**Reg. No. \_\_\_\_\_\_\_\_**

**Karunya University**

**(Karunya Institute of Technology and Sciences)**

(Declared as Deemed to be University under Sec.3 of the UGC Act, 1956)

**Supplementary Examination - June 2011**

**Subject Title: ADVANCED OPERATING SYSTEMS Time: 3 hours**

**Subject Code: 10CS302 Maximum Marks: 100**

**Answer ALL questions (5 x 20 = 100 Marks)**

1. Discuss the issues in Distributed operating systems.

(OR)

2. a. Briefly explain the deadlock handling strategies in Distributed systems. (6)

b. Explain Lamport’s logical clocks and Vector clocks with suitable example. (14)

3. a. Describe the mechanisms for building Distributed file systems. (7)

b. What are the advantages of Distributed shared memory? (7)

c. Briefly describe sender-initiated and receiver-initiated load distributed algorithms. (6)

(OR)

4. Discuss the various issues addressed in the design and implementation of Distributed file system.

5. Compare External Vs Internal security. Explain the three implementations of the access matrix model.

(OR)

6. a. Discuss the major multiprocessor operating system design issues. (10)

b. Describe the various types of interconnection networks for multiprocessor systems. (10)

7. a. Discuss the requirements of a Database operating system. (10)

b. Explain the concurrency control model of a Distributed database system and Fully-replicated database system. (10)

(OR)

8. Describe the following Timestamp based concurrency control algorithms:

a. Basic timestamp ordering algorithm. (5)

b. Thomas write rule. (5)

c. Multiversion Timestamp ordering algorithm. (5)

d. Conservative Timestamp ordering algorithm. (5)

9. **Compulsory**:

Explain in detail two-phase commit protocol with illustration.