# Hi-TechInstitute of Engineering&Technology

**DEPARTMENT OF CSE**
**(SEM-5th)SEMESTER2023-24**

**Subject Code: KAI- 501**                                    **SubjectName:AI**
**Faculty Name: Aruna**

*Time:90Minutes*                                                    *TotalMarks:100*

**Note:1.Attemptall Sections.Ifrequireanymissingdata;thenchoosesuitably.**

### SECTION-A

**1. Attempt all question in brief.**                                    **2x 10 = 20**

| Q.No | Question | Marks | CO |
|------|----------|-------|-----|
| a. | Describe the four categories under which AI is classified with examples.. | 2 | 1 |
| b. | What is a Knowledge Based System? Explain. | 2 | 2 |
| c. | Expand LISP and PROLOG. | 2 | 3 |
| d. | What is heuristic search? | 2 | 3 |
| e. | Differentiate Informed & Uninformed search. Give examples. | 2 | 2 |
| f. | Differentiate prepositional & predicate logic. | 2 | 3 |
| g. | What is propositional logic? | 2 | 2 |
| h. | What are knowledge based agents? | 2 | 4 |
| i. | Define alpha & beta values in a game tree. | 2 | 2 |
| J. | Define NLP? | 2 | 5 |

### SECTION-B

**2. AttemptanyFOUR of  the following:**                                    **10 x 3 =30**

| Q.No | Question | Marks | CO |
|------|----------|-------|-----|
| a. | Write the application of artificial intelligence. Define intelligent agents. Describe the structure of intelligent agents.. | 10 | 1 |
| b. | What is the difference between knowledge representation and knowledge acquisition? | 10 | 2 |
| c. | Prove that following statements are inconsistent: i) Aman loves Priya and John is not happy but her parents are happy. ii) If Aman marries Priya then Amar and her friend John will be happy. iii) Aman will marry Priya if Priya loves Aman. | 10 | 3 |
| d. | Explain Min-max procedure. Describe alpha-beta and give other modifications to the min max procedure to improve its performance. | 10 | 2 |
| e. | Write short notes on the following i. N-queen problem ii. Hill climbing search | 10 | 2 |

### SECTION-C

**3. AttemptanyONEpartofthefollowing:**

| Q.No | Question | Marks | CO |
|------|----------|-------|-----|
| a. | Define how Artificial intelligence is different from Human Intelligence. | 10 | 1 |
| b. | Explain BFS and DFS search technique in detail. Describe A* search technique with suitable example. | 10 | 2 |

**4. AttemptanyONEpartofthefollowing:**                                      **10x1 = 10**

| Q.No | Question | Marks | CO |
|------|----------|-------|----|
| a. | **Explain searching techniques with the help of example.** | **10** | **2** |
| b. | **Define game playing technique and also explain MIN MAX algorithm in game playing** | **10** | **2** |

**5. AttemptanyONEpartofthefollowing:**                                      **10x1 = 10**

| Q.No | Question | Marks | CO |
|------|----------|-------|----|
| a. | **Differentiate between forward and backward chaining of Inference with the help of an example.** | 10 | 3 |
| b. | **What is prepositional logic? Define the various inference rules with the help of example.** | 10 | 3 |

**6. AttemptanyONEpartofthefollowing:**                                      **10x1 = 10**

| Q.No | Question | Marks | CO |
|------|----------|-------|----|
| a. | **Explain about the Hill climbing algorithm with its drawback and how it can be overcome?** | 10 | 2 |
| b. | **Define decision tree? Explain it's with suitable example.** | 10 | 3 |

**7. AttemptanyONEpartofthefollowing:**                                      **10x1 = 10**

| Q.No | Question | Marks | CO |
|------|----------|-------|----|
| a. | **Describe the role of computer vision in artificial intelligence.** | 10 | 5 |
| b. | **Describe the role of artificial intelligence in natural language processing.** | 10 | 5 |