UKA TARSADIA UNIVERSITY

B.Tech (CE)/B.Tech (IT) (Semester 7)
030080710(2018-19)/030090710(2018-19)
Machine Intelligence

Date :07/11/2022 **Time :**1:30PM- 4:30PM
Max. Marks:60

Instructions :

1. Attempt all questions.
2. Write each section in a separate answer book.
3. Make suitable assumptions wherever necessary.
4. Draw diagrams/figures whenever necessary.
5. Figures to the right indicate full marks allocated to that question.
6. Follow usual meaning of notations/abbreviations.

SECTION - 1

Q 1 A) Answer the following in brief (Any 1) **[2]**

I) Explain structure of an agent.

II) Describe rational agents.

Q 1 B) Define PEAS. Explain it with an example of vacuum cleaner agent. [4]

OR

Q 1 B) Explain goal based agent with an appropriate example.

Q 2 A) Answer the following in brief. (Any 1) **[2]**

I) Explain simulated annealing.

II) What is blind search and heuristic search?

Q 2 B) Answer the following in detail. (Any 2) **[10]**

I) Explain how the 8-puzzle problem can be formulated in AI.

II) Explain and evaluate BFS and DFS searching algorithms with respect to their performance.

III) Explain syntax and semantics of first order logic with an example.

Q 3 A) Answer the following in brief. (Any 1) **[2]**

I) Describe learning association with the help of market basket analysis.

II) Enlist and describe various type of machine learning algorithms.

Q 3 B) Answer the following in detail. (Any 2) **[10]**

I) Explain classification and regression with examples.

II) What is linear regression? Derive an equation for single variable regression problem.

III) What is dimensionality reduction? Explain how PCA reduces the dimensionaliity of the data.

SECTION - 2

Q 4 A) Answer the following in brief (Any 1) **[2]**

I) Explain the state exploration method.

II) Explain Non-deterministic Markov Decision Process (MDP).

Q 4 B) Explain model based learning with an example. [4]

OR

Q 4 B) What is reinforcement learning? Explain process of reinforcement learning with its limitations.

Q 5 A) Answer the following in brief. (Any 1) **[2]**

I) Enlist any four activation functions with their mathematical notations.

II) Draw the architecture of neural network that can take two input data and solve two-class problem.

Q 5 B) Answer the following in detail. (Any 2) **[10]**

I) Explain back-propagation neural network with an algorithm.

II) Discuss recurrent neural network with its applications.

III) Explain convolutional network with an example of hand-written character recognition.

Q 6 A) Answer the following in brief. (Any 1) **[2]**

I) Describe interpretability as an advantage of decision tree classifiers.

II) Define MMH with its significance.

Q 6 B) Answer the following in detail. (Any 2) **[10]**

I) What is supervised learning? Explain the need of supervised learning after clustering.

II) Discuss support vector machine with its significance in non-linear classification.

III) Discuss spectral clustering.

UKA TARSADIA UNIVERSITY

B.Tech (CE) (Semester 6)
CE5008(2021-22)
Machine Intelligence

Date :10/11/2022 **Time :**1:30PM- 4:30PM
Max. Marks:60

Instructions :

1. Attempt all questions.
2. Write each section in a separate answer book.
3. Make suitable assumptions wherever necessary.
4. Draw diagrams/figures whenever necessary.
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6. Follow usual meaning of notations/abbreviations.

SECTION - 1

Q 1 A) Answer the following in brief (Any 1) **[2]**

I) Differentiate between weak AI and strong AI.

II) What is single agent and multi agent in the task environment?

Q 1 B) Explain four categories of AI definitions with examples. [4]

OR

Q 1 B) Explain PEAS with an example of a medical diagnosis system.

Q 2 A) Answer the following in brief. (Any 1) **[2]**

I) Differentiate informed and uninformed search techniques.

II) What is time complexity and optimality for measuring an algorithm's performance for solving any problem?

Q 2 B) Answer the following in detail. (Any 2) **[10]**

I) Explain the iterative deepening DFS search method with an example.

II) Explain how the vacuum world problem can be formulated in AI.

III) Enlist and discuss rules of inference.

Q 3 A) Answer the following in brief. (Any 1) **[2]**

I) What is cross-validation? How does it affect generalization?

II) Define Machine Learning with suitable diagram.

