Assignment I : Introduction to AI

Unit 1

Q1. What is AI? How can you define AI from the perspective of thought processes?

Q2. How do philosophy, sociology and economics influence the study of AI?

Q3. What is Turing test? How can it be used to measure the intelligence of a machine?

Q4. How are the dimensions like thinking humanly and thinking rationally used to evaluate intelligence behaviors of a machine?

Unit 2

Q1. How can AI agent be configured using PEAS framework? Design PEAS framework for Football playing agent and Internet shopping assistant.

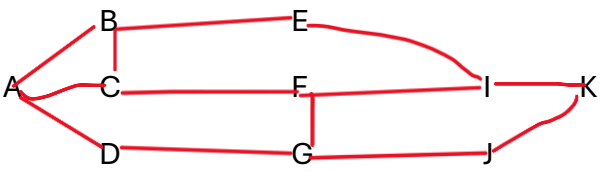
Q2. What is an intelligent agent? Differentiate between model based and utility based agents with example.

Q3. What are the types of environments where agents work on? Explain.

Unit3

Q1. Justify searching is one of the important parts of AI. In search-problem solving, discuss the concepts of state space, state, successor function, goal test and path cost. Illustrate each with suitable examples.

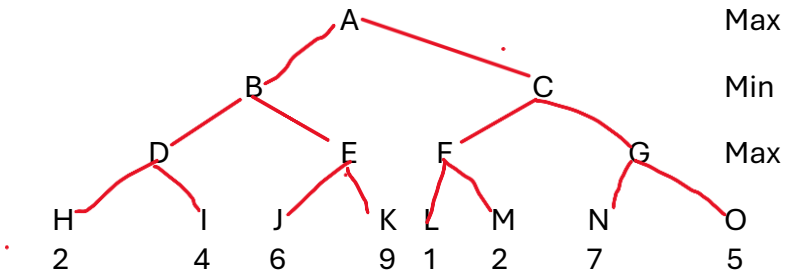
Q2. Contrast between informed and uninformed search strategies. Illustrate how do depth limited and iterative deepening search work on the following graph, given A is start node and K is goal node.



Q3. If we set the heuristic function h(n)=g(n) for both greedy BFS and A* search, what will be the effects in the algorithm? Explain.

Q4. Construct a state space with appropriate heuristic and local costs. Show that greedy BFS is not complete for the state space. Also, illustrate A* is complete and guarantes solution for the same state space.

Q5. Given following search space, determine if there exists any alpha and beta cutoffs (pruning).



Q6. The minimax algorithm returns the best move for max player under the assumption that min plays optimally. What happens when min plays sub-optimally?