A. Consider the following strategic games and answer the questions follow:

<table>
<thead>
<tr>
<th></th>
<th>X</th>
<th>Y</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>2,2</td>
<td>0,0</td>
</tr>
<tr>
<td>Y</td>
<td>0,0</td>
<td>1,1</td>
</tr>
</tbody>
</table>

Game 1

<table>
<thead>
<tr>
<th></th>
<th>X</th>
<th>Y</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>2,2</td>
<td>0,0</td>
</tr>
<tr>
<td>Y</td>
<td>0,0</td>
<td>0,0</td>
</tr>
</tbody>
</table>

Game 2

1. NE of the Game 1 is (are)
   a. (X, X)
   b. (Y, Y)
   c. Both
   d. None

2. NE of the Game 2 is (are)
   a. (X, X)
   b. (Y, Y)
   c. Both
   d. None

3. Evolutionary stable (ESS) in Game 1 is (are)
   a. X
   b. Y
   c. Both
   d. None

4. Evolutionary stable Strategy (ESS) in Game 2 is (are)
   a. X
   b. Y
   c. Both
   d. None

B. The members of a single population are randomly matched in pairs and play BoS, with payoffs given in following game table (L: Choose favorite concert and D: Choose less preferred concert)

<table>
<thead>
<tr>
<th></th>
<th>L</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>0,0</td>
<td>2,1</td>
</tr>
<tr>
<td>D</td>
<td>1,2</td>
<td>0,0</td>
</tr>
</tbody>
</table>

5. This game has
   a. A unique symmetric mixed strategy equilibrium
   b. No symmetric pure strategies NE
   c. None
   d. Both

6. Mixed strategy NE of this game is
7. Evolutionary Stable Strategy (ESS) of this game is
   a. \((1/3, 2/3)\)
   b. \((2/3, 1/3)\)
   c. \((3/4, 1/4)\)
   d. \((1/4, 3/4)\)

C. Consider the following prisoners' dilemma game and answer the following questions

<table>
<thead>
<tr>
<th></th>
<th>Cooperate</th>
<th>Defect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooperate</td>
<td>1, 1</td>
<td>-1, 2</td>
</tr>
<tr>
<td>Defect</td>
<td>2, -1</td>
<td>0, 0</td>
</tr>
</tbody>
</table>

8. Unique NE of this game is
   a. \((C, C)\)
   b. \((D, D)\)
   c. Both
   d. None

9. Suppose, this game is repeatedly played finite times
   a. In the Last period Cooperate is a dominant strategy irrespective of history of the game
   b. In the Last period Defect is a dominant strategy irrespective of history of the game
   c. In the Last period Cooperate is a dominant strategy for a particular game history
   d. In the Last period Defect is a dominant strategy for a particular game history

10. SPNE of this twice repeated PD game is
    a. \((C, C)\)
    b. \((D, D)\)
    c. Both
    d. None

11. SPNE of this PD game if it is repeated \(T\) (some finite no bigger than 2)times, is
    e. \((C, C)\)
    f. \((D, D)\)
    g. Both
    h. None

12. In an infinitely repeated PD game
    a. There is a unique equilibrium
    b. There are multiple equilibriums
    c. There is no equilibrium
13. In an infinitely repeated PD game
   a. Cooperate is always an equilibrium
   b. Defect is always an equilibrium
   c. Equilibrium depends on discount factor
   d. None

14. Suppose, In an infinitely repeated given PD game players use the following non forgiving strategy S: Play Cooperate (C) in every player unless someone has ever played Defect (D) in the past and Play Defect (D) forever if someone has played Defect (D) in the past. This strategy is an SPNE if (δ is per period discount factor for both the players)
   a. δ≤1/2
   b. δ≥1/2
   c. δ≤1/3
   d. δ≥1/3