SSN COLLEGE OF ENGINEERING, KALAVAKKAM – 603 110
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
B.E. Computer Science and Engineering
CS6601 DISTRIBUTED SYSTEMS

Date: 01.02.2018, 8.00-9.30 AM **UNIT TEST – 1 ReTest** **Max. Marks: 50**
Academic Year: 2017-2018 EVEN **Batch: 2015-2019**
Semester: 6. **Faculty: Mr. H.Shahul Hamead & Ms. Y.V.Lokeswari**

PART – A (5X2 =10 Marks)

1. Why physical clock is not suitable for Distributed Systems? **(K2, CO1)**
2. Define Transit-less state. **(K2, CO4)**
3. Define Causal Ordering of messages. **(K2, CO4)**
4. Mention the drawbacks of Vector clock. **(K3, CO4)**
5. What kind of security threats could occur in Distributed Systems? **(K2, CO1)**

PART – B (8 Marks)

6. **Discuss about the following challenges in Distributed Systems. (K2, CO1) (8)**
   a. Failure Handling. (3)
   b. Concurrency. (2)
   c. Transparency. (3)

OR

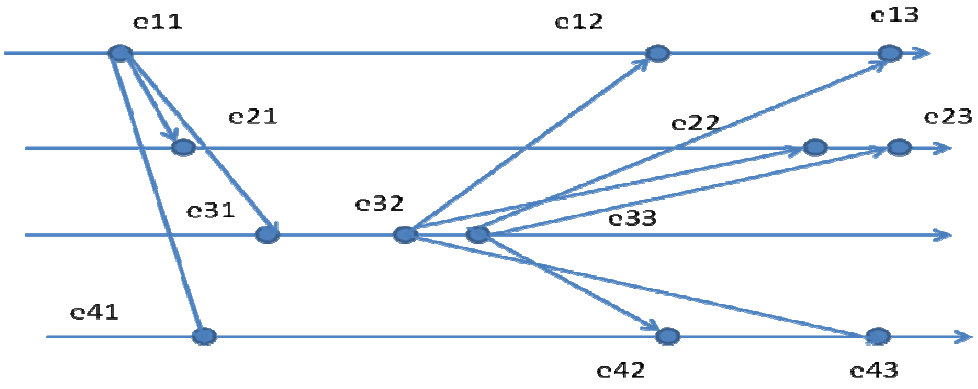
7. **What is a Cut? Draw the Space Time diagram in question no. 10 and mark the following cuts separately. (K2, CO4) (2)**
   a. Inconsistent Cut. (2)
   b. Consistent Cut. (2)
   c. Strongly Consistent Cut. (2)

PART – C (32 Marks)

Answer any two questions

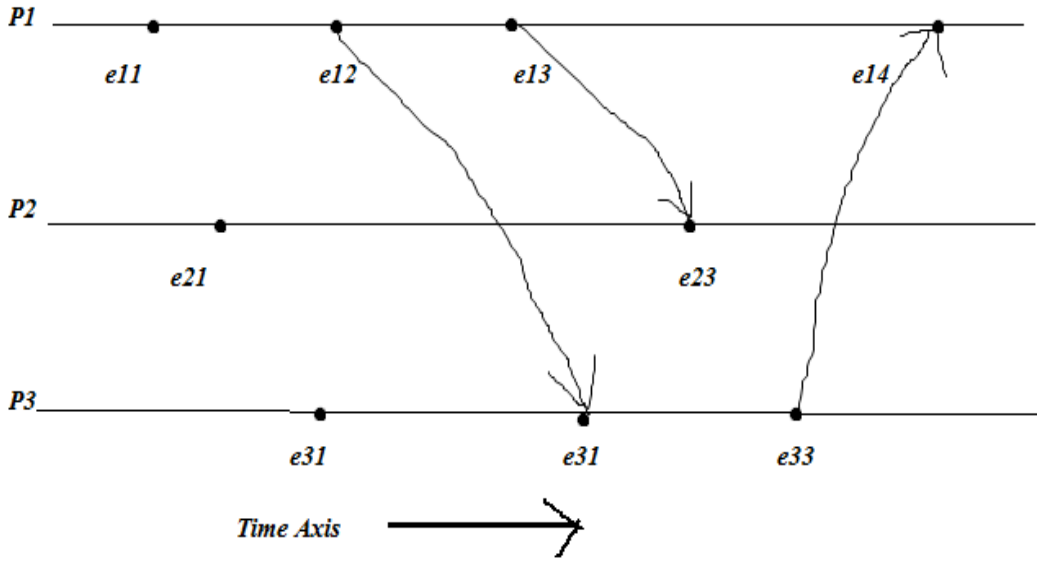
8. **Illustrate the working of Chandy Lamport's Global state recording protocol with step by step traces having at least 3 processes and 2 incoming channels for the initiator process. (K3, CO4) (16)**

9. **For the following Space Time diagram, ensure the causal ordering of messages using Broadcast message ordering protocol. (K3, CO4) (16)**



(P. T. O)

10. Consider the following Space Time diagram, and answer the following questions.
(K3, CO4)



a) Compute Lamport's Logical Clock values for all the events (2)
b) Compute Vector clock values for all the events (4)

c) Show that the limitations of Lamport's clock can be resolved using vector clocks by choosing any appropriate events (4)

d) What does the set of clock values C(i,j,k) at any event represents for Process Pj in Vector Clock ? (2)

e) Identify and prove a pair of concurrent events in the above space-time diagram. (4)

Prepared By

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Reviewed By

HOD / CSE