



SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY

Siddharth Nagar, Narayanavanam Road, Puttur – 517583

QUESTION BANK

Subject with Code : ARTIFICIAL INTELLIGENCE (16MC838)

Course & Branch: MCA

Year & Sem: III-MCA & I-Sem

Regulation: R16

UNIT – I

INTRODUCTION, LOCAL SEARCH ALGORITHM AND OPTIMIZATION PROBLEM

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| 1. Define Artificial Intelligence. Explain AI in brief. | 12M |
| 2. Explain basic types of agent program in any intelligent system. In detail | 12M |
| 3. Explain | |
| a. Breadth First Search | 5M |
| b. Depth First Search | 5M |
| c. Depth Limited Search. | 2M |
| 4. Explain | |
| a. Greedy Search | 6M |
| b. A* Search. | 6M |
| 5. Explain in detail about Heuristic Functions. | 12M |
| 6. Write short notes on | |
| a. Hill climbing | 6M |
| b. Local beam search | 6M |
| 7. Explain | |
| a. Simulated Annealing | 6M |
| b. Genetic Algorithm | 6M |
| 8. Explain in detail about CSP. | 12M |
| 9. Explain uninformed search strategies with examples. | 12M |
| 10. Explain informed search strategies with examples. | 12M |

UNIT – II
ADVERSIAL SEARCH, KNOWLEDGE AND REASONING

1. Explain
 - a. Cryptarithmic problem 4M
 - b. Adversarial Search 4M
 - c. Game 4M
2. Explain
 - a. Minimax Algorithm 6M
 - b. Alpha-Beta Pruning 6M
3. Explain in detail about Forward and Backward chaining algorithm with example. 12M
4. Explain in detail about Logical agents with example. 12M
5. Explain Syntax and Semantic elements of FOL. 12M
6. Explain First-Order Logic in detail. 12M
7. Explain in detail about Resolution Chaining with examples. 12M
8. Write short notes on Evaluation functions. 12M
9. What are the steps involved in Knowledge Engineering process? 12M
10. Explain
 - a. Forward chaining 4M
 - b. Backward chaining 4M
 - c. Unification 4M

UNIT – III**PLANNING AND LEARNING**

1. Write short notes on forms of learning. 12M
2. Define and explain
 - (i) Supervised learning 4M
 - (ii) Unsupervised learning 4M
 - (iii) Reinforcement learning 4M
3. How the performance of a learning algorithm is assessed? Draw a learning curve for the decision tree algorithm. 12M
4. Explain language of planning problems. 12M
5. Discuss about planning with state-space search 12M
6. Explain
 - a. Ensemble learning 4M
 - b. Cumulative learning process 4M
 - c. Relevant based learning 4M
7. What is explanation based learning? Explain in detail with an example. 12M
8. Explain Bayesian Learning. 12M
9. Explain about Partial order planning. 12M
10. Explain statistical learning method in detail. 12M

UNIT – IV
EXPERT SYSTEMS

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| 1. Define expert systems. Explain with architecture. | 12M |
| 2. Explain applications and domains in Expert systems | 12M |
| 3. Explain Advantages and Limitations of Expert systems. | 12M |
| 4. Discuss Production System. | 12M |
| 5. Explain in detail about expert system shell and tools. | 12M |
| 6. Discuss about Artificial Neural Systems. | 12M |
| 7. Write short notes on Non-Procedural Paradigms. | 12M |
| 8. Explain in detail about Expert System. | 12M |
| 9. Write short notes on Procedural Paradigms. | 12M |
| 10. Explain Expert System with its characteristics. | 12M |

UNIT – V
DESIGN OF EXPERT SYSTEM

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| 1. Explain selecting the appropriate problem. | 12M |
| 2. Explain the expert system life cycle. | 12M |
| 3. Explain the stages in the development of an expert system. | 12M |
| 4. Discuss detailed life cycle model. | 12M |
| 5. Write short notes on | |
| a. Decision tree | 6M |
| b. Backward chaining | 6M |
| 6. What are the major errors in expert system development stage? | 12M |
| 7. Discuss expert system design. | 12M |
| 8. Explain Decision tree in detail. | 12M |
| 9. Discuss about certainty factors in expert system design. | 12M |
| 10. Explain Backward chaining in design of expert system. | 12M |

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