Use the following to answer questions (1) through (5): Two firms, A and B, compete against by selecting an advertising strategy, with the options being to select either a low level of advertising (L) or a high level of advertising (H). The payoff matrix is indicated below:

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>5, 5</td>
<td>0, 7</td>
</tr>
<tr>
<td>H</td>
<td>7, 0</td>
<td>1, 1</td>
</tr>
</tbody>
</table>

Note: A’s payoffs (in millions of dollars) are listed 1st, while B’s payoffs (in millions of dollars) are listed 2nd.

[1] If the above game is played once, the Nash Equilibrium is:

A. for both firms to select L.
B. for both firms to select H.
C. for one firm to select L and the other firm to select H.
D. None of the above

[2] If both firms cooperate with each other, this corresponds with:

A. both firms selecting L.
B. both firms selecting H.
C. one firm selecting L and the other firm selecting H.
D. None of the above

[3] If this game is played twice (i.e., a two-play game), coupled with each firm adopting a tit-for-tat strategy (assuming a one-period interest rate, r, of 0.25), then cooperation can be sustained across both plays of the game.

A. True
B. False

[4] If this game is played twice, coupled with each firm adopting a tit-for-tat strategy (assuming a one-period interest rate, r, of 0.25), then at the equilibrium the present value of A’s payoffs (across the two periods of play) equals:

A. 12.60
B. 9
C. 7
D. 1.80

[5] If this game is played an infinite number of times, coupled with a trigger strategy, then what value of the interest rate, r, will lead each firm to be indifferent between cooperating forever and cheating forever?

A. 2
B. 1
C. 1
D. 1/3
[6] In a famous song by Dionne Warwick, Dionne sings “What’s it all about Alfie? Is it just for the moment we live?” Suppose Alfie responds, “Yes, I only care about today. The future means nothing to me.” Accordingly, from Alfie’s perspective, his discount factor equals

A. 1
B. ½
C. 0
D. -1

[7] Operating as Bertrand competitors in a differentiated product market, firms A and B face the following price-reaction functions:

Firm A: \( P_A = 40 + \frac{1}{2}P_B \)
Firm B: \( P_B = 40 + P_A \)

Accordingly, at the Nash equilibrium, A and B will price at \( (P_A \) and \( P_B, \) respectively):

A. 100; 120
B. 100; 140
C. 120; 160
D. None of the above

[8] Consider a market with two firms, A and B. Firm A’s marginal cost is: \( MC_A = 100 + q_A, \) while firm B’s marginal cost is: \( MC_B = 100 + 2q_B. \) Striking up a cartel agreement, these firms collectively decide to produce 300 units (i.e., \( 300 = q_A + q_B). \) Wishing to maximize their joint (cartel) profit, quotas should be set such that A produces units and B produces units.

A. 100; 200
B. 150; 150
C. 200; 100
D. 300; 0

[9] Continuing question (8), absent any punishment mechanism, if firm A sticks to its quota level of output, then firm B will wish to produce:

A. more than its quota level of output.
B. less than its quota level of output.
C. its quota level of output.
D. all of the above are possible.

[10] According to the kinked demand curve model, a firm expects competing firms to increase their prices if the firm chooses to increase its price.

A. True
B. False