Q 3 B) Answer the following in detail. (Any 2) **[10]**

I) Write a short note on Polynomial Regression.

II) Explain feature subset selection with its forward and backward approach.

III) Explain non-linear classification with an example

SECTION - 2

Q 4 A) Write the short note on the following: [6]

a. Q-learning algorithm

b. Action reward mechanism

OR

Q 4 A) Explain single state case problem with an example.

Q 5 A) Answer the following in brief. (Any 1) **[2]**

I) Which neural network can be used for solving multiclass classification problem? Justify your answer.

II) What is an activation function? Explain sigmoidal function.

Q 5 B) Answer the following in detail. (Any 2) **[10]**

I) What is RNN? Compare RNN and back propagation network. How does the recurrent neural network overcome a problem of ANN?

II) Enlist the applications of artificial neural network and explain any two out of them.

III) Discuss LSTM network with its architecture.

Q 6 A) Answer the following in brief. (Any 1) **[2]**

I) Define rule induction. Give an example of it.

II) Give two points of difference between supervised learning and unsupervised learning.

Q 6 B) Answer the following in detail. (Any 2) **[10]**

I) Discuss K-means clustering with its limitations.

II) Explain Expectation Maximization with an example.

III) Discuss support vector machine for linear classification with its significance.

UKA TARSADIA UNIVERSITY

B.Tech (CE) (Semester 6)
CE5008(2021-22)
Machine Intelligence

Date : 20/04/2023 **Time :**9:30AM- 12:30PM
Max. Marks:60

Instructions :

1. Attempt all questions.
2. Write each section in a separate answer book.
3. Make suitable assumptions wherever necessary.
4. Draw diagrams/figures whenever necessary.
5. Figures to the right indicate full marks allocated to that question.
6. Follow usual meaning of notations/abbreviations.

SECTION - 1

Q 1 A) Answer the following in brief (Any 1) **[2]**

I) Enlist four categories of AI definition. Write a definition of any one category.

II) Differentiate fully observable and partially observable environments with an example.

Q 1 B) Explain any four applications of artificial intelligence with examples. [4]

OR

Q 1 B) Explain PEAS with an example of part picking robot problem.

Q 2 A) Answer the following in brief. (Any 1) **[2]**

I) Define: informed and uninformed search strategies.

II) Enlist different ways to evaluate the performance of an algorithm to solve a problem.

Q 2 B) Answer the following in detail. (Any 2) **[10]**

I) Enlist local search algorithms. How does local maxima problem arise in it? Mention the algorithm that is used to resolve this issue.

II) What is knowledge based agent?
For the following Wumpus world problem, find the solution with explanation.

Stench	Wumpus	Stench	
	Stench	Gold	
			Breeze
Agent		Breeze	Pit

III) State the problem formulation for 8-puzzle problem.

Q 3 A) Answer the following in brief. (Any 1) **[2]**

I) Define ill-posed problem and inductive bias.

II) Enlist various type of machine learning algorithms.

Q 3 B) Answer the following in detail. (Any 2) **[10]**

I) What is maximum likelihood estimation? Enlist and explain the issues associated with maximum-likelihood estimation.

II) Explain how over-fitting and under-fitting affects learning of model with an example.

III) Explain feature subset selection with its forward and backward approach.

SECTION - 2

Q 4 A) Answer the following in brief (Any 1) **[2]**

I) Describe deterministic reward and action.

II) What is partially observable state? Define with appropriate example.

Q 4 B) Explain temporal difference learning with an example. [4]

OR

Q 4 B) Explain reinforcement learning as action reward mechanism.

Q 5 A) Answer the following in brief. (Any 1) **[2]**

I) Why step and linear activation functions are not useful in neural network model's prediction task?

II) Draw the simple neural network that can solve any three class problem.

Q 5 B) Answer the following in detail. (Any 2) **[10]**

I) Explain back-propagation of neural network with an appropriate mathematical notations.

II) Discuss RNN network for solving text classification problem. Also discuss limitations of RNN network.

III) Enlist the applications of artificial neural network and explain any two out of them.

Q 6 Answer the following in detail. (Any 2) **[12]**

I) What is supervised learning? Explain the discriminant function to linearly classify data.

II) Answer the following:

a. State the limitations of the k-means algorithm.

b. Find two clusters after two iterations using the k-means clustering algorithm for the below given data. Consider Euclidean distance as a distance function. Initially, A and B are assigned as the centroid of each cluster1 and cluster2 respectively.

