

FACULTY OF ENGINEERING**B.E. IV/IV Year (CSE) II Semester (Main) Examination, May/June 2011****ADVANCED DATABASE****(Elective-III)**

Time : 3 Hours]

[Max. Marks : 75

*Answer all questions from Part A.
Answer any five questions from Part B.*

Part A - (Marks: 25)

1. What is Specialization ?
2. What is the difference between reference type attribute and foreign key attribute.
3. What is a nested relational model ?
4. How does the concept of object in the object-oriented model differ from the concept of an entity in the entities relationship model ?
5. What is the difference between XML DTD and XML schema ?
6. Why is it relatively easy to port a database from a single processor machine to a multi processor machine if individual queries need not be paralleled ?
7. What are the two most common forms of data positioning in a parallel database environment ?
8. What is semi-join ?
9. Does SQL support multiple inheritance of tables ?
10. When do you need to use where clause in ODMG OQL ?

Part B - (Marks : 50)

11. (a) Explain the distinction between disjoint and overlapping constraints ?
(b) Discuss the relative merits and demerits of representing x-axis relationship by binary relationships.
12. (a) What is ambiguity problem in multiple inheritance ? How is it resolved ?
(b) What are the features of persistence Java systems ?

13. Consider XML data given by the following DTD :

```
<! ELEMENT COURSES (Course*)>
```

```
<! ELEMENT COURSE (Number,  
  title, book*, professor*)>
```

```
<! ELEMENT Book (Title, price)>
```

(elements that are not defined are PC DATA)

For each of the following questions,

Write an X path or X Query query :

- (a) Return all titles in the document
- (b) Return the title of all books for CS474
- (c) Return each course title and the titles of all its books.
- (d) Return each professor and title of courses that they teach.

14. (a) Briefly discuss the major components of ODMG standard.

(b) Explain the usage of table hierarchies in SQL standard.

15. Explain how different types of failures are handled by two-phase commit protocol.

16. (a) Differentiate between inter query parallelism and intra-query parallelism.

(b) Explain how the following differ

Fragmentation transparency, replication transparency and location transparency.

17. Write short notes on :

(a) Association classes

(b) O – O versus O – R systems

(c) Directors Systems.