T.Y. B.Sc IT Sem-V CBCS dt. 13/02/2025

[Time:2.30 Hrs]
[Marks:75]

Please check whether you have got the right question paper.

N.B: 1. All question are compulsory.
2. Figures to the right indicate full marks.

Q.1   Attempt **any three** of the following: 15
a) Demonstrate PEAS properties in automated taxi driving in detail.
b) List and explain the applications of AI.
c) List the different types of Agent Program and explain it in brief.
d) What is artificial intelligence? Explain various definitions of AI.
e) What is PEAS? Describe with any five examples.
f) Describe is an agent, rational Agent, autonomous agent.

Q.2   Attempt **any three** of the following: 15
a) Compare BFS and DFS algorithm in detail
b) Define Hill Climbing Algorithm. Discuss its limitations.
c) Write a note on Heuristic function.
d) Explain a local search algorithm with example.
e) Explain alpha-beta cut-offs in game playing with example.
f) Demonstrate problem formulation in 8 queen problem.

Q.3   Attempt **any three** of the following: 15
a) Explain minimax algorithm with example
b) Write a short note on Wumpus world problem
c) Explain various strategies of game playing
d) Write a short note on propositional theorem proving.
e) Illustrate Resolution algorithm in detail.
f) Explain propositional logic with example.

Q.4   Attempt **any three** of the following:
a) Explain Universal and Existential quantifier with example.
b) Explain Knowledge Engineering process in detail.
c) What is First-Order Logic? Discuss the different elements used in first order logic.
d) Give comparison between forward chaining and backward chaining.
e) What is Resolution? Explain resolution steps with example.
f) What is Unification? Explain in brief about Unification.

Q.5   Attempt **any three** of the following: 15
a) Explain in brief hierarchical planning.
b) With the help of example explain in detail about semantic networks.
c) What is one sensorless planning or conformant planning?
d) Write a short note on conditional planning or contingency planning.
e) Write a short note on Mental Events.
f) Explain in brief Internet Shopping World.

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