ANSWER ALL THE QUESTIONS		10*2=20 Marks
PART A		**Marks**
1.	What is the role of middleware in a distributed system?	2
2.	What is Distributed System?	2
3.	Differentiate between synchronous and asynchronous execution.	2
4.	Write the happen-before relation.	2
5.	What is Clock Skew?	2
6.	What do you mean by interpretation in terms of cuts?	2
7.	What are the requirements of mutual exclusion algorithms?	2
8.	What do you mean by Deadlock Avoidance?	2
9.	What are the conditions for deadlock?	2
10.	Explain Wait-die method.	2

PART B		5*13=65 Marks
11.	a) i) Explain difference between message passing and shared memory. ii) Discuss primitives for distributed communication. (OR) b) i) What is Distributed System? What is the need of Distributed system? ii)Explain global state of Distributed system.	6 7 6 7
12.	a) i) Explain happen- before relation with example. ii) Explain in detail about NTP. (OR) b) i) What is Scalar Time? Explain properties of scalar time. ii) Explain the types of Group Communications used in distributed system.	6 7 7 6
13.	a) Explain Ricart Agrawala algorithm with an example. (OR) b) i) Explain requirement and performance metric of mutual exclusion. ii) Discuss AND model and OR model of deadlock.	13 7 6
14.	a) Analyze Suzuki- Kasami's broadcast algorithm for mutual exclusion in distributed system. (OR) b) Elucidate on the total and causal order in distributed system.	13 13
15.	a) Explain Three phase Distributed algorithm in detail. (OR) b) Explain the Chandy- Lamport Snapshot algorithm.	13 13
	PART C	**1*15=15 Marks**
16.	a) Discuss the design issues and challenges in distributed system from a system perspective. (OR) b) Explain in detail the Chandy- Misra- Haas algorithm for the AND and OR model.	15 15