

GAME THEORY

INTRODUCTION

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1. Who developed the theory of games ?

Ans : The first known discussion of game theory occurred in a letter believed to be written in 1713 by Charles Waldegrave. In 1944 , **John Vonn Newman** published the book *Theory of Games and Economic Behavior* co-authored with **Oskar Morgenstern**. From this book the proper mathematical treatment of games started.

2. What is Game theory ?

Ans: Game theory is a mathematical theory that deals with the general features of competitive situation. It is the study of the ways in which interacting *choices* of economic *agents* produce *outcomes* with respect to the *preferences* (or *utilities*) of those agents, where the outcomes in question might have been intended by none of the agents.

3. What is a Game ?

Ans: Game is a competitive situation where at least two parties are involved. Each participant in a game is called a **Player**.

4. What is a competitive Game in the theory of Games ?

Ans: A competitive situation is called a game if the following conditions are satisfied.

- a) Finite Number of Competitors: The number of competitors or Players in a game must be finite.
- b) Courses of Action : Each of n players has available to him a list of finite number of possible courses of action.
- c) Play: A play is said to have played when each of the players choose a single course of action from the list of courses of action available to him.
- d) Outcome: Each play results in a set of outcome or results which may be positive, negative

5. What is a finite Game ?

Ans: A game is termed as a finite game if it has a finite number of moves, each of which involves only finite number of alternatives. In other words Finite games are those instrumental activities - from sports to politics to wars - in which the participants obey rules, recognize boundaries and announce winners and losers.

6. What is an infinite game?

Ans: A game is termed as a infinite game if it has a infinite number of moves, each of which involves only finite number of alternatives. In other words a game which is

not finite is infinite game. An Infinite game is not played with a purpose to win or lose, but to continue playing.

7. What is a two person game ?

Ans: A game with only two players is called a two person game. A Game with more than two players is called a multiplayer game.