	X	Y
A	1	1
B	2	1
C	4	3
D	5	4

III) Explain the expectation maximization algorithm with an appropriate example.

UKA TARSADIA UNIVERSITY

B.Tech (CE)/B.Tech (IT) (Semester 7)
030080710(2018-19)/030090710(2018-19)
Machine Intelligence

Date :18/04/2023 **Time :**1:30PM- 4:30PM
Max. Marks:60

Instructions :

1. Attempt all questions.
2. Write each section in a separate answer book.
3. Make suitable assumptions wherever necessary.
4. Draw diagrams/figures whenever necessary.
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6. Follow usual meaning of notations/abbreviations.

SECTION - 1

Q 1 A) Answer the following in brief (Any 1) **[2]**

I) Draw and describe an agent and an environment.

II) Differentiate static and dynamic environment.

Q 1 B) Define PEAS. Explain it with an example of vacuum cleaner agent. [4]

OR

Q 1 B) Explain four categories of AI definitions with examples.

Q 2 A) Answer the following in brief. (Any 1) **[2]**

I) Show the relation between real world and representation of logic.

II) What is heuristic function? Write its equation for greedy BFS algorithm.

Q 2 B) Answer the following in detail. (Any 2) **[10]**

I) Explain the wumpus world problem and give solution for following data.

Stench	Wumpus	Stench	
	Stench	Gold	
			Breeze
Agent		Breeze	Pit

II) Discuss the components used for defining a problem in AI.

III) Explain depth limited search method with an example.

Q 3 A) Answer the following in brief. (Any 1) **[2]**

I) What is Regression? Enlist types of Regression.

II) Differentiate supervised and unsupervised learning.

Q 3 B) Answer the following in detail. (Any 2) **[10]**

I) Explain the following with a diagram:
(i) Under fitting
(ii) Best-fit model

II) Assume the following data is available. Apply linear regression (least square method) to find the relationship between Independent variable X and dependent variable Y.

X	1	2	3	4
Y	2	4	6	8

III) Explain Bayes' classification algorithm with necessary mathematical equations.

SECTION - 2

Q 4 A) Answer the following in brief (Any 1) **[2]**

I) State the learning function with an appropriate example.

II) State the significance of deterministic and non-deterministic reward.

Q 4 B) Answer the following (Any 1) **[4]**

I) Explain reinforcement learning approaches.

II) Explain any one method of temporal learning difference with an example.

Q 5 A) Answer the following in brief. (Any 1) **[2]**

I) Enlist the activation functions used in artificial neural network.

II) Draw the architecture of artificial neural network.

Q 5 B) Answer the following in detail. (Any 2) **[10]**

I) Enlist and explain any two types of architectures for RNN.

II) Explain the architecture of Adaline model and also write its algorithm.

III) Draw and define various components of biological neuron. State the difference between biological neuron and artificial neuron.

Q 6 A) Answer the following in brief. (Any 1) **[2]**

I) State the difference between feature selection and feature extraction in ML.

II) Define pruning with its types.

Q 6 B) Answer the following in detail. (Any 2) **[10]**

I) Explain spectral clustering technique.

II) Explain expectation maximization algorithm.

III) Explain Bayesian decision theory with an example.

UKA TARSADIA UNIVERSITY

B.Tech (CE)(Semester 6)
CE5008(2021-22)
Machine Intelligence

Date :24/11/2023 **Time :**1:30PM- 4:30PM
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Instructions :

1. Attempt all questions.
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SECTION - 1

Q 1 A) Answer the following in brief (Any 1) **[2]**

I) What is an agent structure? Enlist four basic types of agents.

II) Define the terms:
a. Acting rationally
b. Thinking rationally.

Q 1 B) Explain learning agent with its structure. [4]

OR

Q 1 B) Explain the components used to specify the task environment.

Q 2 A) Answer the following in brief. (Any 1) **[2]**

I) What is knowledge base? How knowledge is derived from the inference engine?

II) Explain multiple-state problem and exploration problem.

Q 2 B) Answer the following in detail. (Any 2) **[10]**

I) Discuss and compare breadth-first and uniform cost algorithm.

II) Explain the n-queen problem and provide its solution using any search strategy.

