

Total No. of Questions : 12]

B.E. IT Sem - II

Nov-Dec-2012

SEAT No. :

P948

[4264]-721

[Total No. of Pages : 2

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

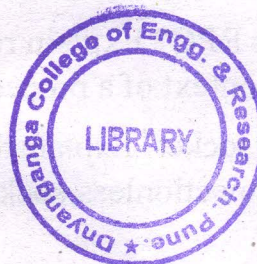
- Q8) a) What is naming service X.500? [8]
b) How does mounting of a remote file system take place in NFS? Describe the functionality of an auto-mounter in NFS. [8]

- 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]

