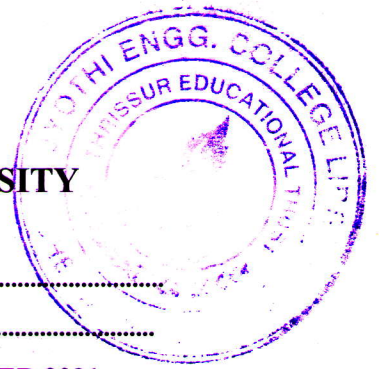


**APJ ABDULKALAM TECHNOLOGICAL UNIVERSITY
08 PALAKKAD CLUSTER**



Q. P. Code: CS0821131-I

(Pages: 2)

Name:

Reg. No:.....

FIRST SEMESTER M.TECH. DEGREE EXAMINATION DECEMBER 2021

Branch: Computer Science and Engineering Specialization: Computer Science and Engineering

08CS6031 ADVANCED DATABASE TECHNOLOGY

-Time:3 hours

Max. Marks: 60

Answer all six questions.

Modules 1 to 6: Part 'a' of each question is compulsory and answer either part 'b' or part 'c' of each question.

Q.no.	Module 1	Marks
-------	----------	-------

1 a.	A relation $R=(A,B,C,D,E,H)$ satisfies the following functional dependencies: $A \rightarrow C, AC \rightarrow D, E \rightarrow AD, E \rightarrow H$. Find the minimal cover for this set of FDs.	3
------	--	---

Answer b or c

b	Suppose we have a database for an investment firm, consisting of the following attributes: B – Broker, O – Office of a broker I – Investor S – Stock Q – Quantity of stock owned by an investor D – dividend paid by a stock. Hence, the overall schema is $R = (B, O, I, S, Q, D)$. Assume that the following FD. are required to hold on this Database: $I \rightarrow B, IS \rightarrow Q, B \rightarrow O, S \rightarrow D$. <ul style="list-style-type: none">• List all the candidate keys for R.• Give a lossless-join decomposition of R into BCNF.• Give a lossless-join decomposition of R into 3NF preserving FD. Is your answer in BCNF?	6
---	---	---

c	What is Heuristic Query Optimization ?	6
---	--	---

Q.no.	Module 2	Marks
-------	----------	-------

2.a	What is the difference between Interquery and Intraquery Parallelism?	3
-----	---	---

Answer b or c

b	What is range partitioning in parallel database. Explain it with example.	6
---	---	---

c	Explain Parallel Database Architectures in detail.	6
---	--	---

Q.no. **Module 3** **Marks**
3.a Differentiate two-tier and three-tier client-server architectures. **3**

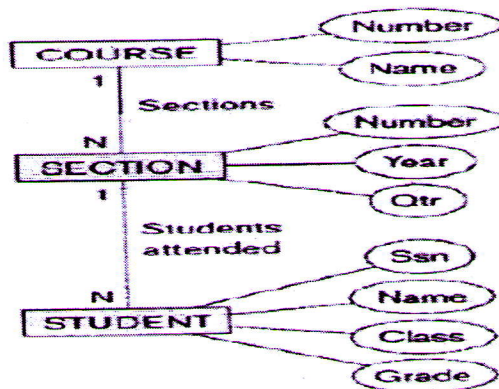
Answer b or c

- b** What are the different methods for distributing data in a distributed database? Also suggest any two special operations used for transferring different systems in a distributed network. **6**
- c** What are the different locking protocols in distributed Database? Explain with examples. **6**

Q.no. **Module 4** **Marks**
4.a Differentiate structured, semi-structured and unstructured data. **3**

Answer b or c

- b** Given hierarchical (tree) view with COURSE as the root. Find the XML document and DTD with course as root **3**



- c** What is the purpose of using FLWOR in XQuery? **6**
 Write an XQuery to retrieve the titles of books published before 2000, together with their publisher

Q.no. **Module 5** **Marks**
5.a What are the features of NOSQL database? **4**

Answer b or c

- b** Explain key-value data store and column store in NOSQL with examples **8**
- c** What are the types of NOSQL databases? **8**

Q.no. **Module 6** **Marks**
6.a What are the possible types of Handoff in mobile database? **4**

Answer b or c

- b** How location and hand off management is done in mobile database? **8**
- c** What are the Channel allocation strategies in Handoff management? **8**