BRAINWARE UNIVERSITY
Term End Examination 2020 - 21
Programme – Master of Technology in Computer Science & Engineering
Course Name – Advanced DBMS
Course Code - PCC-MCS102
Semester / Year - Semester I

Time allotted : 75 Minutes   Full Marks : 60

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)   1 x 60=60

1.   *(Answer any Sixty)*

(i) Data Dictionary stores :

a) Meta-data about the structure of the database

b) All possible SQL queries

c) Raw data of tables value

d) None of these

(ii) Which of the following is a component of a distributed database system?

a) Server

b) Client

c) Network

d) All of these

(iii) Which of the following is increased with redundant data in distributed database system?

a) Reliability

b) Availability

c) Inconsistency

d) All of these   ….

(iv) Data about data is called :

a) Data catalog

b) Metadata

c) Information

d) All of these

(v) Vertical Fragmentation is a set of sub-relations each of which have a subset of

a) Attributes

b) Tuples

c) Both   d) None of these

(vi) Which of the following is not one of the stages in the evolution of distributed DBMS?

a) Unit of work   b) Remote unit of work

c) Distributed request   d) Distributed unit of Work

(vii) Which of the following statement is true?

a) Horizontal fragmentation is subset of tuples

b) Vertical fragmentation is subset of attributes

c) Mixed fragmentation is subset of a combination of tuples and attributes

d) All of these

(viii) A semi-join is which of the following?

a) Only the joining attributes are sent from one site to another and then all of the rows are returned.

b) All of the attributes are sent from one site to another and then only the required rows are returned.

c) Only the joining attributes are sent from one site to another and then only the required rows are returned.

d) All of the attributes are sent from one site to another and then only the required rows are returned.

(ix) A homogenous distributed database is which of the following?

a) The same DBMS is used at each location and data are not distributed across all nodes….

b) The same DBMS is used at each location and data are distributed across all nodes.

c) A different DBMS is used at each location and data are not distributed across all nodes.

d) A different DBMS is used at each location and data are distributed across all nodes.

(x) A distributed database has which of the following advantages over a centralized database?

a) Software cost   b) Software complexity

c) Slow Response   d) Modular growth

(xi) A heterogeneous distributed database is which of the following?

a) The same DBMS is used at each location and data are not distributed across all nodes....

b) The same DBMS is used at each location and data are distributed across all nodes..>

c) A different DBMS is used at each location and data are not distributed across all nodes.

d) A different DBMS is used at each location and data are distributed across all nodes.

(xii) If the state of the database no longer reflects a real state of the world that the database is supposed to capture, then such a state is called

a) Consistent state

b) Parallel state

c) Durable state

d) Inconsistent state

(xiii) The completeness constraint may be one of the following: Total generalization or specialization, Partial generalization or specialization. Which is the default?

a) Total

b) Partial

c) Should be specified

d) Cannot be determined

(xiv) Functional dependencies are a generalization of

a) Key dependencies

b) Relation dependencies

c) Database dependencies

d) None of the mentioned

(xv) Which forms simplifies and ensures that there are minimal data aggregates and repetitive groups:

a) 1NF

b) 2NF

c) 3NF

d) All of the mentioned

(xvi) Which forms has a relation that possesses data about an individual entity:

a) 2NF.

b) 5NF.

c) 3NF.

d) 4NF.

(xvii) We can use the following three rules to find logically implied functional dependencies. This collection of rules is called:-

    a) Axioms   b) Armstrong's axioms

    c) Armstrong   d) Closure

(xviii) Which of the following is not Armstrong's Axiom?

    a) Reflexivity rule   b) Transitivity rule

    c) Pseudo-transitivity rule   d) Augmentation rule

(xix) The normal form which satisfies multivalued dependencies and which is in BCNF is

    a) 4 NF…   b) 3 NF….

    c) 2 NF…..   d) All of the mentioned

(xx) To construct common data model in heterogeneous distributed DBMS, which type of conflicts may arise?

    a) Name conflicts   b) Structural conflicts

    c) Scale conflicts   d) All of these

(xxi) Which of the following operations is used to reconstruct the global relation from its horizontal fragments?

    a) Join   b) Cartesian product

    c) Union   d) Intersection

(xxii) Location transparency allows for which of the following?

    a) Users to treat the data as if it is at one location   b) Programmers to treat the data as if it is at one location

    c) Managers to treat the data as if it is at one location   d) All of these

(xxiii) The relationship between DEPARTMENT and EMPLOYEE is a

a) One-to-one relationship

b) One-to-many relationship

c) Many-to-many relationship

d) Many-to-one relationship

(xxiv) Which of the following terms does refer to the correctness and completeness of the data in a database?

a) Data security

b) Data constraint

c) Data integrity

d) Data independence

(xxv) In SQL, which command is used to issue multiple CREATE TABLE, CREATE VIEW and GRANT statements in a single transaction?

a) CREATE PACKAGE

b) CREATE SCHEMA

c) CREATE CLUSTER

d) All of the mentioned

(xxvi) Which character function can be used to return a specified portion of a character string?

a) INSTR

b) SUBSTRING

c) SUBSTR

d) POS

(xxvii) Which of the following is TRUE for the System Variable $date$?

a) Can be assigned to a global variable

b) Can be assigned to any field only during design time

c) Can be assigned to any variable or field during run time

d) Can be assigned to a local variable

(xxviii) Which is the subset of SQL commands used to manipulate Oracle Database Structures, including tables?

