | b. clustering index ... primary index |  |
|  | c. primary index ... clustering index |  |
|  | d. primary index ... secondary index |  |

Question 26

Marks: 1

\_\_\_\_\_\_\_\_\_ is a language that provides the programmer with the ability transparently to preserve data across successive executions of a program, and even allows such data to be used by different programs.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Object-Oriented Programming Language |  |
|  | b. Persistent Programming Language |  |
|  | c. Persistent Stored Module (SQL/PSM). |  |
|  | d. Functional Programming Language |  |

Question 27

Marks: 1

Which of the followings is not an advantage of centralized 2PL in a distributed environment

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Bottleneck issue may be occur at the site that maintains the locking information |  |
|  | b. Easy to implement. |  |
|  | c. None of the others. |  |
|  | d. Deadlock detection is no more difficult than centralized DBMS. |  |

Question 28

Marks: 1

Which of following statement is not correct ?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. None of the others. |  |
|  | b. Disjoint constraint specifies that if an entity instance (of the superclass) is a member of one subclass, it cannot simultaneously be a member of two (or more) subclasses. |  |
|  | c. Mandatory participation constraint specifies that each entity instance of the superclass may not be a member of some subclass in the relationship. |  |
|  | d. Overlap (nondisjoint) constraint specifies that an entity instance can simultaneously be a member of two (or more) subclasses. |  |

Question 29

Marks: 1

The encapsulation feature in Object-Relational database model is presented by \_\_\_\_\_\_\_

Choose one answer. (chap 29)

|  |  |  |
| --- | --- | --- |
|  | a. all of the others |  |
|  | b. persistent stored module. (use in [stored procedures](http://en.wikipedia.org/wiki/Stored_procedure)) |  |
|  | c. observer and mutator functions of user-defined type (giống getter và setter). |  |
|  | d. user-defined supertype and subtype (inheritance). |  |

Question 30

Marks: 1

Which of the implementation methods for replication ensures atomicity feature of an transaction ?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Snapshot update |  |
|  | b. All of the others |  |
|  | c. Database trigger |  |
|  | d. Transactional update |  |

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## Kỳ thi: Final Exam - Ngày thi: 12.03.2015

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Question 31

Marks: 1

Three generally techniques for handling deadlock are : timeout, deadlock prevention, and deadlock detection. The deadlock prevention approach uses \_\_\_\_\_\_ or conservative 2PL to prevent deadlock. While the deadlock detection approach uses \_\_\_\_\_ that shows the transaction dependencies to detect deadlock.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. transaction timestamp ... precedence graph |  |
|  | b. transaction timestamp ... wait-for graph |  |
|  | c. strict-2PL ... precedence graph |  |
|  | d. strict-2PL ... wait-for graph |  |

Question 32

Marks: 1

The major components of the Object Data Management Group (ODMG) architecture for an Object-Oriented DBMS are: Object Model (OM), \_\_\_\_\_\_\_\_, Object Query Language (OQL) and C++, Smalltalk, and Java Language Binding.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Common Object Request Broker Architecture (CORBA) |  |
|  | b. Interface Definition Language (IDL) |  |
|  | c. None of the others |  |
|  | d. Object Definition Language (ODL) |  |

Question 33

Marks: 1

Which information does the physical database design phase provide ?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Definitions of each attribute, along with physical specifications such as maximum possible length. |  |
|  | b. Descriptions of where and when data are used in various ways (entered, retrieved, deleted, and updated, including typical frequencies of these events). |  |
|  | c. All of the others. |  |
|  | d. All base relations, including estimates for the range of the number of rows in each table. |  |

Question 34

Marks: 1

Most Data Manipulation Languages lacked computational completeness. To overcome this problem and to provide additional flexibility, the SQL standard be extended and allows SQL statements can be embedded in a high-level Third-generation programming language. However, this approach produces a( n ) \_\_\_\_\_\_\_\_ because of mixing between different programming paradigms. This is a weakness of relational model.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. type mismatch |  |
|  | b. invalid type |  |
|  | c. impedance mismatch |  |
|  | d. semantically overloaded |  |

Question 35

Marks: 1

Object-Relational DBMS, by using ***row type***, we can represent for a \_\_\_\_\_\_\_\_ attribute directly

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. composite |  |
|  | b. simple |  |
|  | c. all of the others |  |
|  | d. derived |  |

Question 36

Marks: 1

When an ER diagram are transformed into relations. For each one-to-many (1:\*) binary relationship type, one relation is created for each of the two entity types participating in the relationship. The \_\_\_\_\_\_ attribute of the entity on the one-side of the relationship becomes a \_\_\_\_\_\_ in the relation on the many-side of the relationship

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. primary key ... foreign key |  |
|  | b. primary key ... primary key |  |
|  | c. foreign key ... primary key |  |
|  | d. primary key ... unique key |  |

Question 37

Marks: 1

To convert ER data model to relational data model. For each many-to-many (\*:\*) binary relationship, we create a relation to represent the relationship and post a copy of the \_\_\_\_\_\_\_\_ attribute(s) of the entities that participate in the relationship into this relation, to act as \_\_\_\_\_\_\_\_.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. primary key ... foreign keys |  |
|  | b. primary key ... alternate key |  |
|  | c. primary key ... unique key |  |
|  | d. foreign keys ... primary key |  |

