

COMP6733

IoT Design Studio



Week 2 (Revision Problem Set)

Question 1

- Routing protocols can be proactive, reactive, or hybrid. Which of the following statements is true about the Collection Tree Protocol (CTP) in sensor networks?
 - A. CTP is proactive because it sends regular beacons to update neighbours on changes in their ETX metric.
 - B. CTP is reactive because senders demand routes only when they need them, and determine the route with lowest ETX metric.
 - C. CTP is a hybrid routing protocol because it relies on both regular beacons and on on-demand route requests to determine the route with the lowest ETX metric.
 - D. CTP is reactive because it reacts to route inconsistencies by signalling the control plane.
 - E. None of the above.

Question 2

- CTP and RPL uses the Expected Transmissions metric to estimate the cost to reach a destination. How does a node A calculate its ETX to the base station?
 - A. The node A estimates the link quality between itself and the base station and determines the ETX to the base station accordingly
 - B. The node A requests its parent to send its own ETX to the root. When A receives the parent ETX, A computes its ETX to base, ETX_A , as the sum of ETX_{parent} the $ETX_{A \rightarrow parent}$ of its link with its parent.
 - C. The node A initiates a chain of link-by-link ETX requests between itself and the base. The node A then waits for the reply messages which contain the aggregates ETX to base.
 - D. The node A adds the values of ETX_{parent} (ETX of its parent) and $ETX_{A \rightarrow parent}$ (of its link with its parent) which it has locally stored, to determine ETX.
 - E. None of the above.