

B.TECH. - VIEP - CSE

Term-End Examination

December, 2012

BICS-011 : DATABASE MANAGEMENT SYSTEM

Time : 3 hours

Maximum Marks : 70

Note : Seven questions are required to be answered.

1. (a) Explain generalization and specialization with suitable example. 5
(b) Write down the functions of DBA. 5
2. (a) Differentiate between a serial schedule and serializable schedule. 4
(b) Formulate a concurrency control protocol based on read and write locks. 6
3. (a) What is a view ? What are its advantages ? Explain the syntax for creating views ? 5
(b) What are integrity constraints ? Explain each of them and also write the SQL commands to enforce them in relation. 5
4. (a) Use Armstrong's axioms to prove the soundness of the pseudotransitivity rule. 4

- (b) What is functional dependency ? Write down the rules for finding implied functional dependencies from a set of given FD's. 6
5. (a) What are Indexing techniques ? Explain the indexing using B⁺ trees. 5
- (b) Explain the normal forms due to functional dependencies. 5
6. (a) Compute the closure of the following FD for relation schema. 7
 $R=(A, B, C, D, E)$
 $A \rightarrow BC$
 $CD \rightarrow E$
 $B \rightarrow D$
 $E \rightarrow A$
 List the candidate keys for R
- (b) Explain natural join with suitable example. 3
7. Considering the banking enterprise system, draw the complete ER diagram and also write any five SQL queries based on it. 10
8. (a) What is time stamp ? Discuss the working of wait and die and wound and wait transaction. 6
- (b) Using the functional dependencies of Q. No. 6 (a), compute the canonical cover F_c . 4

9. (a) Differentiate between : 5
(i) Strong and weak entity set.
(ii) Relational algebra and relational calculus.
- (b) What are the different states of a 5
transaction ?
10. Write short notes on (*any two*) : 5+5=10
(a) Fully functional dependency.
(b) Derived attributes.
(c) Database recovery.
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