III) Enlist the drawbacks of hill-climbing search strategy. Explain the searching strategy that overcomes these drawbacks.

Q 3 A) Answer the following in brief. (Any 1) **[2]**

I) Describe how over-fitting affects the machine learning model.

II) Describe model selection procedure.

Q 3 B) Answer the following in detail. (Any 2) **[10]**

I) Explain probability based classification technique with an example.

II) Discuss principal component analysis for dimensionality reduction.

III) Explain maximum-likelihood estimation with the help of an example.

SECTION - 2

Q 4 A) What is reinforcement learning? Explain how reinforcement learning is differ from supervised and unsupervised learning. [6]

OR

Q 4 A) Enlist and explain any five elements of reinforcement learning.

Q 5 Answer the following in detail. (Any 2) **[12]**

I) Discuss RNN network for solving text classification problem. Also discuss limitations of RNN network.

II) Explain back-propagation of neural network with an appropriate mathematical notations.

III) Explain the architecture of Adaline model and also write its algorithm.

Q 6 A) Answer the following in brief. (Any 1) **[2]**

I) Describe hierarchical clustering with its significance.

II) What is pruning? State the need of it.

Q 6 B) Answer the following in detail. (Any 2) **[10]**

I) Explain naive bayes classification with its algorithm.

II) What is discriminant function?Explain classification using discriminant function for multiclass problem.

III) Explain rule based methods which extracts rules from trees.

UKA TARSADIA UNIVERSITY

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CE5008(2021-22)
Machine Intelligence

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III) State the problem formulation for 8-puzzle problem.

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II) Discuss RNN network for solving text classification problem. Also discuss limitations of RNN network.

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Q 6 Answer the following in detail. (Any 2) **[12]**

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II) Answer the following:

a. State the limitations of the k-means algorithm.

b. Find two clusters after two iterations using the k-means clustering algorithm for the below given data. Consider Euclidean distance as a distance function. Initially, A and B are assigned as the centroid of each cluster1 and cluster2 respectively.

	X	Y
A	1	1
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D	5	4

III) Explain the expectation maximization algorithm with an appropriate example.

UKA TARSADIA UNIVERSITY

B.Tech (CE)(Semester 6)
CE5008(2021-22)
Machine Intelligence

Date :24/11/2023 **Time :**1:30PM- 4:30PM
Max. Marks:60

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Q 1 B) Explain the components used to specify the task environment.

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I) What is knowledge base? How knowledge is derived from the inference engine?

II) Explain multiple-state problem and exploration problem.

Q 2 B) Answer the following in detail. (Any 2) **[10]**

I) Discuss and compare breadth-first and uniform cost algorithm.

II) Explain the n-queen problem and provide its solution using any search strategy.

III) Enlist the drawbacks of hill-climbing search strategy. Explain the searching strategy that overcomes these drawbacks.

Q 3 A) Answer the following in brief. (Any 1) **[2]**

I) Describe how over-fitting affects the machine learning model.

II) Describe model selection procedure.

Q 3 B) Answer the following in detail. (Any 2) **[10]**

I) Explain probability based classification technique with an example.

II) Discuss principal component analysis for dimensionality reduction.

III) Explain maximum-likelihood estimation with the help of an example.

SECTION - 2

Q 4 A) What is reinforcement learning? Explain how reinforcement learning is differ from supervised and unsupervised learning. [6]

OR

Q 4 A) Enlist and explain any five elements of reinforcement learning.

Q 5 Answer the following in detail. (Any 2) **[12]**

I) Discuss RNN network for solving text classification problem. Also discuss limitations of RNN network.

II) Explain back-propagation of neural network with an appropriate mathematical notations.

III) Explain the architecture of Adaline model and also write its algorithm.

Q 6 A) Answer the following in brief. (Any 1) **[2]**

I) Describe hierarchical clustering with its significance.

II) What is pruning? State the need of it.

Q 6 B) Answer the following in detail. (Any 2) **[10]**

I) Explain naive bayes classification with its algorithm.

II) What is discriminant function?Explain classification using discriminant function for multiclass problem.

III) Explain rule based methods which extracts rules from trees.

