Part I. Questions from Feenstra-Taylor (chapter 6)

1. A country has $50 million of debt at the rate of 10%. It does not make any payments in year 1 and manages to renegotiate the interest rate to 5% at the end of year 1. The interest payment in year 2 for this country would be _______.
   A) $57.75 million
   B) $7.75 million
   C) $5 million
   D) $2.75 million

2. Which of the following is NOT an assumption belonging to the long-run budget constraint model?
   A) The government has a balanced budget.
   B) Prices are perfectly flexible.
   C) The economy is a price taker, small, and open.
   D) The economy can borrow or lend unlimited amounts at the world real interest rate.

3. The change in external wealth from period t to t + 1 is equal to:
   A) the balance on the current account minus the balance on the financial account (FA).
   B) the trade balance (deficit or surplus) plus interest (earned or paid) on external debt or wealth.
   C) a nation's domestic income plus net foreign factor income.
   D) the balance on the current account plus the balance on the capital account.

4. Suppose that a country has external wealth of $1 billion in 2008. What is the future value of this external wealth at the end of 2010, assuming a world interest rate of 10% per annum and no additions or subtractions to external wealth from trade balance surpluses or deficits during the period?
   A) $1.1 billion
   B) $1.2 billion
   C) $1.21 billion
   D) $0.812 billion
5. The long-run budget constraint indicates that, in the long run, a country's initial external wealth must be offset by (i.e., equal to):
   A) the present value of its future trade balances.
   B) the future value of its future trade balances.
   C) the current value of its future trade balances.
   D) the present value of its future external wealth.

6. What is the present value of annual payments of $1000 received in perpetuity (i.e., forever) if the world interest rate is 6%?
   A) $16,667
   B) $1,060
   C) $6,000
   D) $60

7. If you are scheduled to receive a $10,000 payment in 2 years and the interest rate is 10%, then the present value of this payment is ______.
   A) $9,000
   B) $8,264
   C) $12,000
   D) $5,000

8. Suppose that the present discounted value of a stream of payments is $1,000. If the interest rate is 10%, what is the constant payment per year?
   A) 100
   B) 10
   C) 1
   D) 1,000

9. The exorbitant privilege for the United States implies that:
   A) the United States can lend money to people at low interest rates.
   B) U.S. investments abroad often earn very low interest rates.
   C) foreigners' investments in the United States earn them less income than the U.S. investments abroad.
   D) foreigners' investments in the United States earn them more income than the U.S. investments abroad.
10. What is a sudden stop?
A) a situation in which a nation runs out of labor resources
B) a situation in which a nation's prime minister has to call a new election
C) a situation in which a nation's financial markets collapse and investors lose everything
D) a situation in which a nation's creditors decide to cease new lending

11. Assuming investment (I) and government purchases (G) are zero, then the basic model of an open economy (where $C =$ consumer spending; $S =$ saving; $T =$ taxes; $X – M =$ exports – imports; and $Q =$ GDP) is:
A) $C + I + G = Q$.
B) $I = S$.
C) $I + S = G + T$.
D) $Q – C = X – M$.

12. The long-run budget constraint will be met as long as:
A) a nation limits its borrowing to half the outstanding debt.
B) the present value of GDP ($Q$) is the same as the present value of yearly consumption.
C) a nation's productivity grows along with its population.
D) the government is stable and external shocks are minimal.

13. In a closed economy, what happens to the present value of GDP (discounted at 5%) following an output shock (decline) of 21% recovered the following year?
A) There is a permanent drop of 1% in the present value of GDP.
B) There is no long-run effect on present value.
C) There is a 1-year drop of 1% in GDP the first year followed by full recovery.
D) There is a downward spiral in real GDP resulting in a permanent drop of 21%.

14. If a nation experiences an output shock and wishes to borrow to smooth consumption, how much of the loss is the nation able to borrow and still maintain the long-run budget constraint?
A) 100% of the output shock
B) 20% of the output shock
C) a percentage of the shock to GDP equal to $1/(1 + r*)$ where $r*$ is the world long-run real interest rate
D) A nation in such a position is better off not to borrow because it might get into financial trouble
15. Consumption smoothing is possible as long as the output shock is:
   A) temporary.
   B) permanent.
   C) less than 10%.
   D) more than the rate of interest ($r^*$).

16. Events such as wars, in particular wars not financed by increases in taxes such as the U.S. Afghanistan and Iraq wars,
   A) usually involve international borrowing and an increase in external debt.
   B) can be paid for by transfers and gifts from sympathetic allies.
   C) can be financed by increasing discount operations, thereby avoiding tax increases.
   D) add to the instability of the international economy and create large spikes in GDP growth.

17. A nation that engages in precautionary savings is:
   A) putting away money for the children of baby boomers who will enter college in the next decade.
   B) storing foreign currency reserves, bonds, or deposits to use in case of persistent deficits.
   C) forgetting that saving cannot save an economy from poverty—it takes investment.
   D) holding back pay of top government officials to make them accountable for their actions.

18. Countries such as Norway are turning toward investing in private companies:
   A) because of the increased risk of treasury bills.
   B) to gain influence in the Western economies.
   C) to increase their rates of return on investments.
   D) so that they can be more dependent on market fluctuations.

19. In an open economy, investment can be funded externally, possibly leading to:
   A) very unstable consumer spending, which may lead to recession.
   B) unsustainable debt.
   C) foreign control of domestic corporations.
   D) a simultaneous increase in income and smooth consumption, with adherence to the long-run budget constraint.
20. If the long-run budget constraint is upheld, an investment expenditure will increase the present value of consumption only if:
   A) the present value of debt is equal to zero.
   B) the present value of the resulting additional output is greater than the present value of the investment expenditure.
   C) the present value of exports is greater than the present value of imports.
   D) output is increasing faster than the growth of population.

