

- N.B.: (1) Question No. 1 is compulsory
(2) Write any four questions out of remaining.
(3) Assume suitable data if required.

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|------------------------|-----|--|----|
| 1 | (a) | Discuss Belief network. | 5 |
| | (b) | Explain Heuristic function with example. | 5 |
| | (c) | Describe robot workspace. | 5 |
| | (d) | Explain Screw Transformation. | 5 |
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| 2 | (a) | Explain A* search with example. | 10 |
| | (b) | What is Uncertainty? Explain Bayesian network with example. | 10 |
| 3 | (a) | Explain various methods of knowledge representation with example. | 10 |
| | (b) | Explain steps in problem formulation with example. | 10 |
| 4 | (a) | Obtain Inverse Kinematic solution for 4-axis SCARA Robot. | 10 |
| | (b) | Discuss various position sensors used in robots. | 10 |
| 5 | (a) | Discuss partial order planning giving suitable example. | 10 |
| | (b) | Explain supervised, unsupervised and reinforcement learning with example. | 10 |
| 6 | (a) | Explain the structure of learning agent. What is role of critic in learning? | 10 |
| | (b) | Describe different types of environments applicable to AI agents. | 10 |
| 7 | | Write short note on | 20 |
| | (a) | Properties of environment | |
| | (b) | Limitations of Hill-Climbing Algorithm | |
| | (c) | PROLOG | |
| | (d) | Crypt Arithmetic | |