1. This is a variation of problem 2, chapter 14, (chapter 13 in the 3/e).

Consider a SOE in equilibrium.

a. Start by drawing a diagram showing this SOE in both production and consumption equilibria, where good $a$ is initial imported.

b. Now suppose this SOE experiences a biased technological progress which only affects only the production of good $a$ but not good $b$. Determine the effect of this technological change on:

i. the consumption of goods $a$ and $b$;
ii. the production of goods $a$ and $b$;
iii. the quantities of goods $a$ and $b$ imported and/or exported.

c. Explain your answer in terms of income and substitution effects and illustrate your answer in the diagram. Again, when there is ambiguities in the result, discuss all possibilities and show only one case in the diagram.

2. This is a variation of problem 3, chapter 14, (chapter 13 in the 3/e).

Consider a SOE in both production and consumption equilibria and good $a$ is imported. Now the government imposes an import quota on good $a$ which is binding, i.e., this economy cannot import as much good $a$ as before.

a. Start by drawing a diagram showing this SOE in equilibrium.

b. Show in the diagram the effect of the imposition of the import quota.

c. Determine the effects of the import quota on (i) production; (ii) consumption; (iii) import or export; of goods $a$ and $b$.

3. This is a variation of problem 3, chapter 15, (chapter 14 in the 3/e).

Consider a SOE in equilibrium.

d. Start by showing the equilibrium diagrammatically, using (i) the output equilibrium diagram, and (ii) the monetary equilibrium diagram.

e. Now suppose there is a temporary increase in government expenditures, determine the effects on aggregate output, absorption, the current account surplus, the nominal exchange rate, and the price level for this SOE and demonstrate the efforts in the diagrams for

i. the SOE has a flexible exchange rate, and
ii. the SOE has a fixed exchange rate.