Code No: 137CA **R16**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech IV Year I Semester Examinations, January/February - 2023
DISTRIBUTED SYSTEMS
(Computer Science and Engineering)

Time: 3 Hours **Max. Marks: 75**

Note: i) Question paper consists of Part A, Part B.
ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.
iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART – A
(25 Marks)

1.a) What do you mean by transparency? [2]
b) Give examples of hardware resources and data or software resources that can be shared in distributed systems. [3]
c) What do you mean by clock skew and clock drift? [2]
d) What are the problems in group communication? [3]
e) What do you mean by marshalling and unmarshalling? [2]
f) What do you mean by RPC? [3]
g) What are the various file attributes? [2]
h) What is a URL? How is it composed? [3]
i) What do you mean by cascading abort? [2]
j) What do you mean by a serial schedule? [3]

PART – B
(50 Marks)

2.a) What do you mean by a distributed system? Give examples of distributed systems.
b) Explain the concept of resource sharing using WWW. [5+5]

OR

3.a) Give an overview of various communication paradigms in distributed systems.
b) Distinguish between Layered and Tired architectures. [5+5]

4. Describe 'snapshot' algorithm of Chandy and Lamport for determining global states. [10]

OR

5.a) Explain ring-based algorithm for ensuring distributed mutual exclusion.
b) Discuss Byzantine general's problem in a synchronous system. [5+5]

6.a) Discuss TCP stream communication.
b) Explain various call semantics associated with RPC. [5+5]

OR

7.a) Give an overview of XML.
b) Distinguish between RPC and RMI. [5+5]

8.a) What are the requirements and key design issues for Distributed File Systems? Explain.
b) Give an overview of Global Name Service. [5+5]

OR

9. Give an overview of various consistency models in distributed shared memory. [10]

10.a) Explain time-stamp ordering protocol.
b) Explain two-phase commitment protocol. [5+5]

OR

11.a) Explain lock-based concurrency control mechanism.
b) Explain log-based recovery mechanism. [5+5]

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