Seat No.

Final Year B.Tech. (Computer Science & Engineering) (Part - IV) (Semester - VII) (CBCS) Examination, January - 2023
ADVANCED DATABASE SYSTEMS
Sub. Code : 83858

Day and Date : Wednesday, 11 - 01 - 2023   **Total Marks : 70**
Time : 10.30 a.m. to 1.00 p.m.

Instructions :   1)   **All questions are compulsory.**
                      2)   **Assume suitable data whenever necessary.**

Q1) Solve all MCQ's of following: (1 marks each)

a) When a participating site S_1 decides to commit the transaction T upon receiving the <prepare T> message from the coordinator, it sends _____ message to the coordinator site.

   i)   <prepare T>   ii)   <commit T>

   iii)   <ready T>   iv)   <abort T>

b) A heterogeneous distributed database is which of the following?

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

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

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

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

c) Which of the following parallel database architecture is mainly used by distributed database system?

   i)   Shared Memory   ii)   Shared Disk

   iii)   Shared Nothing   iv)   Hierarchical

P.T.O.

d) _____ refers to the execution of a single query in parallel on multiple processors and disks.

   i)   Interquery parallelism   ii)   Intraquery parallelism

   iii)   Interdependent parallelism   iv)   None of the above

e) A semijoin is which of the following?

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

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

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

   iv)   None of the above

f) What is the difference between PL/SQL Function and PL/SQL Procedure?

   i)   PL/SQL function may or may not return the value whereas PL/SQL Procedure must have to return the value.

   ii)   PL/SQL Procedure may or may not return the value whereas PL/SQL Function must have to return the value.

   iii)   PL/SQL Function may or may not return the function whereas PL/SQL Procedure must have to return the function.

   iv)   None of the above

g) How many types of PL/SQL Cursor are there?

   i)   1   ii)   2

   iii)   3   iv)   4

h) _____ is a popular, open-source, sorted ordered column-family store that is modeled on the ideas proposed by Google's Bigtable.

   i)   HBase   ii)   Hypertable

   iii)   Cloudata   iv)   None of the above

i) _____ has properties of both Google Bigtable and Amazon Dynamo.

    i)   Voldemort   ii)   Cassendra

    iii)   Riak   iv)   None of the above

j) What kind of database MongoDB is?

    i)   Graph Oriented   ii)   Document Oriented

    iii)   Key Value Pair   iv)   Column Based

k) _id in MongoDB is a _____ bytes hexadecimal number which assures the uniqueness of every document.

    i)   12   ii)   13

    iii)   14   iv)   None of the above

l) Poor data administration can lead to which of the following?

    i)   A single definition of the same data entity & Missing data elements

    ii)   Familarity with existing data

    iii)   All (i), (ii), (iv)

    iv)   Missing data elements

m) Point out the wrong statement.

    i)   BI is a category of database software that provides an interface to help users quickly and interactively scrutinize the results in a variety of dimensions of the data & Data is factual information for analysis

    ii)   BI is a category of database software that provides an interface to help users quickly and interactively scrutinize the results in a variety of dimensions of the data

    iii)   Customer relationship management (CRM) entails all aspects of interaction that a company has with its customer

    iv)   None of the mentioned

n) Which of the following does not form part of BI Stack in SQL Server?

    i)   OIBEE   ii)   OSSIS

    iii)   OBSAS   iv)   OBIEE

Q2) Solve any two of following: (7 Marks each)

a) What are parallel systems? Explain parallel database architectures in detail with diagrams.

b) What is stored procedure in PL/SQL? Give its advantages. Explain in detail, syntax to create stored procedure in PL/SQL.

c) What is NoSQL? Explain types of NoSQL databases in detail.

Q3) Solve any two of following: (7 Marks each)

a) Explain two phase commit (2PC) protocol in brief. Also explain how 2PC protocol handles failure of a participating site and failure of a coordinator.

b) Describe oracle sequence. Explain sequence in Oracle with syntax and example.

c) What is CouchDB? Give difference between MongoDB and CouchDB.

Q4) Solve any two of following: (7 Marks each)

a) Explain data-information in decision making cycle.

b) What is FireBase?

c) Differentiate Univariate analysis & Bivariate analysis.

Q5) Solve any two of following: (7 Marks each)

a) What are the desired DBA skills?

b) What is Business Intelligence? Explain in brief.

c) What is mathematical model? Explain different classes of model.

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