SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

Ramapuram Campus, Bharathi Salai, Ramapuram, Chennai - 600089

FACULTY OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF
COMPUTER SCIENCE AND ENGINEERING

QUESTION BANK

DEGREE / BRANCH: _____

___ SEMESTER

SUB CODE – SUBJECT NAME

Regulation – _____

Academic Year _____

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

QUESTION BANK

Subject Code: 18CSC305J

Subject Name: ARTIFICIAL INTELLIGENCE

SEM/ YEAR: III/VI

Course Outcomes
CO1: Formulate a problem and build intelligent agents
CO2: Gain Knowledge in problem and building intelligent agents
CO3: Understand the search technique procedures applied to real world problems
CO4: Acquire knowledge in planning and learning algorithms
CO5:Gain Knowledge in AI Applications and advances in Artificial Intelligence

UNIT IV			
Planning- Planning problems, Simple planning agent, Planning languages, Blocks world ,Goal stack planning, Mean Ends Analysis, Non-linear Planning, Conditional planning, Reactive planning. Learning-Machine learning, Goals and Challenges of ML, Learning concepts, models, Artificial neural network base learning-Back propogation, Support Vector machines, Reinforcement learning, Adaptive learning, multiagent based learning, Ensemble learning, Learning for decision making, Distributed learning, Speedup learning.			
PART-A (Multiple Choice Questions)			
Q. No	**Questions**	**Course Outcome**	**Competence BT Level**
1	Block world problem is also known as _____ 1. STRIPS 2. Linear Planning 3. Non-Linear Planning 4. Susan Anomaly	CO4	BT1
2	Standard planning algorithms assumes environment to be **1.** Deterministic **2.** Fully observable **3.** Single agent **4.** Stochastic	CO4	BT1
3	Planning problem combines the two major aspects of AI **1.** Search & Logic **2.** Logic & Knowledge Based Systems **3.** FOL & Logic **4.** Knowledge Based Systems	CO4	BT1

4	Machine learning is a subset of 1.Deep Learning 2.Data Science 3.Artificial Intelligence 4.All the above	CO4	BT1
5	Which type of learning best describes the problem of learning to ride a bicycle? 1.Supervised 2.Unsupervised 3.Reinforcement 4.Inductive	CO4	BT4
6	What is used to mitigate overfitting in a test set? 1.Overfitting set 2.Training set 3.Validation dataset 4.Evaluation set	CO4	BT2
7	What is perceptron? 1.A single layer feed-forward neural network with pre-processing 2.A neural network that contains feedback 3.A double layer auto-associative neural network 4.An auto-associative neural network	CO4	BT1
8	Real-Time decisions, Game AI, Learning Tasks, Skill Acquisition, and Robot Navigation are applications of which of the following 1.Supervised Learning: Classification 2.Reinforcement Learning 3.Unsupervised Learning: Clustering 4.Unsupervised Learning: Regression	CO4	BT4
9	Which of the following algorithm is used to obtain the plan directly from the planning graph, instead of using the graph to provide heuristic. 1. BFS/DFS 2. A* 3. Graph-Plan 4. Greedy	CO4	BT1
10	Suppose we want to eliminate the inaccuracy problem in partial-order planning problem or planning problem, then the best data structure to use is the? **1.**Stacks 2.Planning Graphs 3.BST (Binary Search Tree) 4.Queue	CO4	BT1

PART B (4 Marks)			
1	What is meant by Means-Ends Analysis?	CO4	BT1
2	What is planning?	CO4	BT1
3	What are K-Strips?	CO4	BT1
4	What are Strips?	CO4	BT1
5	What is nonlinear planning?	CO4	BT1
6	What are the components of a planning system?	CO4	BT1
7	What is Resilience in Planning?	CO4	BT1
8	Differentiate Search & planning.	CO4	BT1
9	What is contingency planning?	CO4	BT1
10	What are the functions of planning systems?	CO4	BT1
11	What is the need of POP algorithms?	CO4	BT1
12	List out the various planning techniques.	CO4	BT1
13	What is Machine Learning	CO4	BT1
14	Explain the various terms used in reinforcement learning	CO4	BT1
15	What algorithm is used in fraudulent analysis.	CO4	BT4
16	Differentiate adaptive and ensemble learning	CO4	BT2
17	What is Speedup learning?	CO4	BT1
18	Explain the concept of multi agent learning.	CO4	BT1
19	Explain the layers in ANN.	CO4	BT1
20	What is hierarchical planning?	CO4	BT1
PART C (12 Marks)			
1	List out the planning terminologies and components of planning	CO4	BT1
2	Explain the basic plan generation in detail?	CO4	BT2
3	Explain in detail the STRIPS?	CO4	BT2
4	Illustrate STRIPs-style operators that corresponds to the following blocks world description. A ON(A,B,S0) ^ B ONTABLE(B,S0) ^ CLEAR(A,S0)	CO4	BT2
5	Summarize on Nonlinear Planning using Constraint Posting	CO4	BT2
6	Construct the problem of changing a flat tire. The goal is to have a good spare tire properly mounted onto the car's axle, where the initial state has a flat tire on the axle and a good spare tire in the trunk. To keep it simple, our version of the problem is an abstract one, with no sticky lug nuts or other complications. There are just four actions: removing the spare from the trunk, removing the flat tire from the axle, putting the spare on the axle and leaving the car unattended overnight. Write the STRIPS and find out the solution.	CO4	BT3
7	Explain about Hierarchical planning method with example?	CO4	BT2

8	In computers, in many cases, rote learning is used. Give five such examples of rote learning.	CO4	BT1
9	Explain reinforcement learning with an example.	CO4	BT1
10	What is Machine learning? Explain the types of machine learning.	CO4	BT1
11	Place an agent in any one of the room (0,1,2,3,4) and the goal is to reach outside the building. What learning will you use? Explain briefly.	CO4	BT5
12	What learning method can we use to predict the future sales of a company?	CO4	BT4
13	Explain feedforward neural network.	CO4	BT1
14	Using the concept of Ensemble learning, describe the learning by kids.	CO4	BT1
15	Explain in detail about STRIPS and write the components of STRIPS for the given scenario: "Consider a flight journey in a luxurious flight from India to US"	CO4	BT2

Note:

1. **BT Level –** Blooms Taxonomy Level
2. **CO – Course Outcomes**

BT1 – Remember BT2 – Understand BT3 – Apply BT4 – Analyze BT5 – Evaluate BT6 – Create