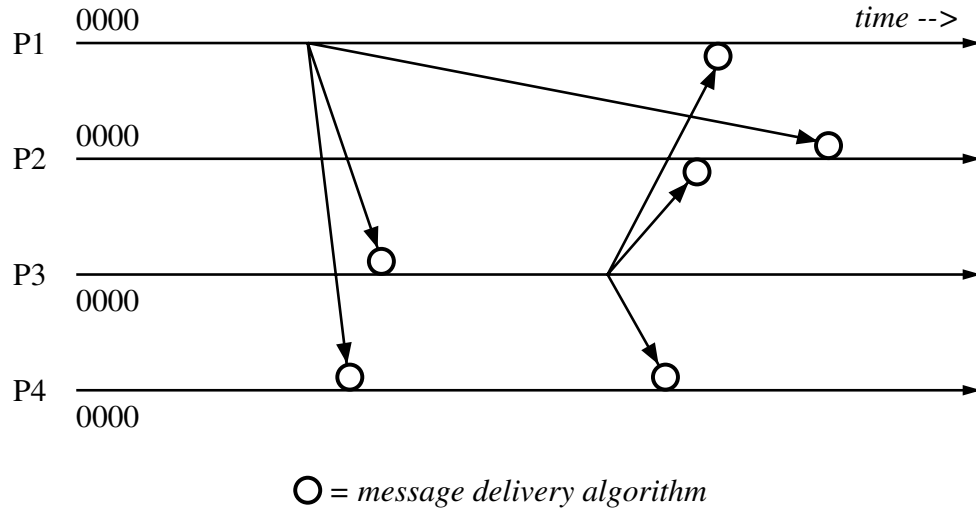


2005 Paper 9 Question 4

Distributed Systems



The above diagram represents a process group that communicates by means of multicast messages. At each process-hosting node, message delivery software decides whether a given incoming message should be delivered to the process or buffered for later delivery. This is achieved by the use of vector clocks.

- (a) Describe, by means of the above example, the vector clock algorithm for delivery of messages in causal order. [15 marks]
- (b) By means of a similar example, show that total ordering of messages is not achieved by this algorithm. [5 marks]