

**Subject Code: XXXXX**

**Roll No:**

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**BTECH  
(SEM-7) DISTRIBUTED SYSTEM 2021-22**

**TIME:3 HOUR**

**Total Marks: 100**

**Instruction:** Attempt the questions as per the given instructions. Assume missing data suitably.

**SECTION - A**

**Attempt *All Parts* in Brief**

**2\*10 = 20**

<b>Q1</b>	<b>Questions</b>	<b>Marks</b>
(a)	Define bully algorithm.	2
(b)	Differentiate between 2PL and strict 2PL.	2
(c)	Explain token based algorithm.	2
(d)	What is the election algorithm ?	2
(e)	What is meant by nested transactions ?	2
(f)	Define Edge chasing.	2
(g)	What is deadlock resolution ?	2
(h)	Describe orphan message and loss message.	2
(i)	Explain event ordering.	2
(j)	What do you mean by global state of distribution system ?	2

**SECTION - B**

Attempt Any Three of the following

3\*10 = 30

Q2	Questions	Marks
(a)	What are phantom deadlock ? Explain the algorithm which could detect phantom deadlock.	10
(b)	Describe the advantages and disadvantages of the HTML, URL and HTTP as core technologies for information browsing.	10
(c)	Write compare and contrast between different concurrency control techniques for transaction.	10
(d)	Discuss any checkpoint and recovery algorithm that takes a consistent checkpoint and avoids livelock problems.	10
(e)	Differentiate between forward and backward recovery. Explain Orphan Message and Domino effect with example.	10

### SECTION - C

Attempt Any One of the following

5\*10 = 50

Q3	Questions	Marks
(a)	Which protocol do you suggest when there is a network partition ? Explain it's variant as well.	10
(b)	Explain how a non-recoverable situation could arise if write locks are released after the last operation of a transaction but before its commitment.	10
Q4	Questions	Marks
(a)	Explain Chandy-Lamport algorithm for consistent state recording.	10
(b)	What are distributed systems ? What are the significant advantages and applications of distributed systems ?	10
Q5	Questions	Marks
(a)	What is Timestamp ordering ? Explain advantages and disadvantages of multi-version time stamp ordering.	10
(b)	Discuss the followings terms: i. Highly available services. ii. Sequential Consistency	10
Q6	Questions	Marks
(a)	What do you mean by agreement protocol? List all the agreement protocols and the difference between them.	10
(b)	What are the fault tolerance service available now days ? Explain in detail.	10

Q7	Questions	Marks
(a)	How distributed mutual exclusion is different of mutual exclusion in single computer system ? Explain Ricart Agrawala Algorithm.	10
(b)	Explain path pushing algorithm for distributed deadlock detection algorithm.	10