Total No. of Questions : 6]

SEAT No. : [ ]

P4019

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[5155] - 267
M.E. (Computer Engineering)
HIGH PERFORMANCE DATABASES
(2013 Pattern)

Time : 3 Hours] ***[Max. Marks : 50***

Instructions to the candidates :

1) ***All six questions are compulsory.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Assume suitable data, if necessary.***

Q1) a) What are the choices in tuning the conceptual schema? What are the technique and when should we apply them; settling for a weaker normal form, de-normalization and horizontal and vertical decomposition **[4]**

b) Why do we have standardized database benchmarks, and what common Metrics are used to evaluate database system? Describe a few popular Database benchmarks. **[4]**

Q2) a) Discuss design issues of Distributed Databases Framework. **[4]**

b) Explain translation of global queries to fragment queries for distributed databases. **[4]**

Q3) a) Why was the TPC-D benchmark replaced by the TPC-H and TPC-R benchmarks? **[4]**

b) Write a short note on (Any One)

i) Long Duration Transaction

ii) Main Memory Database

[4]

Q4) a) Write XML representation of the following nested-relational schema **[5]**

Emp = (ename, ChildrenSet setof(Children), SkillsSet setof(Skills))
Children = (name, Birthday)
Birthday — (dat, month, year)
Skills — (type, ExamsSet setof(Exams))
Exams = (year, city)

P.T.O.

Write following queries in XQuery

i) Find the names of all employees who have a child who has a birthday in March.

ii) Find those employees who took an examination for the skill type "typing" in the city "Dayton"

b) Explain XSLT with with suitable example. **[3]**

Q5) a) Analysis and Design the requirements for any Mobile Database application which consist of semi structured and unstructured data using any standard Mobile Database. **[5]**

b) Explain Temporal Database with suitable example. **[4]**

Q6) a) Design fully Distributed Hadoop framework for large scale data management and analytics with suitable business application. **[5]**

b) Write a short note on (any one) : **[4]**

i) COUCHDB.

ii) Maps Reduce

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