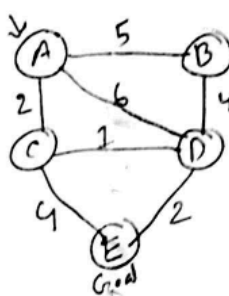


Quiz-1

Course Code: CSE316

Course Title: Artificial Intelligence

Time: 30 minutes

1	A logistics company is planning to deploy autonomous drones for package delivery across an urban area. The drones must handle weather conditions, avoid obstacles, and maintain delivery efficiency. Describe each PEAS component based on this scenario.	[3]
2	<div style="text-align: center;">  <pre> graph TD A((A)) --- 5 B((B)) A --- 2 C((C)) A --- 6 D((D)) B --- 4 D C --- 1 D C --- 4 E((E)) D --- 2 E style E stroke-width:4px </pre> </div> <p>Apply the Uniform-Cost Search (UCS) algorithm to determine the least-cost route in the weighted graph. Demonstrate how UCS expands nodes step-by-step. Conclude by stating the cheapest path from A to E with its total cost.</p>	[5]
3	Referring to the graph and search context in Question 2, design and justify a condition where Iterative Deepening Search (IDS) would be more efficient than Breadth-First Search (BFS).	[3]
4	Based on the same search environment as Question 2, examine how the branching factor (b) and goal depth (d) affect the time and space complexity of BFS, DFS, and Iterative Deepening Search (IDS) algorithms.	[4]