

P4861

[Total No. of Pages : 2

[5060] - 802
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) Define database tuning. Explain important decisions to be made during physical database design and database tuning. **[4]**

b) Explain Clustering for Index selection with suitable example. **[4]**

Q2) a) Explain different concurrency control mechanism for distributed database transactions. **[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) Explain a model for distributed query optimization with suitable example. **[4]**

Q4) a) Consider following XML file. **[4]**

P.T.O.

```

<?xml version="1.0" encoding="UTF-8"?>
<bookstore>

<book category="COOKING">
  <title lang="en">Everyday Italian</title>
  <author>Giada De Laurentiis</author>
  <year>2005</year>
  <price>30.00</price>
</book>

<book category="CHILDREN">
  <title lang="en">Harry Potter</title>
  <author>J K. Rowling</author>
  <year>2005</year>
  <price>29.99</price>
</book>

```

```

<book category="WEB">
  <title lang="en">XQuery Kick Start</title>
  <author>James McGovern</author>
  <author>Per Bothner</author>
  <author>Kurt Cagle</author>
  <author>James Linn</author>
  <author>Vaidyanathan Nagarajan</author>
  <year>2003</year>
  <price>49.99</price>
</book>

<book category="WEB">
  <title lang="en">Learning XML</title>
  <author>Erik T. Ray</author>
  <year>2003</year>
  <price>39.95</price>
</book>
</bookstore>

```

Solve following XQuery using FLWOR expression

- i) Select all the title elements under the book elements that are under the bookstore element that have a price element with a value that is higher than 30.
 - ii) Select all the title elements under the book elements that are under the bookstore element, and return the title elements in alphabetical order.
- b) Consider XML file given in Q4 (a). Write DTD and XML Schemas for XML file given in Q4 (a). [4]
- 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 Multimedia Databases 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) Job Tracker and Task Tracker
 - ii) Legacy Systems.

▽▽▽▽