(i) LP can only process local events in non-decreasing timestamp order

(ii)

|  |  |  |  |
| --- | --- | --- | --- |
| LP | Action | Queue | Status |
| D | e@4 | AD = empty  DE = {4, 7} | b@4 |
| E | e@3 | CE = empty  EA = {6} | b@3 |
| A | e@6 | EA = empty  AD = {9} | b@6 |
| D | e@9 | AD = empty  DE = {4, 7, 12} | b@9 |

The system is deadlocked, note that ABCD has empty input queue. For E, input queue CE is empty, hence it is blocked.

(iii)

|  |  |  |  |
| --- | --- | --- | --- |
| LP | Action | Queue | Status |
| A | n@1 | AB = {4\*}  AD = {4, 4\*} | b@1 |
| B | e@4\* | AB = empty |  |
| B | n@4 | BC = {7\*} | b@4 |
| C | e@7\* | BC = empty |  |
| C | n@7 | CE = {3, 10\*} | b@7 |
| D | e@4 | AD = {4\*}  DE = {4, 7} |  |
| D | e@4\* | AD = empty | b@4 |
| E | e@3 | CE = {10\*}  EA = {6} |  |
| E | e@4 | DE = {7}  EA = {6, 7} |  |
| E | e@7 | DE = empty  EA = {6, 7, 10} | b@7 |