

Con. 6740-11.

(REVISED COURSE)

MP-5188

(3 Hours)

[Total Marks : 100

N.B. : (1) Question No. 1 is **compulsory**.(2) Attempt any **four** questions out of remaining **six** questions.(3) **Figures** to the **right** indicate **full** marks.(4) **All** questions carry **equal** marks.

1. (a) What are the major issues in designing a distributed operating system ? 5
 (b) What are the main similarities and differences between the RPC Model and the ordinary procedure call model ? 5
 (c) What are the statefull and stateless servers ? 5
 (d) Differentiate : Replication vs Caching ? 5
2. (a) Explain various forms of message-oriented communication with suitable example 10
 (b) Compare processes and threads. Explain user and kernal level threads execution and also the need of light-weight threads. 10
3. (a) What are the different failure that can occur in RPC system ? Discuss the solutions for these failures. 10
 (b) Compare data-centric and user centric consistencies and explain one consistency model of each type. 10
4. (a) Explain desirable features of a good naming system. 10
 (b) What is CORBA ? Explain its Architecture and various services provided by it. 10
5. (a) Explain distributed algorithm for mutual exclusion. What are the advantages and disadvantages of it over centralized algorithms ? 10
 (b) Explain main issues in building a DSM system on a network of heterogeneous machines. 10
6. (a) Explain the process of synchronization w.r.t. physical and logical clocks. 10
 (b) Explain lightweight RPC. 10
7. Write short note on any **two** :- 20
 - (a) Fault Tolerance
 - (b) Attacks and Security in a Distributed System
 - (c) Issues in Designing Load Sharing Algorithms.