

N.B.: (1) Question No. 1 is compulsory. (2) Attempt any three out of remaining five questions.

- Q.1 (a) What different transparencies a distributed system has to employ to achieve a single processor image? 10
(b) What is parallel computing? Explain task and data parallelism. 10
Q.2 (a) What are threads? Explain user level and kernel level threads. 10
(b) What are election algorithms? Explain Bully algorithm. Is it more efficient than Ring algorithm? 10
Q.3 (a) What do you mean by flexible reliability in multicast communication? Explain. 10
(b) What is cloud computing? Explain different cloud models in detail. 10
Q.4 (a) What is stub? How are stub generated? Explain how the use of stubs helps in making an RPC mechanism transparent. 10
(b) What is Happened Before Relation? How does it help in event ordering? Explain with help of an example. 10
Q.5 (a) Discuss in detail Service Oriented Architecture and its benefits. 10
(b) What is clock synchronization? Compare and contrast the various algorithms used for clock synchronization in distributed system. 10
Q.6 (a) Differentiate between - 10
i. Cloud Computing & Grid Computing
ii. Monolithic Kernel & Microkernel approaches
(b) Write short notes on - 10
i. Sequential consistency
ii. CORBA

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