

Total No. of Questions : 8}

{Total No. of Printed Pages : 2

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Roll No

MCTA-205
M.E./M.Tech., II Semester
Examination, June 2017
Distributed System

Time : Three Hours

Maximum Marks : 70

Note : i) Attempt any five questions.
 ii) All questions carry equal marks.

1. a) What are different transparencies which can be observed in distributed system? List basic transparencies need to be supported by the distributed system. 7
 b) Discuss five fundamental issues in distributed system. 7
2. a) Give characteristics and goals of centralized OS, network OS, distributed OS and cooperative autonomous system. 7
 b) Discuss techniques for achieving high-performance in distributed file systems. 7
3. a) What are the various message orderings that are used in group communication? 7
 b) What is Indirect Communication? Give an application where this type of communication is appropriate. 7
4. Discuss the system calls which are used to provide the communication : 14
 a) Between related processes
 b) Between the processes within the file system
 c) Between any arbitrary processes

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5. a) Show that using single value for logical clock C, it is not possible to ensure that if $C(a) < C(b)$, then $a \rightarrow b$, where \rightarrow denoted happen-before relation among the events in a distributed system. 7
 b) Why Global clock is important in a distributed system? Why this is an Issue? How this can be realized? 7
6. a) Show that how wait-die/wound-wait protocol ensures prevention of deadlocks? 7
 b) What are the problems in concurrent systems? How these can be solved in time stamping? Discuss the demerits of time stamping also. 7
7. Explain the following : 14
 a) Operating system architecture
 b) Atomic Commit Protocol
8. a) Discuss asymmetric (public/private key pair-based) cryptography technique and how it can be used in supporting security in distributed systems. 7
 b) Explain the following : 7
 i) Cryptography pragmatics
 ii) Fault Tolerant Services

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