**Assignment 1**

Introduction–Definition

1. Define artificial intelligence (AI) in your own words. How does it differ from human intelligence? (CO1)
2. Discuss the history of AI. What are some key milestones and breakthroughs in its development? (CO1)
3. What are the different types of AI systems? Explain the distinctions between narrow AI, general AI, and superintelligence. (CO1)

Future of Artificial Intelligence

1. What are some potential benefits and risks of AI development? Discuss the ethical implications and societal challenges associated with AI. (CO1)
2. How might AI transform various industries and sectors? Provide examples of specific applications and their potential impact. (CO1)
3. What are the challenges and obstacles that need to be addressed to realize the full potential of AI? Discuss technical, ethical, and social challenges. (CO1)

Characteristics of Intelligent Agents

1. Define an intelligent agent. What are the key components of an intelligent agent? (CO2)
2. Discuss the different types of intelligent agents. Explain the differences between simple reflex agents, model-based reflex agents, goal-based agents, utility-based agents, and learning agents. (CO2)
3. What are the characteristics of a rational agent? How can rationality be measured in AI systems? (CO2)

Typical Intelligent Agents

Describe the role of expert systems in AI. What are their limitations and advantages? (CO2)

Explain the concept of natural language processing (NLP). What are some common applications of NLP? (CO2)

Discuss the challenges and opportunities in computer vision. What are some recent advancements in this field? (CO2)

Problem Solving Approach to Typical AI problems

What is a search problem? How can search algorithms be used to solve AI problems? (CO2)

Compare and contrast different search algorithms (e.g., uninformed search, informed search, heuristic search). (CO2)

Explain the concept of a game tree. How can game-playing AI agents use minimax and alpha-beta pruning? (CO2)