Question 38

Marks: 1

Which of following transformation rules is NOT correct ?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. πA1, A2,..., An (σ p(R)) = σ p (πA1, A2,..., An (R)) , where the selection predicate p involves only the attributes A1, A2,..., An |  |
|  | b. σp (σq (R)) = σq (σp (R)) |  |
|  | c. σ p ⋎ q ⋎ r (R) = σp (σq (σr (R))) |  |
|  | d. None of the others. |  |

Question 39

Marks: 1

In entity-relationship diagram, the multiplicity identifies \_\_\_\_\_\_\_\_

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. None of the others |  |
|  | b. the number of key atributes of a entity. |  |
|  | c. the number of participating entity type in a relationship. |  |
|  | d. the number of possible occurrences of an entity type in a relationship. |  |

Question 40

Marks: 1

Which of following statement is not correct ?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. A subtype (subclass) is a subgrouping of the entities in an entity type that is meaningful to the organization. |  |
|  | b. A supertype (superclass) is a generic entity type that has a relationship with one or more subtypes (subclasses). |  |
|  | c. The specialization is a process of defining one or more superclasses of the subclass, and forming the relationships between the superclasses and subclasses. |  |
|  | d. All of the others. |  |

Question 41

Marks: 1

Select INCORRECT meaning about the objective of ***local-autonomy feature* in the Date's twelve rules for a distributed DBMS**

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. local data is locally owned and managed |  |
|  | b. none of the others. |  |
|  | c. all operations at a given site are controlled by the centralized site |  |
|  | d. local operations remain purely local |  |

Question 42

Marks: 1

In an entity-relationship model, all Library Item is separated into one of Book, Journal and Digital-Video entity types. What are participation and disjoint constraints between Library Item generalization entity and its specialization entities (i.e Book, Journal, Digital-Video) ?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. mandatory (total participation) and nondisjoint (overlapping) |  |
|  | b. optional (partial participation) and nodisjoint (overlapping) |  |
|  | c. mandatory (total participation) and disjoint |  |
|  | d. optional (partial participation) and disjoint |  |

Question 43

Marks: 1

Select incorrect statement

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. None of the others. |  |
|  | b. Vertical fragment can be defined by using projection operation of relational algebra. |  |
|  | c. Mixed fragment can be defined by using selection and projection operations of relational algebra. |  |
|  | d. Horizontal fragment can be defined by using selection operation of relational algebra. |  |

Question 44

Marks: 1

A nested relation can be represented in Object-Relational DBMS by using \_\_\_\_\_\_\_\_

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Recusion |  |
|  | b. UDT (User-Defined Type) |  |
|  | c. All of the others (row types :UDT, UDR, recusion) |  |
|  | d. UDR (User-Defined Routine) |  |

Question 45

Marks: 1

Which of the following is not a object-oriented feature that being added in ORDBMS ?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. interface |  |
|  | b. polymorphism |  |
|  | c. inheritance |  |
|  | d. encapsulation |  |

Question 46

Marks: 1

The inputs of physical database design are the logical data model and the \_\_\_\_\_\_\_. The outputs are the \_\_\_\_\_\_, integrity rules, file organization specified, secondary indexes determined, user views and access rules

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. data dictionary ... general constraints |  |
|  | b. business logic ... data dictionary |  |
|  | c. business logic ... base relations |  |
|  | d. data dictionary ... base relations |  |

Question 47

Marks: 1

Four layers of a distributed query optimization are: ***query decomposition*, *data localization*, *global optimization* and *\_\_\_\_\_\_\_\_\_***

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. After a participant has voted to commit a transaction, it can cannot go ahead and commit the transaction. |  |
|  | b. Local optimization |  |
|  | c. All of the others. |  |
|  | d. After a participant has voted to commit a transaction, the participant may be blocked if it does not receive the global decision |  |

Question 48

Marks: 1

When an ER diagram are transformed into relations. For each multi-valued attribute in an entity, create a new relation to represent the multi-valued attribute and include the \_\_\_\_\_\_\_ of the entity in the new relation, to act as a foreign key. The primary key of this new relation consists of two attributes: the primary key of the original relation, plus the \_\_\_\_\_\_ attribute itself.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. primary key ... foreign key |  |
|  | b. primary key ... unique key |  |
|  | c. primary key ... multi-valued |  |
|  | d. multi-valued ... foreign key |  |

Question 49

Marks: 1

Select correct statement

Choose one answer. (?? Cau nao cung sai)

|  |  |  |
| --- | --- | --- |
|  | a. A distributed database is also a data warehouse. |  |
|  | b. A distributed database is a collection of multiple, logically interrelated databases distributed over a computer network. |  |
|  | c. A distributed DBMS is a DBMS running across multiple processors and disks that is designed to execute operations in parallel whenever possible. (parallel DBMS) |  |
|  | d. All of the others |  |

Question 50

Marks: 1

Given the relations below:   
Student(StudentID, StudentName, CampusAddress, GPA)   
Registration(StudentID, CourseID, Grade)   
  
Support that the following is a typical query against these relations   
  
SELECT Student.StudentID, StudentName, CourseID, Grade   
FROM Student, Registration   
WHERE Student.StudentID AND Registration.StudentID AND GPA > 3.0   
ORDER BY StudentName;   
  
On what attributes should not indexes be defined to speed up this query?

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. StudentID of the Student relation |  |
|  | b. None of the others |  |
|  | c. GPA, StudentName of the Student relation |  |
|  | d. CampusAddress |  |