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People's Democratic Republic of Algeria

Ministry of Higher Education and Scientific Research

Larbi Ben M'Hidi University of Oum El Bouaghi

Faculty of Exact Sciences, Natural Sciences, and Life

Department of Material Sciences



Examination of Semester 2

Field:	Physics
Speciality:	Physics of Materials
Level:	Master 1
Module:	Artificial Intelligence and Machine Learning 2
Date:	13/05/2026
Time:	13H00 – 14H30

Student Name: _____

Registration Number: _____

Group / Section: _____

Multiple Choice Exam

Instructions

- Choose **one correct answer** for each question.
- Write your answers clearly on the answer sheet.
- No documents or electronic devices are allowed unless authorized.
- Read all questions carefully before answering.

- Q1.** Artificial Intelligence (AI) is mainly concerned with:
- A. **Building systems that can perform intelligent tasks**
 - B. Creating only computer hardware
 - C. Designing internet cables
 - D. Managing databases only
- Q2.** Machine Learning (ML) is a subfield of AI that:
- A. Uses only robots
 - B. **Learns patterns from data**
 - C. Builds physical machines only
 - D. Replaces mathematics
- Q3.** Which of the following is an example of supervised learning?
- A. Clustering
 - B. **Classification**
 - C. Dimensionality reduction
 - D. Pattern grouping without labels
- Q4.** Supervised learning requires:
- A. Unlabeled data
 - B. Random signals
 - C. **Labeled data**
 - D. No data
- Q5.** Unsupervised learning mainly aims to:
- A. Predict labeled outputs
 - B. **Discover hidden patterns in data**
 - C. Encrypt information
 - D. Build hardware systems
- Q6.** Which task is associated with regression?
- A. **Predicting house prices**
 - B. Grouping customers
 - C. Detecting clusters
 - D. Sorting images manually
- Q7.** Classification is used when the output is:
- A. Continuous
 - B. Numerical only
 - C. **A category or class**
 - D. Random
- Q8.** Clustering is a type of:
- A. Supervised learning
 - B. Reinforcement learning
 - C. **Unsupervised learning**
 - D. Regression
- Q9.** Which algorithm is commonly used for classification?
- A. K-Means
 - B. Linear Regression
 - C. **Decision Tree**
 - D. PCA
- Q10.** Which algorithm is commonly used for clustering?
- A. **K-Means**
 - B. Logistic Regression
 - C. Linear Regression
 - D. Random Forest
- Q11.** Linear Regression is mainly used for:

- A. Classification
- B. Clustering
- C. Predicting continuous values
- D. Image segmentation

Q12. Logistic Regression is mainly used for:

- A. Clustering
- B. Classification
- C. Dimensionality reduction
- D. Data cleaning

Q13. A dataset usually contains:

- A. Only outputs
- B. Features and labels
- C. Only labels
- D. Hardware components

Q14. Feature selection is important because it:

- A. Increases irrelevant data
- B. Removes useful data only
- C. Improves model performance by selecting important variables
- D. Deletes all data

Q15. Which step comes first in a machine learning project?

- A. Model deployment
- B. Data collection
- C. Final prediction
- D. Hyperparameter tuning

Q16. Overfitting occurs when a model:

- A. Performs well on training data but poorly on new data
- B. Has too little data
- C. Is too simple
- D. Cannot learn

Q17. Underfitting occurs when a model:

- A. Learns noise perfectly
- B. Is too complex
- C. Is too simple to capture patterns
- D. Uses too many features

Q18. Which metric is commonly used for classification evaluation?

- A. Accuracy
- B. Mean Squared Error only
- C. Variance only
- D. Distance

Q19. Which metric is commonly used for regression evaluation?

- A. Accuracy
- B. Mean Squared Error (MSE)
- C. Precision only
- D. Recall only

Q20. The main goal of machine learning is to:

- A. Replace all humans
- B. Learn from data to make predictions or decisions
- C. Build larger computers
- D. Eliminate mathematics

Student Answer Sheet

Q	Ans.	Q	Ans.	Q	Ans.	Q	Ans.
1		6		11		16	
2		7		12		17	
3		8		13		18	
4		9		14		19	
5		10		15		20	

Student Signature: _____

Correction Key

Q	Ans.	Q	Ans.	Q	Ans.	Q	Ans.
1	A	6	A	11	C	16	A
2	B	7	C	12	B	17	C
3	B	8	C	13	B	18	A
4	C	9	C	14	C	19	B
5	B	10	A	15	B	20	B