

## **Question Bank**

SEMESTER-II – BSc AI

COURSE 4: ARTIFICIAL & COMPUTATIONAL INTELLIGENCE

### **UNIT 1: Introduction to Artificial Intelligence and PEAS Framework**

Short Answer Questions

1. Define Artificial Intelligence.
2. What is the PEAS framework?
3. List the components of PEAS.
4. Differentiate between simple reflex agent and goal-based agent.

Long Answer Questions

1. Explain the applications of Artificial Intelligence.
2. Describe the PEAS framework with a suitable real-world example.
3. Explain different types of intelligent agents.

### **UNIT 2: Expert Systems**

Short Answer Questions

1. Define an Expert System.
2. What are the main components of an Expert System?
3. What is a Knowledge Base?
4. State two limitations of Expert Systems.

Long Answer Questions

1. Explain the architecture and working of an Expert System.
2. Describe rule-based systems in detail.
3. Compare Expert Systems with Intelligent Agents.
4. Discuss the role of Expert Systems in the evolution of AI.

### **UNIT 3: Search Strategies in AI**

Short Answer Questions

1. What is problem formulation in AI?
2. Define Breadth-First Search (BFS).
3. What is heuristic search?
4. State the difference between BFS and DFS.

#### Long Answer Questions

1. Describe Depth First Search.
2. Explain A\* algorithm in detail..
3. Explain the Breadth-First Search (BFS) in detail.

### **UNIT 4: Introduction to Machine Learning**

#### Short Answer Questions

1. Define Machine Learning.
2. Differentiate between supervised and unsupervised learning.
3. What is classification?
4. What is Linear Regression?

#### Long Answer Questions

1. Explain different types of learning in Machine Learning.
2. Differentiate between classification, regression.
3. Describe basic learning algorithms and their applications.
4. Explain reinforcement learning with an example.

### **UNIT 5: Computational Intelligence and Ethics in AI**

#### Short Answer Questions

1. What is Computational Intelligence?
2. Define Neural Networks.
3. What is Responsible AI?
4. Mention two ethical issues in AI.

#### Long Answer Questions

1. Explain the basics of Neural Networks.
2. Discuss the role of Computational Intelligence in AI.
3. Explain ethical and societal challenges in AI.