



**SIDDHARTH GROUP OF INSTITUTIONS:: PUTTUR
(AUTONOMOUS)**

Siddharth Nagar, Narayanavanam Road – 517583

QUESTION BANK (DESCRIPTIVE)

Subject with Code: Artificial Intelligence (18MC9139)

Course & Branch: MCA

Year & Sem: III-MCA & I-Sem

Regulation: R18

UNIT –I

INTRODUCTION, LOCAL SEARCH ALGORITHM AND OPTIMIZATION PROBLEMS

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|-----------|---|--------------|-------|
| 1 | Define Artificial Intelligence. Explain AI in brief. | [L1,L2][CO1] | [12M] |
| 2 | Explain basic types of agent program in any intelligent system. In detail | [L2,L3][CO2] | [12M] |
| 3 | Explain the following Searches.
a) Breadth First Search b) Depth First Search | [L1,L2][CO3] | [12M] |
| 4 | a Examine Depth Limited Search with examples. | [L1,L5][CO4] | [6M] |
| | b Evaluate Local beam search. | | [6M] |
| 5 | Explain in detail about Heuristic Functions. | [L2,L4][CO1] | [12M] |
| 6 | What is A* Search? Design A* search with suitable example. | [L1,L5][CO3] | [12M] |
| 7 | Classify Simulated Annealing with example | [L1,L3][CO4] | [12M] |
| 8 | Explain in detail about CSP. | [L1,L4][CO2] | [12M] |
| 9 | Illustrate uninformed search strategies with examples. | [L2,L5][CO3] | [12M] |
| 10 | Illustrate informed search strategies with examples. | [L2,L5][CO3] | [12M] |

UNIT –II**ADVERSIAL SEARCH, KNOWLEDGE AND REASONING**

1	Explain in detail about Forward and Backward chaining algorithm with example.	[L2,L3][CO2]	[12M]
2	Justify in detail about Logical agents with example.	[L2,L5][CO2]	[12M]
3	Explain the following a) Cryptarithmic problem b) Adversarial Search	[L1,L2][CO4]	[12M]
4	a Examine Minimax Algorithm with examples.	[L1,L4][CO3]	[6M]
	b Evaluate Alpha-Beta Pruning.		[6M]
5	Explain Syntax and Semantic elements of FOL.	[L2,L4][CO5]	[12M]
6	Determine First-Order Logic in detail.	[L1,L5][CO3]	[12M]
7	Explain in detail about Resolution Chaining with examples	[L1,L3][CO4]	[12M]
8	Write short notes on Evaluation functions	[L1,L4][CO2]	[12M]
9	What are the steps involved in Knowledge Engineering process?	[L2,L5][CO1]	[12M]
10	Discuss the following concepts with examples a) Forward chaining b) Backward chaining c) Unification	[L2,L5][CO3]	[12M]

UNIT –III**PLANNING AND LEARNING**

1	Write short notes on classical planning problem with example	[L1,L3][CO1]	[12M]
2	How the performance of a learning algorithm is assessed? Draw a learning curve for the decision tree algorithm.	[L2,L5][CO2]	[12M]
3	Explain the following a) Supervised learning b) Unsupervised learning c) Reinforcement learning	[L1,L2][CO3]	[12M]
4	a Explain language of planning problems	[L1,L4][CO4]	[6M]
	b Discuss about planning with state-space search	[L2,L4][CO4]	[6M]
5	Explain Planning with Propositional Logic.	[L2,L4][CO5]	[12M]
6	What is explanation based learning? Explain in detail with an example	[L1,L5][CO3]	[12M]
7	Explain about Partial order planning.	[L2,L3][CO4]	[12M]
8	Write short notes on Hidden Variables with suitable examples.	[L1,L4][CO3]	[12M]
9	Explain Bayesian Learning with examples	[L2,L5][CO1]	[12M]
10	Summarize the following concepts with examples a) Ensemble learning b) Cumulative learning process c) Relevant based learning	[L3,L4][CO2]	[12M]

UNIT –IV
EXPERT SYSTEMS

1	Define expert systems. Explain with architecture	[L1,L3][CO1]	[12M]
2	Explain applications and domains in Expert systems	[L2,L5][CO3]	[12M]
3	Explain Advantages and Limitations of Expert systems	[L1,L2][CO2]	[12M]
4	a Discuss Production System	[L2,L4][CO4]	[6M]
	b Explain in detail about expert system shell and tools	[L2,L4][CO4]	[6M]
5	Discuss about Artificial Neural Systems	[L2,L4][CO5]	[12M]
6	Write short notes on Non-Procedural Paradigms	[L1,L5][CO3]	[12M]
7	Explain in detail about Expert System.	[L2,L3][CO5]	[12M]
8	Write short notes on Procedural Paradigms	[L1,L4][CO3]	[12M]
9	Explain Expert System with its characteristics	[L2,L5][CO4]	[12M]
10	Summarize the following concepts with examples a) Inductive learning b) Nonprocedural Paradigms	[L3,L4][CO2]	[12M]

UNIT –V
DESIGN OF EXPERT SYSTEMS

1	Explain selecting the appropriate problem	[L2,L3][CO1]	[12M]
2	Explain the expert system life cycle.	[L2,L5][CO2]	[12M]
3	Explain the stages in the development of an expert system	[L1,L2][CO3]	[12M]
4	a) Discuss detailed life cycle model.	[L1,L4][CO4]	[6M]
	b) Discuss about planning with state-space search	[L1,L4][CO4]	[6M]
5	What are the major errors in expert system development stage?	[L2,L3][CO5]	[12M]
6	Discuss expert system design	[L1,L5][CO3]	[12M]
7	Explain Decision tree in detail	[L2,L3][CO4]	[12M]
8	Discuss about certainty factors in expert system design	[L1,L4][CO3]	[12M]
9	Explain Backward chaining in design of expert system	[L1,L5][CO1]	[12M]
10	Write short notes on a) Decision tree b) Backward chaining c) Certainty factors	[L3,L4][CO2]	[12M]

Prepared by:

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