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]