Code No: RR410502 **Set No. 1**

IV B.Tech I Semester Supplimentary Examinations, November 2008
DISTRIBUTED SYTEMS
(Common to Computer Science & Engineering and Electronics & Computer Engineering)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Are shared memory multiprocessors distributed systems? Explain
   (b) Contrast the problems of implementing process migration between work stations and between processors within a shared memory multiprocessor. [2+6+4+4]
2. What are the key design issues of Remote Procedure Call System. [16]
3. (a) Can a server invoked by light weight procedure calls control the degree of concurrency within it? Explain.
   (b) Explain why and how a client is prevented from calling arbitrary code within a server under lightweight RPC. [8+8]
4. What is a name service? What are the general name service requirements?[2+14]
5. Explain how the conversation takes place between a client and a server in detail. [16]
6. (a) Explain the two phases in the two-phase commit protocol with the help of a diagram.
   (b) Discuss the performance of the two phase commit protocol. [6+4+6]
7. What is logic of authentication? What are the benefits derived from such a logic. [4+12]
8. Explain DSM using write-update with suitable diagram. [10+6]

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Code No: RR410502 **Set No. 2**

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Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. . Explain about various network technologies. [16]
2. (a) Explain in detail the various levels in the client software with respect to RPC's.
   (b) What are the features of RPC's. [8+8]
3. (a) What is a Null RPC? Explain about RPC performance.
   (b) What are the main components accounting for RPC delay apart from network transmission times? [2+6+8]
4. Write the methods for implementation of
   (a) Request ordering
   (b) Totally ordering. [8+8]
5. (a) Explain backward validation and forward validation.
   (b) Compare forward and backward validation and explain about starvation. [8+8]
6. (a) Explain the reason to have transaction priorities.
   (b) Explain in detail the situation " Probes Travel Downhill" [8+8]
7. Explain log for banking service with relevant diagram. [10+6]
8. Summarize the abstractions provided by the Mach Kernel in detail. [16]

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Code No: RR410502 **Set No. 3**

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Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. Explain about various protocol layers in the ISO- OSI protocol model. [16]
2. What are the key design issues of Remote Procedure Call System. [16]
3. (a) Distinguish between Multiple processes and Threads.
   (b) Explain in detail about "The aliasing Problem". [8+8]
4. Explain about logical time and logical clocks. [8+8]
5. Explain ACID properties and how the transaction are failure and how they are recovered ? [16]
6. How the virtual partitions are implemented ? [16]
7. Explain various methods of attacking and defenses. [16]
8. Explain the problems of Write-Update and Write- Invalidation of distributed shared memory. [8+8]

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Code No: RR410502 **Set No. 4**

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Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. What are various issues involved in a design of a distributed system. [16]
2. (a) What are three protocols involved in RPC Exchange Protocols? Explain.
   (b) Explain about the following:
      i. an Idempotent Operation
      ii. Multipacket messages. [2+6+4+4]
3. (a) Can a server invoked by light weight procedure calls control the degree of concurrency within it? Explain.
   (b) Explain why and how a client is prevented from calling arbitrary code within a server under lightweight RPC. [8+8]
4. What is Election? Explain Bully algorithm and Ring based Election Algorithm. [2+7+7]
5. Explain how the conversation takes place between a client and a server in detail. [16]
6. Explain about two-phase commit protocol for nested transaction. [16]
7. Explain about authentication mechanisms and access control mechanisms. [16]
8. (a) Explain about the various kinds of consistency models that are weaker than sequential consistency.
   (b) What are the advantages of sequential consistency compared to the other consistency models? [8+8]

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