Fundamentals of Game Theory

Game Theory · Practice Test · 12 Questions

1. What is the name of the famous game theory scenario where two prisoners must decide whether to betray each other or cooperate?

A) The Zero-Sum Game
B) The Prisoner's Dilemma
C) The Nash Equilibrium
D) The Pareto Efficiency

2. Which mathematician is most famously associated with the concept of the 'Nash Equilibrium'?

A) John Nash
B) Alan Turing
C) Isaac Newton
D) Blaise Pascal

3. In game theory, what is a 'zero-sum' game?

A) A game where everyone loses
B) A game where one person's gain is exactly equal to the other's loss
C) A game that has no winner
D) A game that involves no strategy

4. What does the term 'cooperation' refer to in the context of the Prisoner's Dilemma?

A) Working together for mutual benefit
B) Betraying the other player
C) Choosing the option that harms the opponent
D) Ending the game early

5. Game theory is primarily used as a tool in which field of study?

A) Biology
B) History
C) Economics
D) Physics

6. What is a 'dominant strategy' in game theory?

A) A strategy that is only used by experts
B) A strategy that is optimal regardless of what the other player does
C) A strategy that requires luck to win
D) A strategy that is prohibited by the rules

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7. What is the goal of a 'Nash Equilibrium' in a game?

A) To ensure everyone wins equally
B) To reach a state where no player benefits from changing their strategy alone
C) To eliminate all competition
D) To maximize the total reward of all players combined

8. Which branch of mathematics provides the formal foundation for game theory?

A) Calculus
B) Statistics
C) Probability and Set Theory
D) Trigonometry

9. In game theory, what is a 'player' defined as?

A) A human participant only
B) A decision-making entity
C) A piece on a game board
D) A spectator of the game

10. Which famous book by John von Neumann and Oskar Morgenstern helped establish game theory as a distinct field?

A) The Wealth of Nations
B) Theory of Games and Economic Behavior
C) Principia Mathematica
D) The Art of War

11. A 'non-zero-sum' game implies that:

A) The total outcome can be mutually beneficial or mutually harmful
B) The game is impossible to win
C) One player must lose for another to win
D) There are no rules in the game

12. In what decade was the foundational work for modern game theory primarily developed?

A) 1900-1910
B) 1940-1950
C) 1980-1990
D) 2000-2010

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