UKA TARSADIA UNIVERSITY

B.Tech (CE)/B.Tech (IT) (Semester 7)
030080710(2018-19)/030090710(2018-19)
Machine Intelligence

Date :24/11/2023 **Time :**1:30PM- 4:30PM
Max. Marks:60

Instructions :

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3. Make suitable assumptions wherever necessary.
4. Draw diagrams/figures whenever necessary.
5. Figures to the right indicate full marks allocated to that question.
6. Follow usual meaning of notations/abbreviations.

SECTION - 1

Q 1 Answer the following (Any 3) **[6]**

I) Describe the term 'Act *humanly'* with an example.

II) Describe Agent structure and enlist four basic types of agents.

III) Explain rational agent with an example.

IV) Write any four task characteristics of Cross-word puzzle task environment.

Q 2 Answer the following in detail. (Any 2) **[12]**

I) Explain greedy best first search method with an example.

II) Explain hill climbing search method with an example.

III) Enlist the problem definition components and describe them for travelling salesman problem problem.

Q 3 A) Answer the following in brief. (Any 1) **[2]**

I) What is association rule mining? Give an example of it.

II) How over-fitting affects the machine learning model?

Q 3 B) Answer the following in detail. (Any 2) **[10]**

I) Explain linear separability with an example.

II) What is feature extraction method? Explain how PCA reduces the dimensionality of the data.

III) Explain bias and variance with suitable examples.

SECTION - 2

Q 4 A) What is reinforcement learning? Enlist and explain any five elements of reinforcement learning. [6]

OR

Q 4 A) Explain k-armed bandit problem in RL perspective.

Q 5 Answer the following in detail. (Any 2) **[12]**

I) Discuss LSTM network with its architecture.

II) Explain convolution neural network with an example.

III) Describe different activation functions of neural network.

Q 6 Answer the following in detail. (Any 2) **[12]**

I) Explain the expectation maximization algorithm with an appropriate example.

II) What is supervised learning? Explain the discriminant function to linearly classify data.

III) Discuss support vector machine for linear classification with its significance.

UKA TARSADIA UNIVERSITY

B.Tech (CE) (Semester 7)
030090710(2018-19)
Machine Intelligence

Date :18/04/2024 **Time :**1:30PM- 4:30PM
Max. Marks:60

Instructions :

1. Attempt all questions.
2. Write each section in a separate answer book.
3. Make suitable assumptions wherever necessary.
4. Draw diagrams/figures whenever necessary.
5. Figures to the right indicate full marks allocated to that question.
6. Follow usual meaning of notations/abbreviations.

SECTION - 1

Q 1 A) Explain the components used to specify the task environment with an example. [6]

OR

Q 1 A) Explain goal based agent and model based agent with a neat diagram.

Q 2 Answer the following in detail. (Any 2) **[12]**

I) Describe the problem formulation for 8-puzzle problem.

II) Explain the iterative deepening DFS search method with an example.

III) Discuss the rules of inference.

Q 3 A) Answer the following in brief. (Any 1) **[2]**

I) Enlist and define types of machine learning algorithms.

II) Enlist the issues associated with generalization.

Q 3 B) Answer the following in detail. (Any 2) **[10]**

I) Explain maximum-likelihood estimation with necessary example.

II) Explain model selection procedure.

III) What is dimensionality reduction? Discuss significance of dimensionality reduction.

SECTION - 2

Q 4 A) Enlist and explain reinforcement learning approaches. [6]

OR

Q 4 A) Explain single state case problem with an example.

Q 5 A) Answer the following in brief. (Any 1) **[2]**

I) Describe and plot binary tanh activation function.

II) Explain the advantage of padding operation in CNN.

Q 5 B) Answer the following in detail. (Any 2) **[10]**

I) Write and explain Backpropagation learning algorithm.

II) Discuss RNN network for solving text classification problem. Also discuss limitation of RNN network.

III) Enlist and explain different types of neural networks based on connection type.

Q 6 Answer the following in detail. (Any 2) **[12]**

I) Explain Decision Tree terminologies. Discuss how Decision Tree is formed.

II) Explain working of sequential covering algorithm.

III) Explain k-means clustering algorithm with an example.

UKA TARSADIA UNIVERSITY

B.Tech (CE)(Semester 6)
CE5008(2021-22)
Machine Intelligence

Date :22/04/2024 **Time :**9:30PM- 12:30PM
Max. Marks:60

Instructions :

1. Attempt all questions.
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4. Draw diagrams/figures whenever necessary.
5. Figures to the right indicate full marks allocated to that question.
6. Follow usual meaning of notations/abbreviations.

