

23075

M.Tech 3rd Semester (Computer Science Engg.)

Examination, December-2017

ADVANCED DBMS

Paper-MTCE-703-A

Time allowed : 3 hours] [Maximum marks : 100

Note : Attempt any five questions in total.

1. (a) Define database. Explain its 3 tier client server architecture. 10
- (b) Find the highest normal form in Student (name, courseNo., rollNo., grade) under following functional dependencies : 10
name, course No \rightarrow grade
rollNo, courseNo \rightarrow grade
name \rightarrow rollNo
rollNo \rightarrow name
2. (a) Explain steps in query processing with example. 10
- (b) Discuss transformation rules in query processing. 10
3. (a) Explain the purpose of checkpoint. How does the frequency of checkpoint affect system performance if no failure occurs ? 10

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- (b) Explain why log records for transactions on the undo-list must be processed in reverse order while those log records for transactions on the redo-list are processed in a forward direction? 10
4. (a) Explain optimistic concurrency control technique. 10
- (b) Differentiate between serial schedule and serializable schedule. 10
5. (a) What is object database management system (ODBMS)? Explain its architecture. 10
- (b) Differentiate between OODBMS and RDBMS. 10
6. (a) Explain advantages of DDBMS over centralized database. 10
- (b) Why we need fragmentation in DDBMS? Explain its types. 10
7. (a) Define data warehouse. Discuss data characteristics in data warehouse. 5
- (b) Explain data warehouse architecture. 10
- (c) Explain reconciled data layer in data warehouse. 5
8. (a) Define ORDBMS. What are the challenges in implementing ORDBMS? 10
- (b) Differentiate between ORDBMS and OODBMS. 10

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