

USN

Course Code 1BAIA103/203

First/Second Semester B.E. Degree Examinations, July 2026
INTRODUCTION TO AI AND APPLICATIONS

Duration: 3 hrs

Max. Marks: 100

Note: 1. Answer any FIVE full questions choosing ONE Full Question from each Module
 2. Missing data, if any, may be suitably assumed

<u>Q. No</u>	<u>Question</u>	<u>Marks</u>	<u>(RBT:CO: PI)</u>
<u>Module-1</u>			
1.	a. Describe the Howard Gardner's theory of multiple intelligences with suitable examples.	08	(2 :1: 1.2.1)
	b. With neat diagrams, explain the following types of Agents (i) Simple Reflex Agents (ii) Model-Based Reflex Agents	06	(2 :1: 1.2.1)
	c. Explain the following types of environments: (i) Static/Dynamic Environment (ii) Single Agent/Multiple Agents	06	(2 :1: 1.2.1)
(OR)			
2.	a. Explain the five major components of intelligence.	08	(2 :1: 1.2.1)
	b. Differentiate between reactive machines, limited memory AI systems, theory of mind AI.	06	(2 :1: 1.2.1)
	c. Explain the mechanism of generic Knowledge Based Agent (KBA).	06	(2 :1: 1.2.1)
<u>Module-2</u>			
3.	a. What is prompt engineering? Explain four reasons why prompt engineering plays vital role in effective use of LLMs.	06	(2 :2: 1.2.1)
	b. Differentiate between Zero-Shot, One-Shot, and Few-Shot prompting with relevant examples.	08	(2 :2: 1.2.1)
	c. Provide the AI with a single example of how to calculate the resistance in a simple circuit. Then write your own prompt asking the AI to solve a similar resistance calculation.	06	(2 :2: 1.2.1)
(OR)			
4.	a. Explain in detail the working process of prompt engineering.	06	(2 :2: 1.2.1)
	b. How does a self-consistency prompt differ from a traditional prompt? Explain with an example.	08	(2 :2: 1.2.1)
	c. Create two different prompts to ask an AI about the topic "Electricity." The first prompt should be vague, and the second prompt should be clear and specific.	06	(2 :2: 1.2.1)

Module-3

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| 5. | a. | Explain any two AI techniques. | 08 | (2 :3: 1.2.1) |
| | b. | Outline the working principle of linear regression. | 06 | (2 :3: 1.2.1) |
| | c. | Explain hierarchical clustering. | 06 | (2 :3: 1.2.1) |

(OR)

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| 6. | a. | Differentiate between supervised and unsupervised learning. | 08 | (2 :3: 1.2.1) |
| | b. | Explain the working of logistic regression. | 06 | (2 :3: 1.2.1) |
| | c. | Explain the two important properties of clusters. | 06 | (2 :3: 1.2.1) |

Module-4

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| 7. | a. | Describe the sources of bias in AI. | 06 | (2 :4: 1.2.1) |
| | b. | Explain the concept of AI as a Service (AIaaS). Describe the factors triggering the growth of AIaaS. | 08 | (2 :4: 1.2.1) |
| | c. | Describe the Nash equilibrium concept with an example. | 06 | (2 :4: 1.2.1) |

(OR)

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| 8. | a. | Describe the primary conditions under which AI becomes risky. | 06 | (2 :4: 1.2.1) |
| | b. | What is an expert system? Describe its components with neat diagram. | 08 | (2 :4: 1.2.1) |
| | c. | What is IoT? Describe the applications of IoT. | 06 | (2 :4: 1.2.1) |

Module-5

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| 9. | a. | Describe the different types of robot based on their capability to perform particular task and degree of human control. | 10 | (2 :5: 1.2.1) |
| | b. | Who uses low-code development? Give the disadvantages of Low-Code/No-Code Platforms. | 10 | (2 :5: 1.2.1) |

(OR)

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| 10. | a. | Describe the application of AI in agriculture. | 10 | (2 :5: 1.2.1) |
| | b. | What is a drone? Describe any 10 applications of drones using AI. | 10 | (2 :5: 1.2.1) |

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