Time: 3 Hours **Max. Marks: 80**

Instructions:

1) **Question no 1 is Compulsory**
2) Only **Three question** need to be solved.
4) Illustrate your answers with neat sketches wherever necessary.
5) Figures to the right indicate full marks.
6) Assume suitable additional data, if necessary and clearly state it.

Q.1	**(a)**	What is distributed computing? Explain any four issues of distributed computing.	**05**
	(b)	What is group communication? Explain 1:M and M: 1 group communication.	**05**
	(c)	Justify how Ricart-Agrawala's algorithm optimized the Message overhead in achieving mutual exclusion.	**05**
	(d)	Explain code migration and its techniques.	**05**
Q.2	**(a)**	What are the features of DFS and explain and draw and explain Model file service architecture.	**10**
	(b)	What is RPC? Explain the working of RPC in detail with the help of diagram.	**10**
Q.3	**(a)**	What is mutual exclusion? Explain Suzuki-Kasami Broadcast Algorithm of mutual exclusion	**10**
	(b)	What are the goals of a distributed system? Explain various system models of distributed computing?	**10**
Q.4	**(a)**	What is the difference between Data centric consistency models and client centric consistency models? Explain one model of each..	**10**
	(b)	Explain Maekawa's algorithm in detail and also specify properties of Quorum Set.	**10**
Q.5	**(a)**	Discuss the need of the coordinator. Also explain any one algorithm for coordinator selection.	**10**
	(b)	Compare Load sharing to Task Assignment and Load balancing strategies for scheduling processes in a distributed system.	**10**
Q.6	**(a)**	Explain Andrew File System (AFS) in detail.	**10**
	(b)	What is fault tolerance? Explain various types of failure models.	**10**