

Time: 3 hours

Max. Marks: 80

Instructions:

- 1) Only **Four question** need to be solved.
- 2) All question carries equal marks.
- 3) Illustrate your answers with neat sketches wherever necessary.
- 4) Figures to the right indicate full marks.
- 5) Assume suitable additional data, if necessary and clearly state it.
- 6) All sub-questions of the same question should be grouped together.

- Q.1** Solve any **four**
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|---|-----------|
| (a) What are various issues of distributed system? | 05 |
| (b) Justify how Ricart-Agrawala's algorithm optimized the Message overhead in achieving mutual exclusion. | 05 |
| (c) Explain the election algorithm? | 05 |
| (d) Explain Suzuki-Kasami algorithm? | 05 |
| (e) Difference between RMI and RPC? | 05 |
- Q.2**
- | | |
|--|-----------|
| (a) What is distributed computing? Explain various system models of distributed computing? | 10 |
| (b) Define Remote Procedure Call (RPC). Explain the working of RPC in Detail. | 10 |
- Q.3**
- | | |
|--|-----------|
| (a) What is a logical clock? Why are logical clocks needed in a distributed system? Explain Lamport algorithm. | 10 |
| (b) Describe code migration issues in detail? | 10 |
- Q.4**
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|---|-----------|
| (a) Explain Hadoop Distributed File System (HDFS). | 10 |
| (b) Differentiate between message-oriented communication and stream-oriented communication. | 10 |
- Q.5**
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|---|-----------|
| (a) Compare Load sharing to Task Assignment and Load balancing strategies for scheduling processes in a distributed system. | 10 |
| (b) Discuss various client centric consistency models. | 10 |
- Q.6** Write Short note (Any 2)
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|------------------------------------|-----------|
| (a) Physical Clock Synchronization | 10 |
| (b) Load balancing techniques | 10 |
| (c) Andrew File System (AFS) | 10 |
| (d) Fault tolerance | 10 |
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