Graphic Era
Established by an Act of the State Legislature of Uttarakhand
University under section 2(f) of UGC Act, 1956

Term Evaluation Theory (Even) Semester Regular Examination February 2026

Roll no. 2592625

Name of the Course: BCA(AI/DS)
Semester: II
Name of the Paper: Foundation of Artificial Intelligence
Paper Code: TBD202
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. (10 Marks)

a. What is an Intelligent Agent? Explain the agent–environment relationship and describe the structure of an agent with a neat diagram. (CO2)

OR

b. Explain simple reflex agents and model-based reflex agents. Compare them with suitable examples. (CO2)

Q2. (10 Marks)

a. Define Artificial Intelligence (AI). Explain the scope and importance of AI in modern computing systems. (CO1)

OR

b. Explain knowledge-based agents in detail. Describe their components and working with a suitable real-world example. (CO2)

Q3. (10 Marks)

a. A self-driving car decides whether to slow down, stop, or change lanes by considering safety, passenger comfort, fuel efficiency, and travel time.
Answer the following:

1. Identify the type of intelligent agent used.
2. Explain the role of utility in this scenario.
3. Why is a goal-based agent alone insufficient for this task? (CO2)

OR

b. What are the advantages and limitations of Artificial Intelligence? Explain with suitable examples. (CO1)

Q4. (10 Marks)

a. Describe different types of environments in Artificial Intelligence. Explain each type with appropriate examples. (CO2)

OR

b. Explain the relationship between Artificial Intelligence, Machine Learning, and Deep Learning with a neat diagram. (CO1)

Term Evaluation Theory (Even) Semester Regular Examination February 2026

(10 Marks)

Q5.

a. A smart thermostat senses room temperature and turns the heater ON or OFF based only on the current temperature reading.

Answer the following:

1. Identify the type of agent used.
2. Explain how the agent makes decisions.
3. Mention one limitation of this agent. (CO2)

OR

b. Describe the history and evolution of Artificial Intelligence. Highlight the major milestones in the development of AI. (CO1)