AI Olympiad, February 2026

1. In the context of the k-arm bandit problem, what is the primary challenge faced by the decision-making algorithm?

   (a) Determining the optimal sequence of actions before the first timeframe begins.

   (b) Balancing exploration of unknown actions with exploitation of known high-reward actions.

   (c) Predicting how the reward for each action will change over time.

   (d) Minimizing the total number of actions taken within the time period T.

   [3 Marks]

   [Total 3 Marks]