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| **P.V.P Siddhartha Institute of Technology** |
| **Department of Computer Science and Engineering** |
| **Course: B. Tech** | **Year: III** | **Semester: I** | **Descriptive: I** | **A.Y:2024-2025** |
| **Subject Code: 20CS4501D**  | **Subject Name: ARTIFICIAL INTELLIGENCE**  | **Regulation:PVP20** |
| **Duration: 1 hr 30 min**  | **Maximum Marks: 15 Marks** | **Date: 16/08/2024** | **Session: F.N**  |
| **Answer all the Questions. Each Question carries 5 Marks 3×5M=15M** |
| **Q. No** |  | **Marks** | **CO** | **Level** |
| 1. | a) | For the given task environment “**Shopping for used AI books on the Internet** “construct the following: - PEAS description **- C**haracteristics/properties - Identify a suitable agent (simple/ Model /Goal/Utility) to perform the task and explain with a schematic diagram.-Design the Agent Program/Functionality as per the identification made above. | 5 | CO4 | L3 |
| 2. | a) | 8-puzzle problem given an initial state and final state to be reached:

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| 2 | 8 | 3 |
| 1 | 6 | 4 |
| 7 |  | 5 |

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| 1 | 2 | 3 |
| 8 |  | 4 |
| 7 | 6 | 5 |

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| **INITIAL STATE** | **GOAL STATE** |

-Identify a suitable Informed(Heuristic) Search strategy to solve the above puzzle-Design an algorithm for the identified search strategy.-Explain step by step process for solving the puzzle using the algorithm described above.   | 5 | CO2 | L3 |
| 3. | a) | Explain in detail about knowledge based agents along with its functionality and architecture. | 5 | CO1 | L2 |