

P1381

[3764] - 439

B.E. (IT)

DISTRIBUTED SYSTEMS

(2003 Course) (414449)

Time : 3 Hours]

[Max. Marks:100

Instructions to the candidates:

- 1) Answer any 3 questions from each section.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Assume suitable data, if necessary.
- 4) Figures to the right indicate full marks.

SECTION - I

Q1) a) Define Distributed System. Which IPC mechanism is used by nodes to communicate? What are other IPC mechanisms? [8]

b) Explain peer to peer models. [8]

OR

Q2) a) What is mobile and ubiquitous computing? [8]

b) Explain interaction models. [8]

Q3) a) In RPC, how is parameter passing by i) value and ii) reference handled? Give examples. [8]

b) Explain two mechanisms for stream synchronization. [8]

OR

Q4) a) Explain Jini - Distributed Event Specification. [8]

b) What are sockets? Specify socket primitives. [8]

Q5) Explain NFS and CODA using following points : [18]

a) Goal and access model.

b) Cache consistency.

c) Sharing Semantics.

d) Security.

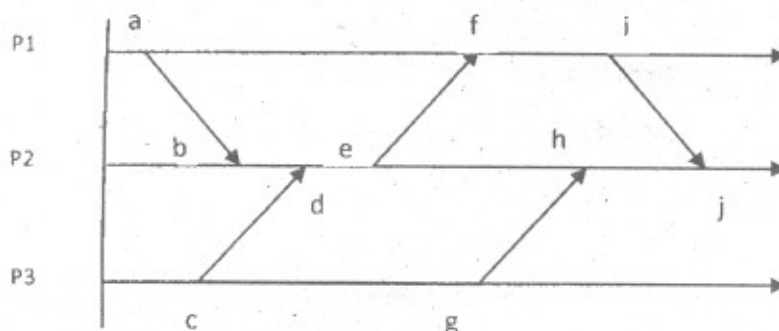
OR

Q6) Explain the problem of removing unreferenced entities. Explain the mechanism of referencing counting, its problem and the solutions. [18]

P.T.O.

SECTION - II

- Q7)** a) Why do we need to have a global clock? Prove with the help of example. [8]
 b) Show vector timestamps in the following figure. [10]



OR

- Q8)** a) Show the instances where we cannot conclude $C(a) < C(b)$ or $C(b) < C(a)$. Draw appropriate figures, if necessary. [10]
 b) What is meant by concurrency control mechanism? Explain Optimistic Concurrency Control mechanism. [8]
- Q9)** a) What is message logging? What is pessimistic and optimistic logging? Which do you think is better? [8]
 b) Explain totally ordered multicast with the help of example. Draw diagram, if necessary. [8]

OR

- Q10)** a) Explain hierarchical feedback control. [8]
 b) Explain causally ordered multicast with the help of example. Draw diagram, if necessary. [8]
- Q11)** a) Write a note on CORBA services (any two) : [8]
 i) time service.
 ii) externalization.
 iii) query service.
 b) What are clusters of workstation? Explain their characteristics. [8]

OR

- Q12)** a) Explain Grid and Cloud Computing. [8]
 b) Explain IIOP and GIOP. [8]

