

16/05/2025

(3 hours)

Total Marks: 80

- N.B. 1. Question No. 1 is compulsory  
 2. Attempt any **three** questions from remaining five questions  
 3. Assume suitable data if **necessary** and justify the assumptions  
 4. Figures to the **right** indicate full marks
- Q1 A Define Artificial Intelligence and historical evaluation of Artificial Intelligence. 05
- Q1 B Explain BFS and DFS with proper example and performance measures. 05
- C Explain process of knowledge engineering. 05
- D Explain simple reflex agent with the help of neat diagram. 05
- Q2 A List different types of environments and explain environment types for car driving, part picking robot, cross word puzzle and Soccer game applications. 10
- B Why is the PEAS descriptor important in the design and analysis of intelligent agents? How does it aid in understanding agent behavior? 10
- Q3 A Explain the A\* search algorithm with an example. 10
- B What is Prolog? Write a Prolog program to enter three sides of a triangle and find whether given triangle is right angle or not. 10
- Q4 A What is alpha-beta pruning? Explain how it improves the efficiency of the minimax algorithm while still ensuring optimal moves. 10
- B Explain informed and Uninformed Search. Explain all performance evaluation/measures for search Strategies. 10
- Q5 A Explain backward chaining giving suitable example. 10
- B What are belief networks? Explain steps to build belief network with an example. 10
- Q6 A Explain Partial and total order planning with Example 10
- ~~B Explain concept of supervised, unsupervised, semi-supervised and reinforcement learning with example 10~~

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