B.E. IT Sem-II.

Total No. of Questions : 12] Nov-Dec. 2012 SEAT No. :

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[4264]-721

B.E. (Information Technology)

DISTRIBUTED SYSTEMS

(2008 Pattern) (Sem. - II)

Time : 3 Hours] *[Max. Marks : 100*

Instructions to the candidates:

1) *Answer Question 1 or 2, 3 or 4, and 5 or 6 from Section - I and Question 7 or 8, 9 or 10, and 11 or 12 from Section - II.*
2) *Answers to the two sections should be written in separate books.*
3) *Neat diagrams must be drawn wherever necessary.*
4) *Figures to the right indicate full marks.*
5) *Assume suitable data, if necessary..*

SECTION - I

Q1) a) Show an example of transparency that may not be desirable in distributed systems. **[8]**

b) Why is a process pool an attractive model from the view point of distributed computation and transparency? **[8]**

OR

Q2) a) What are the advantages and disadvantages of using diskless work stations in a distributed system? **[8]**

b) What is distributed system? Explain different examples of distributed system. **[8]**

Q3) a) What is RPC? Explain role of client and server stub procedures in RPC in the context of a procedural language. **[8]**

b) What is socket? Explain the difference between connection oriented socket and connectionless socket? **[8]**

OR

Q4) a) What is pipe? How pipe is used for inter-process communication? **[8]**

b) Explain CORBA callback and polling model for asynchronous method invocation. **[8]**

Q5) a) What is Election algorithm? Suppose that two processes detect the demise of the coordinator simultaneously and both decide to hold an election using Bully algorithm. What happens? **[10]**

b) Explain global state? What are the different types of global states? **[8]**

OR

P.T.O.

Q6) a) What do you understand by logical time and logical clocks? What is Lamport's contribution for it? Discuss. **[10]**

b) What are advantages and drawbacks of multi-version timestamp ordering in comparison with the ordering timestamp ordering? **[8]**

SECTION - II

Q7) a) What file sharing semantics is used in your network or distributed file system? **[8]**

b) Compare : Coda and xFS distributed file systems. **[8]**

OR

Q8) a) What is naming service X.500? **[8]**

b) How does mounting of a remote file system take place in NFS? Describe the functionality of an auto-mounter in NFS. **[8]**

Q9) a) Why is it difficult to implement the casual memory consistency model for DSM system? **[8]**

b) What is difference between the unit of replication and the granularity of coherence? What are the advantages of small granularity? **[8]**

OR

Q10) a) Discuss the relative merits and demerits of write - update and write - invalidate protocols. **[8]**

b) Discuss design and implementation issues of distributed shared memory. **[8]**

Q11) a) Define the following : **[10]**

i) Arbitrary Failures.
ii) Timing Failures.
iii) Backward Recovery
iv) Forward Recovery
v) Check pointing

b) What is use of stable storage? How stable storage technique is used in recovery. **[8]**

OR

Q12) a) What is process resilience? Explain different design issues of process resilience. **[10]**

b) What is recovery line? Draw and explain domino effect in detail. **[8]**

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