

**BACHELOR IN INFORMATION TECHNOLOGY
(BIT/ADIT)**

Term-End Examination 00430
December, 2011

CSI-20 : DATABASE MANAGEMENT SYSTEMS

Time : 2 hours

Maximum Marks : 60

Note : *There are two sections in this paper. All questions from section A are compulsory and carries 30 marks. Attempt any three questions from section B.*

SECTION - A

(Q.1 to Q. 10 are objective type questions)

1. Trigger can be used for : 1
 - (a) Integrity enforcement
 - (b) View integration
 - (c) Event management
 - (d) All of the above

2. Normalisation is needed to 1
 - (a) Enforce integrity constraints
 - (b) Reduce redundancy in tables
 - (c) Include all the table constraints
 - (d) All of the above

3. The basic unit of work in a database systems is called : 1
- (a) Tuple
 - (b) Record
 - (c) Attribute
 - (d) Transaction
4. Database Administrator defines the : 1
- (a) Backup policy
 - (b) Data security policy of organisation
 - (c) Organisational structure
 - (d) All of the above
5. Views are defined at the : 1
- (a) Internal scheme
 - (b) Conceptual scheme
 - (c) User/external scheme
 - (d) All of the above
6. Deadlock results due to : 1
- (a) Concurrent execution of transaction
 - (b) Concurrency control due to locking
 - (c) Concurrency control using optimistic views
 - (d) All of the above
7. Scalability is possible in : 1
- (a) Stand alone system
 - (b) System involving views
 - (c) Client - server database system
 - (d) Large database implementation

8. Data Manipulation in Object Oriented Database System is : 1
- (a) Standard Query Language
 - (b) Modelled on SQL
 - (c) Is implemented as links
 - (d) None of the above
9. Primary index is defined on the : 1
- (a) Key
 - (b) Super key
 - (c) Tuple
 - (d) Any attribute
10. Data independence is defined as : 1
- (a) Data and programs are independent
 - (b) Data is independent of all the tuples
 - (c) Data is independent of each other
 - (d) Data in a table is independent of data of other tables
11. (a) What is a log in the context of database transaction ? Explain how it is used to recover from failure of volatile storage with the help of an example ? 5
- (b) What is the need of object oriented database system even though you have relational database systems ? Explain any four features of an object oriented database system. 5

SECTION - B

Attempt *any three* questions of the following *four* questions :

12. What is normalisation ? Explain the terms lossless join decomposition and dependency preservation. Show with the help of an example the steps to create a relation in First Normal form, then to create 2 NF relations and from 2 NF to 3 NF relations. At each step show what problems will be removed by normalisation process. 10
13. (a) What is locking ? Why is it used in database systems ? What are the problems that may occur due to locking ? Explain with the help of an example. 5
- (b) Define the terms - primary key and foreign key. Explain how referential integrity constraints can be enforced with the help of an example ? 5
14. (a) Explain various states of a transaction execution with the help of a diagram. 5
- (b) Define the term primary and secondary index in a database system. Which of the two is more useful ? Give justification in support of your answer, preferably with the help of an example. 5

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

- (a) Isolation levels
 - (b) Serial schedule
 - (c) Check point
 - (d) BCNF
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