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**Question Paper Code : 13294**

M.E./M.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2014.

Second Semester

Computer Science and Engineering

CP 7202 — ADVANCED DATABASES

(Common to M.E. Computer Science and Engineering (with specialization in networks) and M.Tech. Information Technology)

(Regulation 2013)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Execution of a single query can be parallelized in two ways. What are they?
2. Define ACID in transaction processing.
3. Write the types of fragmentation.
4. What is operator polymorphism?
5. Define the term 'persistence' in Object based database.
6. List the types of spatial queries.
7. Define Handoff in mobile database.
8. Mention the components of deductive database.
9. List the goals of data mining.
10. List the merits of Web database.

PART B — (5 × 16 = 80 marks)

11. (a) (i) What factors could result in skew when a relation is partitioned on one of its attributes by: (8)

- (1) Hash partitioning  
 (2) Range partitioning.

In each case, what can be done to reduce the skew?

- (ii) Write short notes parallel database and distributed data bases. (8)

Or

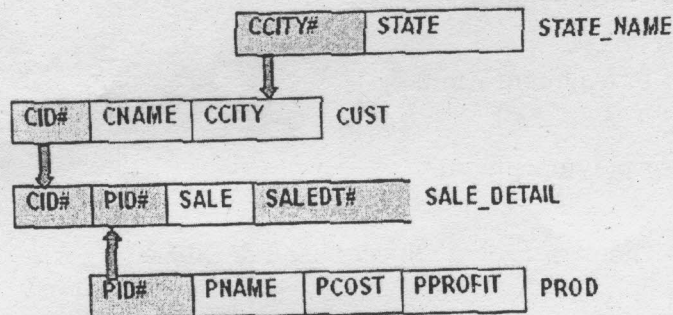
- (b) Explain the various ways in which concurrency control can be implemented in a Database. Draw the schematic diagram for two-phase locking system. (16)

12. (a) Explain about the mandatory features of OODBMS and illustrate the syntax of OQL. (16)

Or

- (b) (i) Write the differences and similarities between class and interface inheritance. (8)

- (ii) Represent the following Schema diagram in ODL. How do you iterate through all the persistent classes? (8)



13. (a) (i) Explain the various spatial access methods and data structure of spatial database. (8)

- (ii) Write a short note on Spatial data types and relationships. (8)

Or

- (b) Explain about temporal database and TSQL2. (16)

14. (a) Explain about mobile database, location and handoff management in detail. (16)

Or

- (b) (i) Compare Online Transaction Processing (OLTP) with Online Analytical Processing (OLAP). (8)
- (ii) What is the difference between classification and association in the context of data mining? (8)

15. (a) Consider the following DTD

```
<! DOCTYPE bibliography [
```

```
<! ELEMENT book (title, author+, year, publisher, place?)>
```

```
<! ELEMENT article (title, author +, journal, year, number, volume, pages?)>
```

```
<! ELEMENT title (# PCDATA) >
```

```
... similar PCDATA declarations for
```

```
year, publisher, place, journal, year, number, volume, pages, lastname, firstname)] >
```

- (i) Show how to map this DTD to a relational schema.

- (ii) Create a XML document for this DTD. (16)

Or

- (b) Write a short notes for the following.

- (i) Cloud database (8)

- (ii) Big data analysis. (8)