00479

Bachelor in Information Technology (BIT)

Term-End Examination

June, 2010

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. Database integrity enforcement can be done by : **1**

(a) Assertions

(b) General constraints

(c) Triggers

(d) All the above

2. An index is defined as the list of : **1**

(a) values

(b) references

(c) objects

(d) addresses

3. Advantage of client server system is that it allows : 1

(a) moderate performance

(b) development of complex software

(c) use of old mainframe

(d) enforcement of integrity

4. A problem that occurs due to locking mechanism is : 1

(a) Serializable schedule

(b) End of transaction

(c) Livelock

(d) Deadlock

5. In an object oriented database, the Data Manipulation Language is : 1

(a) redesigned

(b) not needed

(c) taken from RDBMS

(d) modelled on SQL

6. If there exists a linear order among data items and transactions request locks in that order then which of the following cannot exist : 1

(a) Trigger

(b) Deadlock

(c) Cursor

(d) Rollback

7. In which level of database abstraction, the database entities and the relationships among them are included : 1

(a) user view

(b) conceptual view

(c) internal view

(d) procedural view

8. A transaction is defined as an instance of : 1

(a) a complex process.

(b) a program.

(c) execution of a task.

(d) execution of single program involving many values.

9. A DBA does not define : 1

(a) Security constraints

(b) Conceptual schema

(c) Damage control policy

(d) Performance factors

10. Normalisation upto 3NF creates more tables using : 1

(a) lossless join decomposition

(b) dependency preservation

(c) both (a) and (b)

(d) none of the above

11. (a) What primary characteristics should an object orient database possess ? Discuss the concept of inheritance hierarchy in reference to OODBMS ? 5

(b) What is a timestamp ? How does a system generate a timestamp ? 2

(c) Explain the meaning of the term "View" in the context of DBMS. How can a view be used to implement security in a database system ? Explain with the help of an example. 5

(d) Explain the concept of logical and physical data independence with the help of an example each. 4

(e) List the different kinds of system failures. How does log help in recovering from a system crash due to electrical supply failure ? 4

SECTION - B

12. (a) What is meant by the term 'isolation levels' ? What is locking ? What are the drawbacks of locking mechanism ? 5

    (b) Define referential integrity. Define foreign key and explain the need of declaring foreign keys with the help of an example. 5

13. (a) Compare and contrast the characteristics of Primary Vs. Secondary indexes. 3

    (b) What are normal forms ? What is the motivation behind normalizing a database ? Explain first, second and BCNF normal forms with the help of suitable examples. 7

14. (a) Explain the various states a transaction pass through during its execution. 5

    (b) Give five significant differences between relational databases and object databases. 5

15. Explain the following with the help of suitable example/diagram, wherever needed : 10

    (a) Lost update problem of concurrent transactions.

    (b) Serial schedule.

    (c) Role of database administrator.

    (d) Check point mechanism of recovery.
