

Bachelor in Information Technology (BIT)

Term-End Examination

December, 2006

CSI-20 : DATABASE MANAGEMENT SYSTEMS

Time : 2 Hours

Maximum Marks : 60

Note : There are **two** sections in this paper. Section A is **compulsory** and carries 30 marks. Section B consists of four questions. Attempt any **three** questions from Section B.

SECTION A

1. Data in database systems is 1
 - (a) integrated and shared
 - (b) costly to integrate
 - (c) sharable with permissions
 - (d) difficult to maintain
2. Specialization creates more classes on the basis of 1
 - (a) introduction of new characteristics
 - (b) specialized group of attributes
 - (c) relationships between entities
 - (d) combination of attributes
3. Log contains 1
 - (a) Redo information
 - (b) Undo information
 - (c) Commit Marker
 - (d) All of the above
4. Which one of the following is **not** a valid 5QL sublanguage ? 1
 - (a) DDL
 - (b) DSL
 - (c) DML
 - (d) DCL

5. Recovery is based on 1
- (a) concurrency control of transactions
 - (b) redundant information in logs
 - (c) security constraints
 - (d) None of the above
6. NULL values in a relation are 1
- (a) allowed by NOT in a key
 - (b) treated as logical values
 - (c) reported in data dictionary
 - (d) not allowed in data entry
7. Natural JOIN of two relations involves 1
- (a) Cartesian product
 - (b) Cartesian product and selection
 - (c) Cartesian product, selection and projection
 - (d) Cartesian product, selection, projection and display
8. While deleting a target of foreign key reference if the mode is CASCADE it implies that the delete operation will be successful only if the records in target relations are 1
- (a) set to NULL
 - (b) also deleted
 - (c) not existent
 - (d) None of the above
9. The major drawback of relational approach is 1
- (a) sharing makes it prone to attacks
 - (b) integrity constraints are difficult to keep
 - (c) inconsistency of data
 - (d) slower program execution than programming languages
10. Advantage of Client Server System is that it allows 1
- (a) development of complex software
 - (b) moderate performance
 - (c) enforcement of integrity
 - (d) use of old mainframe

11. (a) Explain why is normalization required. 5
- (b) Discuss the main problems that can occur when concurrent access to database is allowed. 5
- (c) What are the differences between DBMS and knowledge base ? 5
- (d) Describe the various protocols for deadlock prevention. 5

SECTION B

*There are four questions in this section. Attempt any **three** questions out of these.*

12. (a) Discuss the main characteristics of database approach and how it differs from the traditional file system. 5
- (b) Define BCNF. How does it differ from 3NF ? Why is it considered a stronger form of 3NF ? 5
13. What are the different partitioning techniques in a DDBMS ? How can a relation be put back together after complete partitioning ? Why is data replication useful in DDBMS ? 10
14. (a) Discuss the UNDO and REDO operations and the recovery techniques that use each of these. 5
- (b) What is data independence ? What are the different types of data independence ? What are the differences between them ? 5
15. (a) What is a view in SQL ? How is it defined ? What are the problems that may arise when one attempts to update a view ? 5
- (b) What primary characteristics should an OID possess ? Discuss the concept of polymorphism in reference to OODBMS. 5