Code: 9A05604

R09

B. Tech III Year II Semester (R09) Supplementary Examinations, November/December 2012

DISTRIBUTED SYSTEMS

(Computer Science & Engineering)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

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1 (a) What is the main motivation for constructing a distributed system?
(b) What are the challenges arising from the construction of a distributed system?

2 How distributed objects communicate using RMI?

3 What are the basic design issues for name services?

4 (a) What are clock skew and clock drift?
(b) What is coordinated universal time? How it is implemented?

5 Briefly explain concurrency control protocols with example.

6 Available copies replication is applied to data items A and B with replicas A_x, A_y and B_m, B_n. The transactions T and U are defined as:

T: read (A); Write (B, 44),
U: read (B); Write (A, 55),

Show an interleaving of T and U assuming that two phase locks are applied to the replicas. Explain why locks alone cannot ensure one copy serializability if one of the replicas fails during the process of T and U. Explain with reference to this example how local validation ensures one copy serializabilty.

7 Discuss the procedure for TEA encryption and decryption functions.

8 Compare and contrast between release and sequential consistency models with example.

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