a) Data Definition Language

b) Data Manipulation Language

c) Data Described Language

d) Data Retrieval Language

(xxix) _____ provides option for entering SQL queries as execution time, rather than at the development stage.

a) PL/SQL

b) SQL*Plus

c) SQL

d) Dynamic SQL

(xxx) Entity is a _____ ....

a) Object of relation

b) Present working model

c) Thing in real world

d) Model of relation

(xxxi) The descriptive property possessed by each entity set is _____

a) Entity

b) Attribute

c) Relation

d) Model

(xxxii) The attribute name could be structured as an attribute consisting of first name, middle initial, and last name. This type of attribute is called

a) Simple attribute

b) Composite attribute..

c) Multivalued attribute

d) Derived attribute

(xxxiii) Which of the following is a single valued attribute...>

a) Register_number

b) Address

c) SUBJECT_TAKEN

d) Reference

(xxxiv) Which of the following gives a logical structure of the database graphically?

a) Entity-relationship diagram

b) Entity diagram

c) Database diagram

d) Architectural representation

(xxxv) The entity relationship set is represented in E-R diagram as

a) Double diamonds

b) Undivided rectangles

c) Dashed lines

d) Diamond.

(xxxvi) An entity set that does not have sufficient attributes to form a primary key is termed a _____.

a) Strong entity set

b) Variant set

c) Weak entity set..   d) Variable set

(xxxvii) Weak entity set is represented as::-
    a) Underline   b) Double line
    c) Double diamond   d) Double rectangle

(xxxviii) The entity set person is classified as student and employee. This process is called _____..
    a) Generalization   b) Specialization
    c) Inheritance   d) Constraint generalization

(xxxix) The refinement from an initial entity set into successive levels of entity subgroupings represents a _____ design process in which distinctions are made explicit.
    a) Hierarchy   b) Bottom-up
    c) Top-down   d) Radical

(xl) If an entity set is a lower-level entity set in more than one ISA relationship, then the entity set has
    a) Hierarchy   b) Multilevel inheritance
    c) Single inheritance   d) Multiple inheritance

(xli) Two-phase commitment protocol is used for ::
    a) Concurrency control   b) Integrity control
    c) Recovery   d) Redundancy

(xlii) Commit and rollback are related to ....
    a) Data integrity   b) Data consistency
    c) Data sharing   d) Data security

(xliii) For committing a transaction, the DBMS might discard all the records

a) after image

b) before image

c) log

d) redo log

(xliv) In ...., each transaction there is a first phase during which new lock are acquired.

a) Shrinking Phase

b) Release phase

c) Commit phase

d) Growing Phase

(xlv) The transactions are always .... if it always locks a data item in shared mode before reading it.

a) well formed

b) well distributed

c) well locked

d) well shared

(xlvi) The ORDER concurrency control technique is based on the property.

a) ordering mechanism

b) inherent ordering

c) total ordering

d) partial ordering

(xlvii) The ....is responsible for ensuring correct execution in the presence of failures.

a) Database Manager

b) Transaction Manager

c) Recovery Manager

d) Executive Manager

(xlviii) The distributed transaction can be completely read-only and the transaction is started with a .... READ ONLY statement.

a) Distributed Transactions

b) Transaction

c) Set Transaction

d) Read transaction

(xlix) Which of the following is true concerning a global transaction?

a) The required data are at one local site and the distributed DBMS routes requests as necessary.

b) The required data are located in at least one nonlocal site and the distributed DBMS routes requests as necessary.

c) The required data are at one local site

d) The required data are located in at least

and the distributed DBMS passes the request to only the local DBMS.

one nonlocal site and the distributed DBMS passes the request to only the local DBMS.

(l) A deadlock exists in the system if and only if the wait-for graph contains a _____...

a) Cycle
b) Direction
c) Bi-direction
d) Rotation

(li) Storing a separate copy of the database at multiple locations is which of the following?

a) Data Replication
b) Horizontal Partitioning
c) Vertical Partitioning
d) Horizontal and Vertical Partitioning

(lii) A transaction is delimited by statements (or function calls) of the form _____

a) Begin transaction and end transaction
b) Start transaction and stop transaction
c) Get transaction and post transaction
d) Read transaction and write transaction

(liii) Identify the characteristics of transactions

a) Atomicity
b) Durability
c) Isolation
d) All of the mentioned

(liv) The property of a transaction that persists all the crashes is

a) Atomicity
b) Durability
c) Isolation
d) All of the mentioned

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

a) Consistency
b) Atomicity
c) Durability
d) Isolation

(lvi) Which of the following are introduced to reduce the overheads caused by the log-based recovery?

a) Checkpoints

b) Indices

c) Deadlocks

d) Locks

(lvii) If transaction Ti gets an explicit lock on the file Fc in exclusive mode, then it has an _____ on all the records belonging to that file.

a) Explicit lock in exclusive mode

b) Implicit lock in shared mode

c) Explicit lock in shared mode

d) Implicit lock in exclusive mode

(lviii) Which refers to a property of computer to run several operations simultaneously and possible as computers await response of each other:

a) Concurrency

b) Deadlock

c) Backup

d) Recovery

(lix) The _____ lock allows concurrent transactions to access the same row as long as they require the use of different fields within that row.

a) Table-level

b) Page-level

c) Row-level

d) Field-level

(lx) _____ rollback requires the system to maintain additional information about the state of all the running transactions….

a) Total

b) Partial

c) Time

d) Commit