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CSI-20

00215

BACHELOR IN INFORMATION TECHNOLOGY (BIT)

Term-End Examination

December, 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. State True or False : **10**

(a) A database system is a collection of interrelated data and a set of programs that allow users to access those data.

(b) In a typical file processing system records are stored in various files which are manipulated by different application programs.

(c) Data manipulation language is a language used only for specifying database schema and as well as other properties of the data.

(d) The purpose of the transaction manager is to ensure that the concurrent transaction executions proceed without any conflict.

(e) The query processor subsyster provides the interface between the low-level data stored in the database and the application programs and queries submitted to the system.

(f) Object oriented model can be seen as extending the E-R model with features of encapsulation and object identity.

(g) Physical level of data base abstraction describes what data are stored in the database and what relationship exist among those data.

(h) A super key is a set of one or more attributes that taken collectively allow to identify uniquely a triple in the relation.

(i) Triggers define actions to be executed automatically when certain events occur and corresponding conditions are satisfied.

(j) Either all operations of the transactions are reflected in the database, or none are. This refer to consistency property of transaction.

2. Differentiate between the following : 20

(a) Weak entity and Strong entity.

(b) 2 NF and 3 NF.

(c) Physical data independence and Logical data independence.

(d) Object Oriented Database and Relational Database Management System.

SECTION - B

3. (a) What is a transaction ? Describe ACID properties of transaction with appropriate examples. 5

   (b) What is Database Management System ? Explain any four advantages of DBMS. 5

4. (a) What are views ? Write the SQL statement for creating a view. Also mention the advantages and disadvantages of creating views in database system. 5

   (b) Explain the following terms in the context of DBMS. 5

   (i) Commit and Rollback in a transaction.

   (ii) Timestamping.

5. (a) What are database anomalies ? Explain the three types of anomalies that may exist in a database. 6

   (b) Explain atleast four responsibilities of a database management. 4

6. (a) What is the two phase locking protocol ? How does it guarantee serializability ? 5

   (b) List the different kinds of system failures. How does log help in recovering from a system crash ? 5