Algorithm 19.6 Proposal distribution over partitions in the Dirichlet process priof

```
Procedure DP-Merge-Split-Proposal (
  σ    // A partition
)
  Uniformly choose two different instances m, l
  if m, l are assigned to two different clusters I, I' then
      // Propose partition that merges the two clusters
    σ' ← σ − {I, I'} ∪ {I ∪ I'}
  else
    Let I be the cluster to which m, l are both assigned
      // Propose to randomly split I so as to separate them
    I_1 ← {m}
    I_2 ← {l}
    for n ∈ I
      Add n to I_1 with probability 0.5 and to I_2 with probability 0.5
    σ' ← σ − {I} ∪ {I_1, I_2}
  return (σ')
```

Exercise 19.31★

Algorithm 19.6 presents a Metropolis-Hastings proposal distribution over partitions in the Dirichlet process prior. Compute the acceptance probability of the proposed move.