

# C.U.SHAH UNIVERSITY

## Winter Examination-2018

**Subject Name: Distributed Systems**

**Subject Code: 4TE08DSY1**

**Branch: B.Tech (CE)**

**Semester: 8**

**Date: 19/10/2018**

**Time: 10:30 To 01:30**

**Marks: 70**

Instructions:

- (1) Use of Programmable calculator & any other electronic instrument is prohibited.
  - (2) Instructions written on main answer book are strictly to be obeyed.
  - (3) Draw neat diagrams and figures (if necessary) at right places.
  - (4) Assume suitable data if needed.
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<b>Q-1</b>	<b>Attempt the following questions:</b>	<b>(14)</b>
	a) Mention few examples of distributed systems.	01
	b) What is meant by Causal ordering?	01
	c) What is meant by Garbage collection?	01
	d) What is meant by Group communication?	01
	e) What is clock synchronization?	01
	f) Define the approach of two phase commit protocol.	01
	g) Define Clock skew?	01
	h) What is wait-for-graph?	01
	i) What is marshalling?	01
	j) Define RMI.	01
	k) Enlist the characteristics of performance of DS.	01
	l) What is Asynchronous DS?	01
	m) Define RPC.	01
	n) Name any two election algorithms.	01

**Attempt any four questions from Q-2 to Q-8**

<b>Q-2</b>	<b>Attempt all questions</b>	
(a)	With the help of an example, write the steps that are needed for the RPC operation. Also explain the RPC semantics in the presence of failures and its implementation issues.	<b>07</b>
(b)	Explain how logical clocks are implemented in distributed system.	<b>07</b>



- Q-3                    Attempt all questions**
- (a)    Discuss on Design and Implementation issues of Distributed shared Memory.                    **07**
- (b)    What is Load Balancing? Explain any one algorithm of load balancing.                    **07**
- Q-4                    Attempt all questions**
- (a)    Discuss various differences between the workstation-server and the processor-pool model in terms of availability.                    **07**
- (b)    Discuss various issues related to distributed system design.                    **07**
- Q-5                    Attempt all questions**
- (a)    Discuss and compare the following consistency models: Sequential consistency model and casual consistency model.                    **07**
- (b)    What is the major difference between stateless server and stateful server? Which server is easy to implement? Explain.                    **07**
- Q-6                    Attempt all questions**
- (a)    Explain Berkley clock Synchronization algorithm with an example.                    **07**
- (b)    Explain Java RMI. What are the components and processes of Java RMI execution?                    **07**
- Q-7                    Attempt all questions**
- (a)    What is process migration? List the steps in process migration. Explain any one in detail.                    **07**
- (b)    What are threads? What are the different ways of synchronizing threads? Also explain various thread models.                    **07**
- Q-8                    Attempt all questions**
- (a)    Write Short note on : DNS                    **07**
- (b)    What are the design issues of real time distributed operating system? Discuss.                    **07**

