



R20 Regulation

Subject code: 3E6EA

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A' Grade)

B.Tech VI Semester Regular Examinations, June/July 2023

ADVANCED DATABASES

(CSE)

Maximum Marks: 70

Date:30.06.2023 Duration: 3 hours

- Note:
- 1.This question paper contains two parts A and B.
 2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
 3. Part B consists of 5 Units. Answer any one full question from each unit which carries 10M.
 4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks

(10x2M=20 Marks)

- 1 What is the purpose of the database system architecture?
- 2 What is a parallel database?
- 3 What are the advantages of using an XML database?
- 4 How does indexing work in an XML database?
- 5 What are the key components of an information retrieval system?
- 6 How does the inverted index data structure contribute to information retrieval?
- 7 What are some advanced techniques for data integration in application development?
- 8 What are the security considerations and measures in advanced transaction processing systems?
- 9 What is the concept of security in database?
- 10 What are the challenges in maintaining database security

Part-B

Answer All the following questions.

(10MX 5=50Marks)

- 11 A. What is the role of intra query in a parallel database system?
B. How does fault tolerance work in a parallel database environment? [5+5]
OR
- 12 A. Explain about inter operation concept in parallel database?
B. Differentiate parallel database with traditional database system? [5+5]
- 13 A. Can you explain the concept of XML document validation in an XML database?
B. How does an XML database handle large-scale or complex XML documents? [5+5]
OR
- 14 A. Discuss structured types in an object-based database system.
B. Explain the concept of object-referenced modeling in the object-based databases. [5+5]
- 15 A. What is the role of indexing of context in information retrieval?
B. Explain the concept of web search engines and their underlying information retrieval techniques. [5+5]
OR
- 16 A. Discuss the advantages and limitations of information retrieval system.
B. Explain the concept of TF and IDF in information retrieval. [5+5]

- 17 A. Discuss the challenges and considerations in developing distributed applications using advanced databases.
B. How does advanced application development support data replication and synchronization across multiple nodes?

OR

- 18 A. What are some advanced techniques for managing transactional workflows in complex business processes?
B. Discuss the Spatial and temporal data in enhancing in transaction processing systems. [5+5]

- 19 A. Explain the principles of mandatory access control and its role in enforcing multilevel security in databases.
B. Compare and contrast mandatory access control with role-based access control in terms of security enforcement. [5+5]

OR

- 20 A. Explain the concept of database key encryption and its significance in protecting sensitive data at rest and in transit.
B. Discuss the issues in maintaining security in ensuring database security. [5+5]