

**R16**

Code No: 137CA

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**

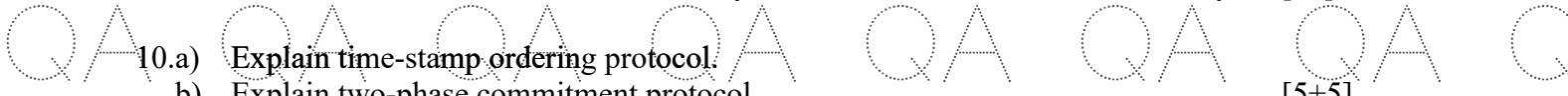
- 7.a) Give an overview of XML.
- b) Distinguish between RPC and RMI. [5+5]



- 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]

