

**GUJARAT TECHNOLOGICAL UNIVERSITY****M.E Sem-II Remedial Examination December 2010****Subject code: 720201****Subject Name: Distributed Operating Systems****Date: 18 /12 /2010****Time: 02.30 pm – 05.00 pm****Total Marks: 60****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Explain loosely coupled and tightly coupled system in terms of both memory and processor. (with diagram) **06**
- (b) Explain Light weight RPC? Is it possible to implement light weight RPC in railway reservation system? Justify your answer. **06**

- Q.2** (a) Explain memory management approach or algorithm in distributed environment (Any one). **06**
- (b) Explain following features of Distributed Operating System: System image, Autonomy and fault tolerance capacity. **06**

**OR**

- (b) Mutual exclusion and deadlocks are more probable in distributed operating system? Justify your answer and provide alternative solutions. **06**
- Q.3** (a) Explain any one algorithm of Centralized clock synchronization with example. Also specify the merits and demerits of this system over distributed clock synchronization algorithms. **06**
- (b) Difference between strict and sequential consistency model with relevant example. **06**

**OR**

- Q.3** (a) Explain and differentiate both processor consistency model and PRAM model. **06**
- (b) An online counseling and admission system is required to be designed for the country and using distributed environment which Distributed computing system model and consistency model should be preferred? Justify your answer. **06**

- Q.4** (a) 1) List the desirable features of a good distributed file system. **06**
- 2) What is an immutable file? How basic file operations like create, read, write and delete – can be performed in this file system for shared files?
- (b) 1) Discuss the advantages and disadvantages of using full-file caching model, for the data-caching mechanism of a distributed file system. **06**
- 2) Discuss different approaches to solve multicopy update problem, for file-replication in the distributed file systems.

**OR**

- Q.4** (a) 1) Discuss advantages of stateless file servers. **06**
- 2) Differentiate among the following properties of a distributed file system – Availability, Recoverability and Robustness.
- (b) 1) Some distributed file systems use client caching with delayed writes back to the server. What different problems can these systems introduce? **06**
- 2) Discuss two important issues related to replication transparency for distributed file systems.

- Q.5 (a)** Explain process migration in Heterogeneous system. **06**  
**(b)** Difference between Amoeba and Mach in terms of kernel, system model and process management. **06**

**OR**

- Q.5 (a)** Explain Thread design issues in distributed operating system. **06**  
**(b)** Explain the fields of block table in the dynamic-server distributed data location model for NRMB strategy. List pros and cons of the above specified strategy. **06**

\*\*\*\*\*