

Game Theory Basics

Game Theory · Practice Test · 20 Questions

1. Who is often considered the 'father of game theory' for his work on the minimax theorem?

- A) John von Neumann
- B) Alan Turing
- C) Isaac Newton
- D) Albert Einstein

2. In game theory, what is the term for a situation where no player can benefit by changing their strategy while others keep theirs unchanged?

- A) Zero-sum equilibrium
- B) Nash equilibrium
- C) Pareto efficiency
- D) Prisoner's dilemma

3. A game where one person's gain is exactly balanced by the losses of other participants is known as what?

- A) Cooperative game
- B) Zero-sum game
- C) Sequential game
- D) Perfect information game

4. Which famous scenario illustrates why two rational individuals might not cooperate, even if it appears that it is in their best interest to do so?

- A) The Tragedy of the Commons
- B) The Prisoner's Dilemma
- C) The Monty Hall Problem
- D) The Birthday Paradox

5. What type of game involves players making moves one after another, rather than simultaneously?

- A) Sequential game
- B) Simultaneous game
- C) Random game
- D) Static game

6. Which mathematician and Nobel laureate was the subject of the film 'A Beautiful Mind'?

- A) John Nash
- B) John von Neumann
- C) Ken Binmore
- D) Robert Aumann

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

- A) A strategy that only works in large groups
- B) A strategy that provides the best outcome regardless of the opponent's choice
- C) A strategy that requires cheating to win
- D) A strategy that is only used by the leader

8. In game theory, 'perfect information' means that players are aware of what?

- A) The future of the stock market
- B) All previous moves made by all players
- C) The personality of their opponents
- D) The final score of the game before starting

9. What does the 'payoff' represent in a game theory model?

- A) The cost of playing the game
- B) The amount of time spent playing
- C) The outcome or reward a player receives
- D) The number of players involved

10. Which branch of mathematics is game theory most closely associated with?

- A) Geometry
- B) Calculus
- C) Probability and statistics
- D) Trigonometry

11. In a 'cooperative game,' players are able to do what?

- A) Form alliances and make binding agreements
- B) Only play against computers
- C) Hide their moves from the referee
- D) Change the rules mid-game

12. The study of games where players have multiple turns and the game progresses over time is called what?

- A) Repeated games
- B) Instant games
- C) Solitary games
- D) Finite games

13. What is a 'normal form' representation of a game often displayed as?

- A) A circular graph
- B) A grid or matrix
- C) A narrative paragraph
- D) A three-dimensional sculpture

14. In game theory, what is the 'strategy set'?

- A) The list of all possible actions available to a player
- B) The clothes players wear during a game
- C) The specific sequence of winners
- D) The budget set aside for the game

15. Which of these is a real-world field where game theory is commonly applied?

- A) Astronomy
- B) Economics
- C) Geology
- D) Zoology

16. What is the main goal of a player in a competitive game theory model?

- A) To maximize their own payoff
- B) To ensure the game lasts as long as possible
- C) To eliminate all opponents physically
- D) To make the game fair for everyone

17. In the context of game theory, what is a 'player'?

- A) An actor in a movie
- B) A decision-maker within a game
- C) A person who plays sports
- D) A mechanical device

18. What describes a 'non-zero-sum' game?

- A) The total outcome is zero
- B) The total outcome can be positive or negative for all players
- C) Players cannot talk to each other
- D) The game has no clear winner

19. Which concept describes the total resources available to be shared among players at the end of a game?

- A) The pie
- B) The bank
- C) The treasury
- D) The dividend

20. Game theory is primarily used to analyze what type of human behavior?

- A) Spontaneous emotional outbursts
- B) Strategic decision-making
- C) Reflexive physical movements
- D) Random memory recall