Fundamentals of Game Theory

Game Theory · Answer Key · 12 Questions

1. Which mathematician is often credited as the founder of modern game theory through the publication of 'Theory of Games and Economic Behavior'?

A) John von Neumann
B) Alan Turing
C) Claude Shannon
D) Kurt Gödel

2. In the Prisoner's Dilemma, what is the 'dominant strategy' for an individual player when acting purely in their own rational self-interest?

A) Cooperate
B) Defect
C) Remain Silent
D) Randomize

3. What term describes a situation in a game where no player can benefit by changing their strategy while the other players keep theirs unchanged?

A) Pareto Efficiency
B) Zero-Sum Balance
C) Nash Equilibrium
D) Minimax Theorem

4. 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 balanced by the losses of others
C) A game that results in a draw
D) A game with no clear winner

5. Who was the game theorist and mathematician whose life inspired the biographical film 'A Beautiful Mind'?

A) John Nash
B) Herbert Simon
C) Robert Aumann
D) Thomas Schelling

6. What is the primary focus of 'Cooperative Game Theory'?

A) Individual profit maximization
B) How coalitions or groups interact
C) The study of war tactics
D) Purely random outcomes

7. Which concept in game theory refers to a strategy that minimizes the maximum possible loss?

A) Maximax
B) Minimax
C) Nash equilibrium
D) Tit-for-tat

8. What classic game theory scenario demonstrates why two completely rational individuals might not cooperate, even if it appears that it is in their best interests to do so?

A) The Ultimatum Game
B) The Prisoner's Dilemma
C) The Centipede Game
D) The Hawk-Dove Game

9. In the context of the Ultimatum Game, if the 'proposer' offers a split and the 'responder' rejects it, what is the outcome for both players?

A) Both receive nothing
B) The proposer receives the full amount
C) The responder receives the full amount
D) They reset the game

10. What field of study heavily utilizes game theory to model the evolution of traits and social behaviors in animal populations?

A) Quantum Physics
B) Evolutionary Biology
C) Geology
D) Meteorology

11. What is the 'Tit-for-Tat' strategy most commonly associated with?

A) The Iterated Prisoner's Dilemma
B) The Ultimatum Game
C) Zero-sum tournaments
D) Auction theory

12. Which 1994 Nobel Prize in Economic Sciences was awarded to John Nash, Reinhard Selten, and John Harsanyi?

A) Game Theory
B) Macroeconomics
C) Behavioral Finance
D) International Trade