

ME Sem I / Choice base / Comp / SH 2018

(3 Hours)

Total Marks: 80

N.B. 1) Question No.1 is compulsory.

2) Attempt any three questions out of remaining five questions.

3) Assume suitable data whenever required but justify the same.

4) Assumption made should be clearly stated.

- Q.No. 1 a) Briefly explain the following: 20
- Differentiate DOS and Middleware
  - Issues in load balancing
  - Issues of fault tolerance
  - Characteristics of RTOS
- Q.No. 2(a) Explain Non-Two-Phase Locking Algorithm. What are its advantages over two-phase-locking algorithm? 10
- Q.No. 2(b) With example, explain how Lamport's Algorithm provides Mutual Exclusion. Also explain how this algorithm can be further optimized. 10
- Q.No. 3(a) Compare the performances of receiver-initiated Vs sender initiated load sharing. 10
- Q.No. 3(b) Discuss the pros and cons of Distributed Database Systems. 10
- Q.No. 4(a) What are the requirements of a DBOS? Discuss the problem of concurrency control. 10
- Q.No. 4(b) Discuss the unbounded waiting condition for resource sharing in RTOS. Explain how it is handled in RTOS using PIP. 10
- Q.No. 5(a) Elaborate on the system model used for studying Agreement Problems 10
- Q.No. 5(b) Explain the rollback recovery algorithm and compare it with check point algorithm. 10
- Q.No. 6 Write short notes on 20
- Mobile OS
  - Scheduling real time tasks
  - Distributed Deadlock

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