Register Number: ……..

M.E DEGREE EXAMINATIONS: JANUARY 2011

First Semester

COMPUTER SCIENCE AND ENGINEERING

CSE503: Advanced Database Technology

Time: Three Hours **Maximum Marks : 100**

Answer all the Questions:-

PART A (10 x 2 = 20 Marks)

1. What is logical data independence?
2. What is a data dictionary? What are the information stored in the data dictionary?
3. Define BCNF.
4. What is a view in SQL and how is it defined?
5. Distinguish between centralized and distributed databases.
6. List out the characteristics of DDBMSs.
7. State the reasons for failures in distributed DBMS.
8. What are the methods used to guarantee distributed serializability?
9. What are object oriented databases? List out its objectives.
10. What is pointer swizzling?

PART B (5 x 16 = 80 Marks)

11. a) (i) Discuss the major advantages of database approach compared with file processing approach. (8)

(ii) Discuss the fundamental operations in the relational algebra. (8)

(OR)

b) (i) What are data models? Explain. (6)

(ii) Draw the architecture of DBMS and explain the components. (10)

12. a) (i) Explain 2NF and 3NF with suitable examples. (10)

(ii) Consider the following schema (6)

Catalog (Book_ID,Title,Author_ID,Publisher_ID,Category_ID,Year,Price)

Author (Author_ID,Name,City,Country)

Publisher (Publisher_ID,name,City,Country)

Give an expression in SQL for each of the following queries.

1. Get the details of all the books whose price is greater than the average price of the books.

2. Get the names of all authors who have more than two books in the catalog.

3. Get all the details of the books whose price is in the range of 400 – 600 both inclusive.

(OR)

b) (i) Explain at least two of the desirable properties of decomposition? (8)

(ii) Discuss the various pitfalls in a relational database design using a sample database. (8)

13. a) (i) Explain the Date's twelve rules for DDBMS. (12)

(ii) List out the advantages and disadvantages of a DDBMS. (4)

(OR)

b) (i) Discuss the issues to be addressed with distributed database design. (8)

(ii) Explain about different categories of fragmentation with suitable example. (8)

14. a) (i) Explain about 3 phase commit protocol. (8)

(ii) Discuss in detail about distributed transaction processing. (8)

(OR)

b) (i) Write a short note on mobile databases. (4)

(ii) With a suitable example explain any two techniques used for query optimization in a distributed environment. (12)

15. a) (i) Discuss the various concepts relevant to object data model. (12)

(ii) List out the advantages and disadvantages of OODBMS. (4)

(OR)

b) (i) Explain about the three generations of DBMS. (6)

(ii) Describe the main strategies that can be used to create persistent objects. (10)

****