A. Variant of BoS game:
1. From game table, it can be seen that there is no action of player 1 which is strictly dominated. Hence Answer is (c)
2. Action B of player 2 is strictly dominated by her action X. Hence answer (a)
3. (S, S) Survives the iterated elimination of dominated strategies. Hence answer (d)

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>S</th>
<th>X</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>3, 1</td>
<td>0, 0</td>
<td>-1, 2</td>
</tr>
<tr>
<td>S</td>
<td>0, 0</td>
<td>1, 3</td>
<td>0, 2</td>
</tr>
</tbody>
</table>

B. Variant of BoS game:
4. Action X of the player 2 is clearly dominated by mixed strategies that assigns positive probabilities to B and S. Say(¼*B + ½*S)

C. Variant of Hotelling’s linear market model
5. When there are two firms, The unique Nash Equilibrium will be that two firms take identical position and that at the (½, ½). Hence answer (d)
6. When there are three firms there will not be any Nash Equilibrium as any firm will have incentive to move closer to the adjacent firm. Hence answer (b)

D.

Second Price Sealed bid Auction

<table>
<thead>
<tr>
<th>P₂</th>
<th>P₁</th>
<th>0</th>
<th>100</th>
<th>200</th>
<th>300</th>
<th>400</th>
<th>500</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>400,0</td>
<td>0,300</td>
<td>0,300</td>
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<td>0,300</td>
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</tr>
<tr>
<td>100</td>
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<td>300,0</td>
<td>0,200</td>
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<tr>
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<td>300,0</td>
<td>200,0</td>
<td>0,100</td>
<td>0,100</td>
<td>0,100</td>
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</tr>
<tr>
<td>300</td>
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<td>300,0</td>
<td>200,0</td>
<td>100,0</td>
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<tr>
<td>400</td>
<td>400,0</td>
<td>300,0</td>
<td>200,0</td>
<td>100,0</td>
<td>0,0</td>
<td>0,0</td>
<td></td>
</tr>
<tr>
<td>500</td>
<td>400,0</td>
<td>300,0</td>
<td>200,0</td>
<td>100,0</td>
<td>0,0</td>
<td>-100,0</td>
<td></td>
</tr>
</tbody>
</table>
7. From the table above payoff of two players when they bid their maximum valuation is (100, 0). Hence answer (d)
8. (d) (400, 300) (refer above table)
9. (c) Finitely many NEs (refer above table)
10. (b) 300 (refer above table)
11. (c) 400 (refer above table)
E. First Price Sealed bid Auction

\[
\begin{array}{ccccccc}
& P_2 & 0 & 100 & 200 & 300 & 400 & 500 \\
P_1 & 0 & 400,0 & 0,200 & 0,100 & 0,0 & 0,-100 & 0,-200 \\
100 & 300,0 & 300,0 & 0,200 & 0,200 & 0,-100 & 0,-200 \\
200 & 200,0 & 200,0 & 200,0 & 0,0 & 0,-100 & 0,-200 \\
300 & 100,0 & 100,0 & 100,0 & 100,0 & 0,-100 & 0,-200 \\
400 & 0,0 & 0,0 & 0,0 & 0,0 & 0,0 & 0,-200 \\
500 & -100,0 & -100,0 & -100,0 & -100,0 & -100,0 & -100,0 \\
\end{array}
\]

12. (a) (0, 0) (refer above table)
13. (c) (200, 200) (refer above table)
F. Entry Game: Following is the normal form of the game

\[
\begin{array}{c|cc}
\text{Challenger} & \text{Incumbent} \\
& \text{In} & \text{Out} \\
\hline
\text{Acquiesce} & 2,1 & 0,0 \\
\text{Fight} & 1,2 & 1,2 \\
\end{array}
\]

14. Clearly (In, Acquiesce) and (out, Fight) are two NEs. Hence answer (c)
15. By the technique of backward induction only (In, Acquiesce) is an eq. So answer (a)