

Total No. of Questions :10]

SEAT No. :

P3645

[4959]-1135

[Total No. of Pages :3

B.E. (Information Technology)

ADVANCED DATABASES

(2012 Pattern) (End Semester) (Semester - II) (414462)

Time : 2½ Hours]

[Max. Marks :70

Instructions to the candidates:

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

- Q1)** a) Explain difference between homogeneous and heterogeneous databases. **[4]**
- b) Describe query optimization with respective parallel database system. **[6]**

OR

- Q2)** a) Comparison between object relational and object oriented database system. **[4]**
- b) Write the following queries in XQuery, assuming the below DTD. **[6]**

```
<!DOCTYPE db [  
<!ELEMENT emp (ename, children*, skills*)>  
<!ELEMENT children (name ,birthday)>  
<!ELEMENT birthday (day, month, year)>  
<!ELEMENT skills (type, exams+)>  
<!ELEMENT exams (year, city)>  
<!ELEMENT ename( #PCDATA)>  
<!ELEMENT name( #PCDATA)>  
<!ELEMENT day( #PCDATA)>  
<!ELEMENT month( #PCDATA)>  
<!ELEMENT year( #PCDATA)>  
<!ELEMENT type( #PCDATA)>  
<!ELEMENT city( #PCDATA)>]>
```

P.T.O.

- 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.

- Q3)** a) Explain Cassandra architecture in detail. [5]
b) Explain CAP Theorem in detail. [5]

OR

- Q4)** a) Explain LDAP. (Light Weight Directory Access Protocol) [5]
b) How to improve data access with secondary indexes in dynamodb. [5]

- Q5)** a) What is a stream data management system explain its issue and solutions. [10]
b) Explain Social Network Analysis. [6]

OR

- Q6)** a) Explain the algorithm for apriori-based frequent substructure mining?[8]
b) What is a graph database? Why it is important? State the application of graph mining? [8]

- Q7)** a) What is web mining? Explain taxonomy of web mining? [8]
b) Explain Text categorization methods in detail. [8]

OR

- Q8)** a) Describe collaborative filtering: Matrix Factorization in detail. [8]
b) Describe k-nearest neighbour (KNN) method in detail. [8]

- Q9)** a) Explain cloud database in detail? Also explain advantages and limitations of cloud databases? [8]
b) Explain safe data log programmers in deductive database in detail. [6]
c) Explain Query Evolution in Deductive Database in detail. [4]

OR

- Q10)** a) Write a short note on (any two). [16]
i) Multimedia databases.
ii) Cloud databases.
iii) Spatial databases.
iv) Temporal databases.
- b) What is a deductive database system? [2]

