Total No. of Questions : 12]

**P3706**

SEAT No. :

[4961]-53 [Total No. of Pages : 3

# T.Y. M.C.A. (Under Engineering Faculty)

## ADVANCED DATABASES

## (2008 Course)

may-16

*Time : 3 Hours]* *[Max. Marks : 70*

*Instructions to the candidates:*

1) *Answer to the two sections should be written in separate answer books.*
2) *Neat diagrams must be drawn wherever necessary.*
3) *Assume Suitable data if necessary.*

### SECTION - I

*Q1)* a) Describe Binary Search Algorithm for selection operation. [5]

b) How to evaluate expression? Explain pipelined evaluation with suitable example. [6]

OR

*Q2)* a) With suitable diagram explain the basic steps in query processing. [5]

b) Explain the nested loop join algorithm with suitable example. [6]

*Q3)* a) Explain any two parallel database architectures in detail with suitable diagrams. [6]

b) Explain fragmentation and replication with their advantages and disadvantages. [6]

OR

*Q4)* a) Explain pipelined parallelism and independent parallelism with example. [6]

b) What are different types of distributed database systems? Explain advantages and disadvantages of distributed database systems with respect to different applications. [6]

*P.T.O.*

*Q5)* a) Why complex data types are needed? Illustrate with suitable example. **[6]**

b) Explain type and table inheritance with suitable example. **[6]**

OR

*Q6)* a) Illustrate array and nested tables with suitable example. **[6]**

b) What is Persistent programming language? Explain persistence in C++. **[6]**

## SECTION - II

*Q7)* a) What is mean by data preprocessing? Why data need to be preprocessed? Illustrate with an example. **[6]**

b) How data is stored in the multidimensional schemea model. Explain any one multidimensional schema in detail with suitable diagram. **[5]**

OR

*Q8)* a) What is data warehouse? Why it is needed? Give any two applications of data warehouse. **[6]**

b) What are the different OLAP operations? Explain any two OLAP operations with suitable diagram and example. **[5]**

*Q9)* a) A database has four transactions. Let min _sup = 2, min_conf = 60%. Find all frequently occurred items using Apriori algorithm. Find best rules from support and confidence values. **[8]**

| TID | ITEM |
|---|---|
| 10 | Chips, coke, ice cream |
| 20 | Coke, chips |
| 30 | Pizza, ice cream |
| 40 | Pizza, coke, chips |

b) Write a note on outlier analysis. **[4]**

OR

*Q10)*a) What do you mean by clustering? What are different clustering techniques? Explain k-means algorithm for clustering with suitable example. [8]

b) Write a note on decision tree. [4]

*Q11)*a) What is popularity ranking? Explain with suitable. [6]

b) Explain characteristics and architecture of web search engines. [6]

OR

*Q12)*Explain the following terms: [12]

a) Synonym.

b) Term Frequency.

c) Inverse Document Frequency.

d) Precision.

e) Recall.

f) Hub.