Register Number……

M.E., DEGREE EXAMINATIONS: NOV/DEC 2012

Third Semester

COMPUTER SCIENCE AND ENGINEERING

CSE559: Distributed Computing

Time: Three Hours **Maximum Marks: 100**

Answer All Questions:-

PART A (10 x 2 = 20 Marks)

1. Define software architecture.
2. What is thin client?
3. State the purpose of marshalling.
4. Give four examples that shows the effect of failure semantics in IP multicast.
5. Write the aspects of creating a new process.
6. Mention the design characteristics of AFS.
7. What is name resolution?
8. Define distributed garbage collection.
9. Write the locking rules for nested transactions.
10. What is the use of edge chasing?

PART B (5 x 16 = 80 Marks)

11. a) (i) Discuss the challenges in designing distributed systems. (8)

(ii) Explain the interaction model of distributed system. (8)

(OR)

b) (i) Outline the principle architectural models on which distribution of responsibilities is based. (8)

(ii) Discuss the networking issues for distributed systems. (8)

12. a) (i) Explain the failure model of the request-reply protocol and the use of TCP streams to implement the request-reply protocol in client-server communication. (8)

(ii) Elucidate the participants in distributed event notification with the help of its architecture. (8)

(OR)

b) (i) Converse the extensions to the object model to make it applicable to distributed objects. (8)

(ii) Explain how a layer of middleware above the request-reply protocol may be designed to support RMI between application level distributed objects. (8)

13. a) (i) Give brief note on

1. Thread synchronization (4)

2. Thread implementation (4)

(ii) Confer the requirements of distributed file system (8)

(OR)

b) (i) Explain the invocation performance in distributed system design. (8

(ii) Elucidate the architecture of Sun network file system. (8)

14. a) (i) Discuss the main design issues for name services with examples from DNS. (8)

(ii) Write any two algorithms for mutual exclusion and explain it. (8)

(OR)

b) (i) Explain the following

1. Cristians method (4)

2. Berkeley algorithm (4)

for the synchronization of clocks.

(ii) Write ring based election algorithm, bully algorithm and explain it. (8)

15. a) (i) Explain the problems in concurrent transactions with example. (8)

(ii) What is distributed dead lock? Explain phantom deadlock and edge chasing in distributed dead lock. (8)

(OR)

b) (i) Describe the two phase commit protocol along with its time out actions. (8)

(ii) Explain how services are provided for process groups. (8)

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