Question 5:

initializeCandidates - Time complexity O(m log m) Space complexity O(m) For each map.put(…) (O(1)) and a heap.add(…) (O(log m)).

castVote - Time complexity O(m) Space complexity O(1) putting key, so has to through value in data structure to put inside

castRandomVote - Time complexity O(m) Space complexity O(1) -

 rigElection - Time complexity $O(p \cdot m)$ Space complexity O(1) - remove rig target inserting Log m removing top other O(m)

getTopKCandidates - Time complexity O(m + k log m) Space complexity O(m)

auditElection - Time complexity O(m log m) Space complexity O(m)

Overall the Election object's state uses O(m) space.