

# WB Board Class 12 Artificial Intelligence Question Paper(Memory Based)

Time Allowed :3 Hour	Maximum Marks :60	Total Questions :24
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## General Instructions

Read the following instructions very carefully and strictly follow them:

- Answers to this Paper must be written on the paper provided separately.
- You will not be allowed to write during the first 15 minutes
- This time is to be spent in reading the question paper.
- The time given at the head of this Paper is the time allowed for writing the answers,
- The paper has four Sections.
- Section A is compulsory - All questions in Section A must be answered.
- You must attempt one question from each of the Sections B, C and D and one other question from any Section of your choice.

1. Explain the 10 stages of the Foundational Methodology for Data Science.

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2. Why is the "Business Understanding" stage considered the most critical phase of an AI project?

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3. Define the 5 Vs of Big Data: Volume, Velocity, Variety, Veracity, and Value.

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4. Describe the five stages of Design Thinking: Empathize, Define, Ideate, Prototype, and Test.

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5. Differentiate between Supervised and Unsupervised Learning with real-world examples.

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6. Explain the concept of Linear Regression and the role of the Mean Squared Error (MSE) loss function.

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7. What is the Gradient Descent algorithm and how does it help in model optimization?

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8. Explain the purpose of the Train-Test Split technique in evaluating model performance.

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9. Explain the biological motivation behind Artificial Neural Networks (ANN).

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10. Define Computer Vision and list its primary pipeline stages (Acquisition, Pre-processing, Feature Extraction).

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11. Explain the Turing Test and its significance in measuring machine intelligence.

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12. Discuss the major ethical issues in AI, such as Bias, Privacy, and Accountability.

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13. What is a Confusion Matrix, and how do you calculate Accuracy, Precision, and Recall from it?

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