

BACHELOR OF TECHNOLOGY (CBCS) (2020 COURSE)
B.Tech.Sem - V INFORMATION TECHNOLOGY : WINTER : 2024
SUBJECT: ITC-III: ADVANCED DATABASE SYSTEM

Day : Thursday
Date : 12/12/2024

W-24733-2024

Time : 02:30 PM-05:30 PM
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 What is a distributed database management system? Explain the various component of reference architecture of a distributed database management system with the help of a neat diagram. (10)

OR

Q.1 What is replication and fragmentation in distributed database management system? Compare horizontal and vertical fragmentation in detail. (10)

Q.2 What is query optimization? List and explain the factors governing distributed query optimization. (10)

OR

Q.2 Enlist and elaborate the steps of distributed query processing. (10)

Q.3 List and explain the prominent architectural models for parallel databases. What are the performance evaluation parameters used for the same. (10)

OR

Q.3 What are join queries? Does parallelism affect performance of join queries? Justify with an example. (10)

Q.4 Enlist the concurrency control mechanisms used for distributed transactions. Explain any one of them in detail. (10)

OR

Q.4 What is the role of commit protocol in a distributed transaction? Explain any one commit protocol in detail. (10)

Q.5 What are decision support systems? Elaborate its role and applications in detail. (10)

OR

Q.5 What is OLAP? Enlist and elaborate the various OLAP operations. (10)

Q.6 What is Big data? How does CAP theorem apply to Big Data? (10)

OR

Q.6 Is MongoDB a structured or non structured database? Discuss the features of MongoDB. (10)
