

Time : 2 Hours

Total Marks: 60

N.B.

- 1) All questions are compulsory.
- 2) Figures to the right indicate marks.
- 3) Illustration, I depth answers and diagram will be appreciated.
- 4) Mixing of sub-questions is not allowed.
- 5) Each question carries 6 marks.

Q1. Attempt any two of the following:

12 Marks

- a) What is Robot? What are characteristics of Robot.
- b) Write a short note on Robot Components.
- c) Write a short note on Braitenberg's Vehicle
- d) Write a short note on Vacuum Grippers?

Q2. Attempt any two of the following:

12 Marks

- a) State and explain different types of Actuators?
- b) Write a short note on Degree of freedom Locomotion.
- c) State and Discuss different types of Feedback Control.
- d) Write a short note on Sonar sensing.

Q3. Attempt any two of the following:

12 Marks

- a) Define Reactive System with example.
- b) Write a short note on behaviour-based control.
- c) What do you mean by Behavior Arbitration?
- d) Explain the concept of Path Planning.

Q4. Attempt any two of the following:

12 Marks

- a) Differentiate between DFS and BFS.
- b) Explain heuristic function with example.
- c) Explain Dijkstra's algorithm with example.
- d) Explain A* algorithm. What is admissibility in A* algorithm.

Q5. Attempt any two of the following:

12 Marks

- a) Explain state space search.
 - b) Explain branch and bound algorithm with example.
 - c) Explain Biological Vision with example.
 - d) Define the term Planning. What are the important factors affecting planning?
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