

Total No. of Questions : 10]

**P3139**

SEAT No. :

[Total No. of Pages : 2

**[5154]-705**

**B.E. (Information Technology)**  
**ADVANCED DATABASES**  
**(2012 Course) (Semester-II)**

*Time : 2½ Hours]*

*[Max. Marks : 70*

**Instructions to the candidates:**

- 1) Answer Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8, Q9 or Q10.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right indicate full marks.
- 4) Assume suitable data if necessary.

**Q1) a)** Explain fragmentation in distributed databases. **[6]**

b) Write short note on Distributed Query Processing. **[4]**

OR

**Q2) a)** Explain various system parameters of parallel databases. **[5]**

b) Comparison between object relational and object oriented database. **[5]**

**Q3) a)** Give the DTD for an XML representation of the following nested relational schema. **[6]**

Emp = (ename, ChildrenSet set of (Children), SkillSet Set of (Skills))

Children = (name, Birthday)

Birthday = (day, month, year)

Skills = (type, Examset set of (Exams))

Exam = (year, city)

Use the DTD and write the following queries in Xqueries format.

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".

iii) List all skill types in Emp.

b) Explain various operations performed by DynamoDB in detail. **[4]**

OR

**P.T.O.**

- Q4)** a) What is Cassandra Query Language? Explain in detail. [5]  
b) What does column based Key-Value mean when talking about Cassandra vs DynamoDB? [5]

- Q5)** a) How stream data management system works? Explain its issues and solutions. [8]  
b) What is Graph Mining? Also explain its advantages & applications. [8]

OR

- Q6)** a) What are the models of social network generation? Explain in detail. [8]  
b) Write a short note on Apache Flume NG. [8]

- Q7)** a) Explain Naive Bayes classification for text categorization with example. [6]  
b) Explain concept of data modeling for web usage mining. [6]  
c) Explain concept of collaborative filtering using KNN. [6]

OR

- Q8)** a) Explain recommender systems. Which are the problems associated with it? [6]  
b) Describe matrix factorization in detail. [6]  
c) How navigational and sequential patterns are analyzed. [6]

- Q9)** a) Write short note on [8]  
i) Spatial databases.  
ii) Temporal databases.  
b) Explain Query Processing in Deductive database in detail. Explain SQL & Datalog Query Processing. [8]

OR

- Q10)** a) Explain cloud database in detail. Also explain the advantages and disadvantages of cloud databases. [8]  
b) What is semantics? Explain semantics in deductive database in detail. [8]

