

**Advanced Diploma in Information Technology (ADIT) /
Bachelor in Information Technology (BIT)**

Term-End Examination

December, 2006

CST-302 : ADVANCED DATABASE MANAGEMENT SYSTEMS

Time : 3 Hours

Maximum Marks : 75

Note : *This paper consists of two sections. All questions are **compulsory** in Section A. There are three questions in Section B. Attempt any **two** questions from Section B.*

SECTION A

1. In OODBMS the referential integrity is implemented by
 - (a) objects themselves
 - (b) database itself using pointers
 - (c) classes and inheritance
 - (d) All of the above

2. Data on data warehouse is
 - (a) obtained from a single operational system
 - (b) mostly of volatile nature
 - (c) denormalized
 - (d) None of the above

3. A bank has many branches. It maintains its information using a database. Which of the following database models is suitable for the bank ?
 - (a) Relational database model
 - (b) Network database model
 - (c) Knowledge database model
 - (d) Hierarchical database model

4. Data integrity in data mining scheme is
 - (a) always preserved
 - (b) never preserved
 - (c) not an issue at all
 - (d) None of the above

5. Knowledge can be defined as
 - (a) rules and facts
 - (b) semantics of information
 - (c) basis of knowledge base
 - (d) All of the above

6. Data replication means
 - (a) data is duplicated
 - (b) data is calculated as a reply to a query
 - (c) data is passed as reply parameter
 - (d) All of the above

7. Web databases have
 - (a) Powerful Front End Tools
 - (b) Powerful Back End Tools
 - (c) Powerful Communication
 - (d) All of the above

8. Mobile computing is useful when
 - (a) satellite stations are moving
 - (b) hosts are moving
 - (c) mobile servers different hosts
 - (d) All of the above

9. ODBC is
- (a) Object database connectivity
 - (b) Open database connectivity
 - (c) Operational database connectivity
 - (d) None of the above
10. Which of the following has maximum bandwidth ?
- (a) IR Communication
 - (b) Radio Communication
 - (c) Cellular Telephony
 - (d) Ethernet
11. (a) Describe an application where mobile database technology can be of use. What are the advantages and disadvantages of mobile databases ? What are the issues behind mobile database implementation ?
- (b) What are knowledge base systems ? What are their advantages and disadvantages ? Where can knowledge databases be used ?
- (c) What are the advantages of using client-server database systems ? How do they communicate with each other ? Give an example of a client-server system.
- (d) Compare and contrast
- (i) Web databases and Information systems of an organization.
 - (ii) Data warehouses and Operational databases
- (e) An on-line store allows secure on-line purchases and money transfer. The store expects a customer database of about 10 lakh. Which web technology should be used for such a system ? Justify your answer. Also describe the reasons of selection of a web technology.

SECTION B

12. What are DDBMS's ? Why are fragmentation and data replication useful in DDBMS ? What sort of considerations are used to decide about the type and extent of data fragmentation and replication ? What are the advantages and disadvantages of replication ?
13. What are the differences between OLTP and OLAP ? Describe the architecture of Data Warehouse. How are the database systems related to a data warehouse ? Explain with a suitable example.
14. What are the weaknesses of a relational database management system ? How do object oriented systems overcome these weaknesses ? Describe an application where you can use object oriented database systems. Describe the features and strengths of object oriented systems.