Practice Questions Foundation of AI

Unit1: Introduction

1.Difficulties in development of expert system .

2. Explain Stages in the development of Expert Systems

3.Explain types of Agent environment

4.Explain types of AI Agents

5. Enlist and Explain different applications of AI

Unit2: Representation and Search

1.Explain all algorithms like breadth first search, uniform cost search, depth first search, best first search, A* search with example

Unit 3: Adversarial Search

1. Explain Min Max algorithm in Game playing with e.g
2. Explain Alpha beta Pruning e.g
3. Explain types of quantifiers with example
4. Explain rules of Inference with e.g
5. Explain Hill climbing algorithm with its features and regions

Unit4: Rule Based Expert System

1. Explain roles of persons involved in development of rule based expert system
2. Explain basic structure of Rule based expert system
3. Explain characteristics of expert system
4. Explain advantages and disadvantages of rule based expert system
5. Explain forward chaining in rule based expert system
6. Explain backward chaining in rule based expert system
7. What is conflict resolution and What are the methods to resolve it in rule based expert system

Unit 5: Uncertainty management in rule based expert system

1. Derive the equation for Bayesian rule
2. What are the sources of uncertain knowledge in expert system
3. What is joint probability and conditional probability?
4. Find all the posterior probability assume that E3 is observed first

	Hypothesis		
Probability	$i = 1$	$i = 2$	$i = 3$
$p(H_i)$	0.40	0.35	0.25
$p(E_1 \mid H_i)$	0.3	0.8	0.5
$p(E_2 \mid H_i)$	0.9	0.0	0.7
$p(E_3 \mid H_i)$	0.6	0.7	0.9

5. How does expert system establish the certainty factor for rules with multiple Antecedents

6. How does expert system cope with two rules having same hypothesis, explain with e.g

7. Rule 1: If A is x

Then C is Z { cf 0.8 }

Rule 2: If B is Y

Then C is Z { cf 0.6}

Find combined certainty factor where given the value of CF (E1) and CF (E2)

Unit 6:

1. What is machine learning? Explain its types?
2. Explain applications of Machine learning
3. Explain machine learning life cycle
4. Explain deep learning applications
5. What are types of deep learning networks
6. Difference between Machine learning and deep learning
7. Explain architecture of artificial neural network