

Total No. of Questions : 12]

SEAT No. :

**P1815**

**[4859]-218**

[Total No. of Pages :4

**B.E. (Computer Engineering)  
d-ADVANCED DATABASES  
(2008 Course) (Elective-III) (Semester-II)**

*Time : 3 Hours]*

*[Max. Marks :100*

*Instructions to the candidates:*

- 1) *Answer 3 questions from Section I and 3 questions from Section II.*
- 2) *Answers to the two sections should be written in separate books.*
- 3) *Neat diagrams must be drawn wherever necessary.*
- 4) *Figures to the right indicate full marks.*
- 5) *Assume suitable data, if necessary.*

**SECTION-I**

**Q1) a)** What are the different partitioning technique? Give an example of query for which that partitioning technique would provide the fastest response. [8]

b) What factors could result in skew when a relation is partitioned on one of its attribute by. [8]

i) Hash partitioning.

ii) Range partitioning

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

OR

**Q2) a)** What is parallelism? Explain the interquery & Intraquery parallelism. [8]

b) Explain partitioned parallel hash join. [8]

**Q3) a)** What are the different approaches for high availability in the distributed system. [8]

b) Explain the methods of data storage in distributed system. [8]

OR

**P.T.O.**

**Q4) a)** Discuss different kinds of failure in the distributed system and how to handle it? [8]

b) What are transparency in the distributed system? Discuss the relative advantages of centralized & distributed databases. [8]

**Q5) a)** Why do we have the XML DTD? What is well- formed documents? Explain with an example. [10]

b) Why do we need to maintain state at the middle tier? What are cookies and how does a browser handle the cookies? [8]

OR

**Q6)** Write short note on the following. [18]

a) XQUERY.

b) XPATH

c) Thin & Thick Client

d) 3 tier architecture.

### **SECTION-II**

**Q7) a)** Explain multidimensional data models in details. [8]

b) Explain the following [8]

i) OLAP

ii) Data Cube.

OR

**Q8) a)** Explain CUBE and ROLL-UP extended aggregation with suitable example. [8]

b) Explain the architecture of data warehouse and also explain different indexing technique used in data warehouse. [8]

- Q9)** a) What are different data cleaning methods? Explain binning & outlier analysis. [6]
- b) State and explain K-MEANS algorithm for clustering. [6]
- c) Consider the following data set. [6]

Food Item	Protein Content	Fat Content
F1	1.1	60
F2	8.2	20
F3	4.2	35
F4	1.5	21
F5	7.6	15
F6	2.0	55
F7	3.9	39

Find the cluster for the object in the dataset by using K-means algorithm, if  $k=4$

OR

- Q10)**a) What is Best split? Explain ID3 algorithm to create decision tree. [6]
- b) Explain the following: [6]
- i) Text Mining.
  - ii) GINI Index.
  - iii) Information gain.
- c) Find the association rule for the given dataset which satisfy following requirements. [6]
- i) Support =30%

ii) Confidence=90%

Customer		Products		
C1	S1		S3	
C2		S2		
C3				S4
C4		S2	S3	S4
C5		S2	S3	
C6		S2	S3	
C7	S1	S2	S3	S4
C8	S1		S3	
C9	S1	S2	S3	
C10	S1	S2	S3	

**Q11)a)** What you mean by relevance ranking? Explain different methods of relevance ranking for the boolean & ranked query. [8]

b) Explain the following: [8]

- i) Inverted Index
- ii) Ontologies
- iii) Stop words

OR

**Q12)a)** What is page ranking and popularity ranking? Explain in brief. [6]

b) Explain the following terms. [10]

- i) Web crawlers.
- ii) Homonyms.
- iii) Vector space model.
- iv) Zipfian distribution.

