For schedules $s$ and $s'$ over the same set of transactions the following statements hold.

(i) $s \approx s' \implies \text{op}(s) = \text{op}(s')$ and $\text{RF}(s) = \text{RF}(s')$

(ii) $s \approx s'$ iff $D(s) = D(s')$

**2.** Design an algorithm for scheduling (pseudo-code scheduler) such that transactions comply with 2PL rules (comply with 2PL rules) whenever a transaction's read or write set is consistent (potential read (RS) and potential write (WS) sets) with the current transaction's read or write set (potential read (RS) and potential write (WS) sets).

**3.** Consider the following condition for removing nodes (and edges) from the serialization graph in the SGT protocol: Remove $t_i$ when it is finished and none of the transactions that were active at the commit or abort time of $t_i$ are active anymore. Show that this condition, albeit seemingly natural, would lead to incorrect behavior of the SGT protocol.

**4.** Show that the condition that the SGT protocol is consistent (consistent (CSR)) with the set of transactions that have been committed (VSR) in the system.

**5.** Consider the following condition for removing nodes (and edges) from the serialization graph in the SGT protocol: Remove $t_i$ when it is finished and none of the transactions that were active at the commit or abort time of $t_i$ are active anymore. Show that this condition, albeit seemingly natural, would lead to incorrect behavior of the SGT protocol.

**6.** Design a protocol for implementing the SGT protocol in a distributed system.