

People's Democratic Republic of Algeria  
The Ministry of Higher Education and Scientific Research  
Abbes Laghrour University Khenchela  
Faculty of Sciences and Technologies  
The Department of Mathématiques et Informatique

Field/Sector/Specialization: Mathematics and Computer Science / Computer Science / Mathematics and Computer Science applied to the Humanities and Social Sciences

Semester : 03 / Academic Year: 2025/2026

**Exam correction : Applied Psycho-Sociology in Mathematics-Computer Science**

Time: 1H/30min

Date: 22/01/2026

Name:.....

**The Point/20**

Surname:.....

**Question:**

1/ choose the correct answer: **16 Points**

1-What does UI (User Interface) mainly refer to?

- A \_ How the user feels emotionally while using a system
- B \_ The visual and interactive elements of a system
- C \_ The psychological impact of technology
- D \_ The speed of internet connection

2-What are **social norms**?

- A \_ Unwritten rules that guide acceptable behavior in society
- B \_ Scientific theories about groups
- C \_ Personal habits of individuals
- D \_ Written laws enforced by governments

3-What is the main goal of mathematical modeling of human behavior?

- A \_ To eliminate psychology and sociology
- B \_ To study mathematics without social applications
- C \_ To convert human behavior into quantitative models that can be analyzed and predicted

4-In game theory, what does a strategy represent?

- A \_ The final result of the game
- B \_ The information players have
- C \_ The possible choices or actions available to a player

5-Which application uses the default heuristic, where users tend to keep the default option without changing it?

- A \_ Behavioral UX design
- B \_ Agent-based modeling
- C \_ Recommendation systems

6-What is the main difference between the SIR and SIS models?

- A \_ SIS has no infected state
- B \_ In SIS, recovered individuals become susceptible again
- C \_ SIR is used only for diseases

7-What do cognitive algorithms mainly aim to do?

- A \_ Replace human intelligence completely
- B \_ Analyze physical machines
- C \_ Mimic how the human mind perceives, learns, and makes decisions

8-What is the main goal of the ACT-R model?

- A \_ To store data in databases
- B \_ To simulate human thinking and cognitive processes
- C \_ To study economic inflation

9-Which neural network is mainly associated with memory in human cognitive processes?

- A \_ LSTM

- B \_ Graph networks
- C \_ CNN

10-What is the main difference between classification and regression in supervised learning?

- A \_ Classification outputs numbers, regression outputs classes
- B \_ Classification outputs classes, regression outputs numerical values
- C \_ Both output only text labels

11-Which type of algorithm is used to optimize the placement of elements in a user interface?

- A \_ Information architecture algorithms
- B \_ Image recognition algorithms
- C \_ Optimization algorithms

12-Which type of tracking records actions such as clicks, page views, and form submissions?

- A \_ Session Tracking
- B \_ User Interaction Tracking
- C \_ Event Tracking
- D \_ Performance Tracking

13-What is the main goal of clustering in unsupervised learning?

- A \_ Predict a known output
- B \_ Divide data into groups where items in the same group are similar
- C \_ Store data in a database

14-Which centrality measure identifies an opinion leader who acts as a bridge between different groups?

- A \_ Betweenness Centrality
- B \_ Closeness Centrality
- C \_ Degree Centrality

15-What does Fitts' Law mainly describe in human-computer interaction?

- A \_ How users make decisions between multiple options
- B \_ How users remember passwords
- C \_ How button size and distance affect the time it takes to click

16-What are the two main components of a sociotechnical system?

- A \_ Hardware and software only
- B \_ Technical components and social components
- C \_ Individuals and culture only

2/ What are the types of supervised learning? **2 Points**

1-Classification.....

2-regression.....

3/ What are the main types of centrality measures used in social network analysis? **2 Points**

1-Centrality Degree.....

2-Betweenness Centrality.....

3-Closeness Centrality.....

4-Eigenvector Centrality.....