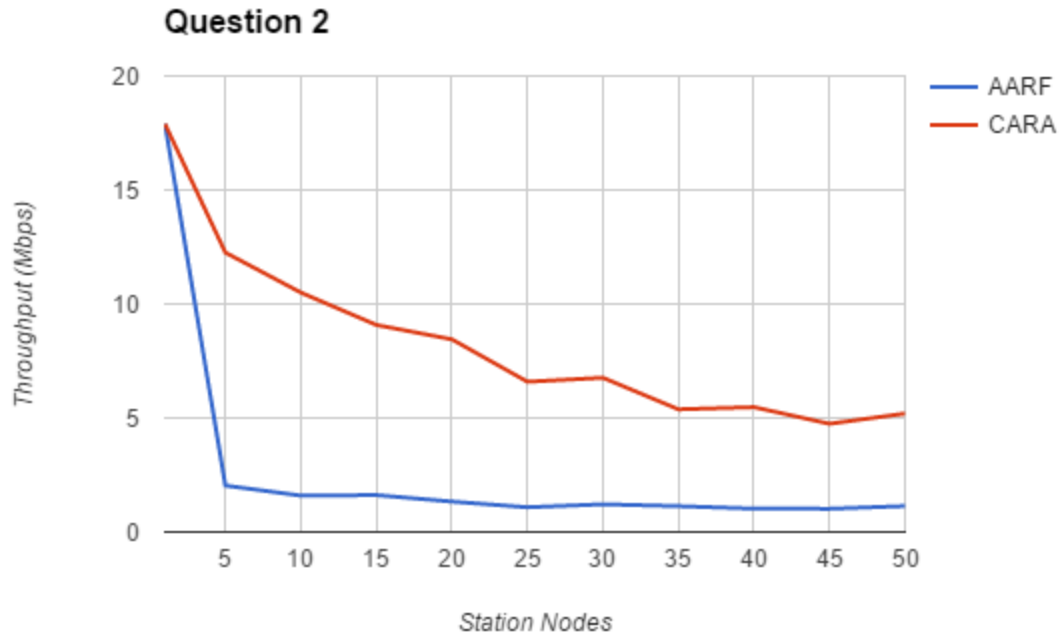


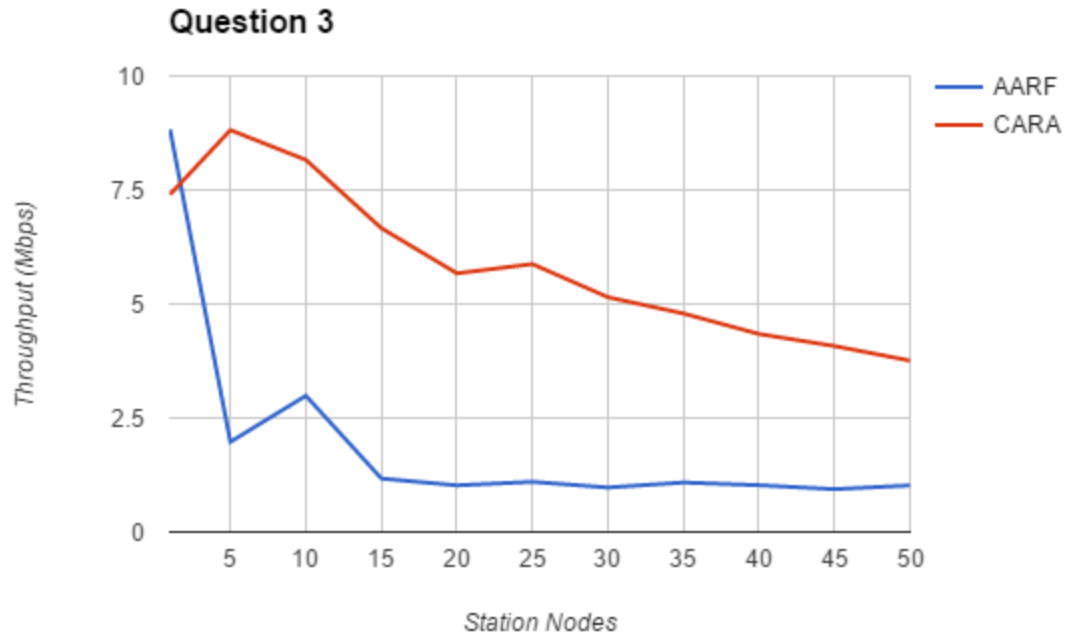
*Question 1: one access point, one station, AARF/CARA, no fading/Rayleigh fading, 5m-100m sender-receiver separation distance (steps of 5m)*

With only one access point and one station, the AARF rate adaption scheme generally produces better throughput than the CARA scheme. Both AARF and CARA are based on ARF, but the improvements CARA implements are focussed on dealing with collisions, whereas AARF provides an improved scheme for dealing with poor channel conditions. With only two nodes CARA's optimizations are not necessary, whereas AARF's optimizations provide improved throughput. The difference is fairly minimal in the presence of Rayleigh fading, however.



*Question 2: one access point, 1-50 station nodes (steps of 5 nodes), nodes randomly distributed on the circumference of a circle of radius 10m centred on the access point, no fading, sender and receiver roles of AP-station pairs randomized*

With more than two nodes, and therefore the potential for collisions, the CARA scheme provides far better throughput than the AARF scheme. This is not surprising, as CARA is specifically designed to reduce collisions.



*Question 3: one access point, 1-50 stations nodes (steps of 5 nodes), nodes randomly distributed within a circle of radius 25m centred on the access point, Rayleigh fading, sender and receiver roles of AP-station pairs randomized*

A similar situation to Question 2, the CARA scheme provides better performance in situations where there is potential for collisions. The difference between the schemes is more pronounced here, however, potentially due to the larger distance between sender-receiver node pairs combined with the effects of fading.