Reg No.:_____　　　　　　　　　Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
Seventh Semester B.Tech Degree Regular and Supplementary Examination December 2021 (2015 Scheme)

Course Code: CS407

Course Name: DISTRIBUTED COMPUTING

Max. Marks: 100　　　　　　　　　　　　　　　　　　　　Duration: 3 Hours

PART A
Answer all questions, each carries 4 marks.　　　　　　　　Marks

1	Differentiate between tightly coupled and loosely coupled systems.	(4)
2	Distributed system is characterized with no global clock. Explain.	(4)
3	Define mobile code and give examples of applications where the use of mobile code is beneficial.	(4)
4	Distinguish between synchronous and asynchronous communication	(4)
5	Explain the concepts of Domain Name space and Resource records.	(4)
6	What do you mean by Network virtualisation? Illustrate with an example.	(4)
7	Summarize serial equivalence with the help of an example.	(4)
8	Explain why hierarchic locks are needed? Illustrate with example	(4)
9	How does the Bully algorithm perform failure detection through time outs?	(4)
10	Describe the working of Ring based election algorithm.	(4)

PART B
Answer any two full questions, each carries 9 marks.

11	a)	Write notes on evolution and trends in distributed systems.	(5)
	b)	Distinguish between minicomputer model and processor pool model with neat diagram.	(4)
12	a)	Explain the term threats in distributed systems.Describe the different threats exist and how it can be resolved.	(5)
	b)	What is meant by Omission Failure?List and explain its classes.	(4)
13	a)	Give brief description on the three types of communication paradigms by which the entities in a distributed system communicate.	(6)
	b)	Differentiate between client server and peer-peer architectural model.	(3)

PART C

Answer any two full questions, each carries 9 marks.

14 a) Differentiate TCP stream communication and UDP datagram communication.   (4)

b) Describe the working of RPC with a neat diagram.   (5)

15 a) What do you mean by navigation in name resolution?What are the different types of navigations used in name resolvers?   (5)

b) Describe the architecture of NFS with neat diagram   (4)

16 a) Why should UFID be unique across all possible file systems? How is uniqueness for UFID ensured?   (5)

b) Explain the significance and need of external data representation and marshalling.   (4)

PART D

Answer any two full questions, each carries 12 marks.

17 a) Describe the significance of locks in distributed transactions.What are the different types of locks?   (6)

b) Discuss phantom distributed deadlock detection approach.   (6)

18 a) Write and explain Maekawa's voting algorithm.   (6)

b) Explain the working of Bully election algorithm with an example..   (6)

19 a) Compare central server algorithm and ring based algorithm.   (6)

b) Explain how the two-phase commit protocol for nested transactions ensures that if the top-level transaction commits, all the right descendants are committed or aborted.   (6)

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