SECTION - 1

Q 1 A) Answer the following in brief (Any 1) **[2]**

I) Differentiate stochastic and deterministic environment.

II) What is rational agent?

Q 1 B) Discuss simple and model based reflex agents. [4]

OR

Q 1 B) Write PEAS for face detection system.

Q 2 Answer the following in detail. (Any 2) **[12]**

I) Explain the iterative deepening DFS search method with an example.

II) Explain hill climbing search method with an example.

III) Explain the Wumpus world problem and give solution for following data.

Stench	Gold		
Wumpus	Stench	Breeze	
Stench	Breeze	Pit	Breeze
Agent		Breeze	

Q 3 Answer the following in detail. (Any 2) **[12]**

I) Differentiate feature selection and feature extraction.

II) Explain how to evaluate machine learning models and select the best one.

III) Explain types of regression techniques in machine learning.

SECTION - 2

Q 4 A) Write the short note on the following: [6]

a. Q-learning algorithm
b. Action-reward mechanism

OR

Q 4 A) State and discuss differences of model based and temporal difference based learning.

Q 5 Answer the following in detail. (Any 2) **[12]**

I) Explain different activation function used in neural networks.

II) Discuss Recurrent Neural Network architecture.

III) Explain different network topologies of ANN.

Q 6 A) Answer the following in brief. (Any 1) **[2]**

I) Define the following terms:

a. Linear classification

b. Non-linear classification

II) State the importance of post pruning in decision tree.

Q 6 B) Answer the following in detail. (Any 2) **[10]**

I) Discuss the concept of latent variables.

II) Explain the use of discriminant function for problem with multiple classes.

III) Find out clusters for the given objects in below data set using k-Means clustering algorithm for single iteration. Take value of k=2 and O1 and O2 as initial centroids. Use Euclidean distance measure to find the similarity.

Data Objects	Height(H)	Weight(W)
O1	185	78
O2	170	56
O3	168	62
O4	179	68
O5	182	75
O6	188	78
O7	180	71
O8	180	72
O9	183	84
O10	180	86

UKA TARSADIA UNIVERSITY

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030080710(2018-19)
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6. Follow usual meaning of notations/abbreviations.

SECTION - 1

Q 1 A) Answer the following in brief (Any 1) **[2]**

I) What is agent architecture and agent program?

II) Enlist the properties of task environment with an example.

Q 1 B) Write definition of Artificial Intelligence as per the following categories: [4]

a) Acting humanly
b) Acting rationally
c) Thinking humanly
d) Thinking rationally

OR

Q 1 B) Explain PEAS with an example of face recognition.

Q 2 Answer the following in detail. (Any 2) **[12]**

I) Discuss the role of heuristics in optimizing search algorithms. Provide examples of two different heuristic functions and explain how each function improves search efficiency.

II) Define knowledge representation in artificial intelligence (AI) and describe three different approaches to represent knowledge (e.g., semantic networks, frames, and logic-based representation). Include the advantages and disadvantages of each approach.

III) Explain a problem space in artificial intelligence. Provide a detailed example of how the problem space can be structured for a specific problem, such as the 8-puzzle problem or the travelling salesman problem, including the components involved.

Q 3 Answer the following in detail. (Any 2) **[12]**

I) Enlist and explain various types of learning algorithms.

II) Explain Bayes' classification algorithm.

III) Explain non-linear classification with an example

SECTION - 2

Q 4 A) Discuss model based learning with an example. [6]

OR

Q 4 A) Explain single state case problem with an example.

Q 5 Answer the following in detail. (Any 2) **[12]**

I) Describe the feedforward process in a neural network, detailing how data moves from the input layer to the output layer, including the role of weight adjustments during training.

II) Explain how Long Short-Term Memory (LSTM) networks help overcome the vanishing gradient problem in Recurrent Neural Networks (RNNs), including an example application where LSTMs outperform traditional RNNs.

III) Describe the process of training a Convolutional Neural Network (CNN) for image recognition, focusing on the different types of layers involved and their roles.

Q 6 Answer the following in detail. (Any 2) **[12]**

I) Explain how to extract the decision rules from Decision Tree. Discuss pruning in trees.

II) Explain SVM for linearly separable problem.

III) Explain how Expectation-Maximization algorithm works.