Graphic Era HILL UNIVERSITY
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University under section 2(f) of UGC Act, 1956

## Term Evaluation (Odd) Semester Examination September 2025

Roll no.....

Name of the Course: M. Tech CSE
Semester: 1
Name of the Paper: Artificial Intelligence
Paper Code: MCS 143
**Time: 1.5 hour** **Maximum Marks: 50**

**Note:**
*(i)* Answer all the questions by choosing any one of the sub-questions
*(ii)* Each question carries 10 marks.

Q1. CO1 (10 Marks)

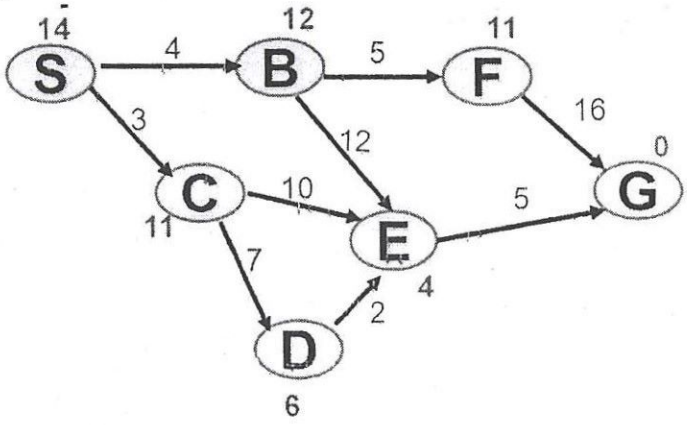
a. How AI is contributing in E-commerce platforms like Amazon and Alibaba? Explain at least five main roles of AI in e-commerce platform.

OR

b. How does the current understanding of AI—as systems that perform tasks requiring human-like intelligence—differ from earlier conceptions, and what implications does this shift have for future developments?

Q2. CO1 (10 Marks)

a. What is admissible in A* Algorithm and how to make A* admissible. Using A* Algorithm, Compute the optimal cost from source to destination. Given that, the data on all the edges indicate actual cost and the data on vertices indicate heuristic estimation cost of that node.




OR

b. How does the PEAS (Performance measure, Environment, Actuators, Sensors) framework help in designing intelligent agents, and what are its practical strengths and limitations?

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Q3. CO1 (10 Marks)

a. Evaluate the effectiveness of depth-first iterative deepening (DFID) compared to other search methods. Discuss scenarios where DFID outperforms alternative search algorithms and vice versa. Provide insights into the practical applications of DFID in problem-solving.

OR

b. Compare simple reflex agents, goal-based agents, and utility-based agents in terms of their architecture, decision-making strategies, and environmental adaptability.

Q4. CO2 (10 Marks)

a. Discuss the challenges associated with reasoning under uncertainty in AI systems. Evaluate the effectiveness of probabilistic models such as Bayesian networks in addressing these challenges.

OR

b. Analyze the process of inference in first-order logic. What are the common inference rules used, and how do they facilitate logical reasoning in AI systems?

Q5. CO2 (10 Marks)

a. Examine the methods used for knowledge acquisition in AI. How does the representation of acquired knowledge impact the performance and adaptability of AI systems?

OR

b. Compare and contrast propositional logic and predicate logic in terms of their expressiveness and applicability in AI. Provide examples illustrating scenarios where predicate logic offers advantages over propositional logic.