Total No. of Questions :8]

SEAT No. :

P4453

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M.E (Computer Engg./ Computer (Computer Networks))
HIGH PERFORMANCE DATABASE SYSTEMS
(2008 Course) (Semester - II) (510109 & 510309)

Time : 3 Hours] *[Max. Marks : 100*

Instructions to the candidates:

1) ***Answer any three questions from each Section.***
2) ***Answer to each Section should be written in separate answer-books.***
3) ***Figures to the right indicate full marks.***
4) ***Assume suitable data, if necessary.***

SECTION-I

Q1) a) Explain TPC monitor with different architectures. **[6]**

b) Describe the heuristic processing strategies for query optimization. **[6]**

c) What are the important factors that influence physical database design? **[6]**

Q2) a) Explain two pessimistic & two optimistic locking protocols in Database transaction management. **[12]**

b) Explain Object Oriented Database Benchmarks. **[4]**

Q3) a) Explain different transaction models. **[8]**

b) Explain three phase protocol and how the three phase commit protocol is a non blocking protocol. **[8]**

Q4) a) Consider following schema

Property (propertyno, city) 10,000 records stored in London.

Client (clientno, maxprice) 1,00,000 records stored in Glasgow.

Viewing (propertyno, clientno) 10,00,000 records stored in London.

To list property in XYZ those have been viewed by clients who have a maximum price limit greater than 20,00,000.

P.T.O.

Query is

select p.propertyno gtom property p inner join (client c inner join viewing v on c. clientno = v. clientno) on p.propertyno = v. propertyno where p.city = 'XYZ' and c.maxprice > 20,00,000;

Suggest any two strategies for performing query processing. **[8]**

b) Discuss different methods of Multi-attribute indexing. **[8]**

SECTION-II

Q5) a) Consider the following set of transactions:

T01 {X,Z}	T02 {U,X,Y,Z}
T03 {U,V,W,Y}	T04 {V,X,Z}
T05 {U,Y}	T06 {W,X,Y}
T07 {V,Y}	T08 {V,W,X}
T09 {X,Z,U}	T10 {U,V,W,Z}

Compute the support and confidence for each of the following:

i) $V \rightarrow W$ ii) $X \rightarrow Z$ iii) $U \rightarrow Y$ iv) $Z \rightarrow V$ v) $W \rightarrow U$

Assume minimum Support of 40%, calculate the frequent k-itemsets. **[10]**

b) Explain KDD process. **[8]**

Q6) a) Explain with example different data warehouse Schemas. **[10]**

b) Discuss differences in OLTP & data warehouse applications. **[6]**

Q7) a) Write short note on Business Intelligence. **[6]**

b) Compare Active & Deductive databases. **[4]**

c) Explain OR databases. **[6]**

Q8) a) Explain with example SQL Aggregation. **[6]**

b) Explain XML schema representation using DTD. **[4]**

c) Explain Materialized views and its importance in data warehouse. **[6]**