Questions on dynamic games

1. Write the definition of a game in extensive form.

2. Describe the resolution process by "backward induction". In which class of games can we use it?

3. Define "subgame".

4. Write the definition of subgame perfect Nash equilibrium. In which class of games can we use it?

5. Which are the differences between "equilibrium", "equilibrium path" and "equilibrium payoffs"? Provide a clarifying example.

6. Describe how to define the strategies of a player after her actions in the extensive form.

7. When do the definitions of "backward induction" and "subgame perfect Nash equilibrium" coincide?

8. Define "information set" and explain its meaning.

9. In an extensive form game, Player X has three nodes: a, b and c. Out of the first two emerge three branches, and out of the third one emerge two. The first two nodes belong to the same information set, and the third belongs to a different one. How many strategies does this player have? Describe them.

10. A subgame perfect Nash equilibrium is always a Nash equilibrium. True or false?

11. Two identical firms compete in quantity in a given market. Explain the implications after a change from the static game (Cournot) to a dynamic game (Stackelberg) in the linear case as discussed in class: who wins, who loses and why.

12. Explain how the players' patience affects the outcome of a bargaining game and illustrate it with an example.