

BACHELOR OF TECHNOLOGY (CBCS) (2020 COURSE)
Information Technology
B.Tech.Sem - V :SUMMER : 2023
SUBJECT : ITC-III: ADVANCED DATABASE SYSTEM

Day : Tuesday

Time : 10:00 AM-01:00 PM

Date : 16-05-2023

S-24733-2023

Max. Marks : 60

N.B.

- 1) All questions are **COMPULSORY**.
- 2) Figures to the **RIGHT** indicate **FULL** marks.
- 3) Assume suitable data **WHEREVER** necessary.
- 4) Draw neat labeled diagrams **WHEREVER** necessary.

Q.1 With reference to distributed databases, elaborate the term transparency. Enlist and elaborate the types of transparencies that are favorable for distributed databases. (10)

OR

Q.1 What is fragmentation? Why is fragmentation desirable in distributed databases? Describe the types of fragmentation in distributed databases. (10)

Q.2 What is query decomposition? Why it is needed? Explain query decomposition process in distributed query processing. (10)

OR

Q.2 With an example, elaborate the translation of global queries into fragment queries. (10)

Q.3 Compare inter-operation and intra-operation query parallelism. Explain intra-operation parallelism for any one operation. (10)

OR

Q.3 Can parallelism be achieved in main memory? Justify with the help of a suitable example. (10)

Q.4 What is pessimistic locking? Explain any one mechanism of pessimistic locking with an example. (10)

OR

Q.4 Define deadlock. What are the techniques used for avoiding and handling deadlocks? (10)

Q.5 What is data mining? Why is it used? Elaborate the process of data mining. (10)

OR

Q.5 What are TP monitors? Why are they used? Describe the architecture of TP monitor in detail. (10)

Q.6 What is NoSQL? Justify its need and advantage over SQL. Enlist the types of NoSQL databases. (10)

OR

Q.6 Draw and explain the architecture of MongoDB. (10)