21. The decision rule for making an investment is to do so as long as:
   A) the marginal product of capital is positive ($\Delta Q/\Delta K > 0$).
   B) the marginal product of labor is positive ($\Delta Q/\Delta L > 0$).
   C) the marginal product of capital is greater or equal to the world real interest rate ($\Delta Q/\Delta K \geq r^*$).
   D) the initial level of wealth is equal to zero.

22. It is not surprising that financially open economies are able to:
   A) enjoy higher levels of consumer spending.
   B) recycle investment funds by repaying interest with increased income from production.
   C) delink savings and investment, thus increasing consumption smoothing.
   D) get lower rates of interest on borrowing.

23. In the Cobb-Douglas Production function, one of the conclusions reached is that the lower the level of income, the higher is the MPK. This is possible because of which of the following statements?
   A) There are increasing returns.
   B) The productivity levels are different.
   C) There are diminishing returns.
   D) There are constant returns.

24. If Mexico has 8% of capital per labor of the U.S. level, it is likely that under the naïve model,
   A) capital will flow into the United States because it has more capital.
   B) Mexico will never achieve the capital–labor ratio of the United States.
   C) U.S. capital per labor will decline to the level of Mexico.
   D) capital will flow into Mexico because the MPK of capital is higher in Mexico.
25. Nations can lower risk via asset diversification. How do nations engage in diversification?
   A) by investors relying on mutual funds instead of choosing their own stocks  
   B) by directing some investment activities abroad and some domestically  
   C) by buying private insurance against devaluation  
   D) by restricting all investment toward domestic capital

26. Whenever economic shocks are asymmetric, and affect only one among the nations who are mutual investors, asset diversification:
   A) will have substantial benefits in lessening the shocks and smoothing consumption.  
   B) will have no measurable benefits in lessening shocks.  
   C) will probably backfire as one nation gains while the other loses.  
   D) creates a tense atmosphere in which profits take precedence over human welfare.

27. It is better to invest in a country whose shocks:
   A) are positively correlated with yours.  
   B) are independent of yours.  
   C) are negatively correlated with yours.  
   D) are common to yours.

28. If other things remain unchanged, the present value of external wealth will increase as the world interest rate increases.
   A) True  
   B) False

29. If the present discounted value of all of its trade balances is positive, this means that the country must have started with positive initial wealth.
   A) True  
   B) False

30. The risk from asymmetric (country-specific) shocks could be averaged out if nations could pool their income streams, but the risk from a global shock cannot be avoided.
   A) True  
   B) False

31. In an open economy, consumption and investment decisions are separable—firms and households save or borrow in the world capital market.
   A) True  
   B) False
Part II: Questions from SU and class material

The following figure (Figure 1) depicts possible investment and savings schedules. The four panels of the figure, labeled (i) to (iv), represent how one of these schedules (identified with dashed lines) may shift in response to alternative shocks.

1. Which panel in Figure 1 is most likely to depict the response of an oil exporting country to a temporary increase in the price of oil?
   (a) i
   (b) ii
   (c) iii
   (d) iv

2. Which panel in Figure 1 is most likely to depict the response of an oil importing country to a temporary increase in the price of oil?
   (a) i
   (b) ii
   (c) iii
   (d) iv

3. Which panel in Figure 1 is most likely to depict the response of country experiencing an increase in the marginal productivity of capital?
   (a) i
The next figure (Figure 2) depicts current account schedules for the US and the rest of the world (ROW). In the figure, the vertical axis measures the world interest rate. The current account surplus in the US is measured horizontally in the usual way. The current account surplus in ROW is measured horizontally also but, as done in class, with positive values in the westward direction and negative values eastward. The four panels of the figure, labeled (i) to (iv), represent how one of these schedules (dashed lines) may shift in response to shocks.

4. The 2006 *Economic Report of the President* argues that the current account deficit in the US may be attributable to strong US growth, which "contributes to higher potential corporate earnings and investment returns." Which panel in Figure 2 depicts this case?

(a) i  
(b) ii  
(c) iii  
(d) iv  

5. If the argument described in the preceding question were correct, higher growth would have led to:

(a) An increase in the US current account surplus  
(b) An increase in the US current account deficit  
(c) An increase in ROW current account deficit  
(d) Both b and c.
6. If the argument discussed in the preceding two questions were correct, the world interest rate would have:
   (a) Increased
   (b) Fallen
   (c) Stayed the same
   (d) It would be impossible to tell on the basis of the theory.

7. The 2006 Economic Report of the President also argues that the current account deficit in the US may be due to falling investment prospects in Germany, Japan, and other countries. Which panel in Figure 2 depicts this case?
   (a) i
   (b) ii
   (c) iii
   (d) iv

8. According to Figure 2, weak investment in the rest of the world should have been accompanied by:
   (a) An increase in the US current account surplus
   (b) An increase in the US current account deficit
   (c) An increase in ROW current account deficit
   (d) Both b and c.

9. Figure 2 also implies that weak investment in the rest of the world should have resulted in:
   (a) An increase in world interest rates
   (b) Lower world interest rates
   (c) Higher interest rates in the rest of the world than in the US
   (d) Higher interest rates in the US than in the rest of the world

10. A third factor behind the US current account deficit, according to the 2006 Economic Report of the President, is rising saving rates in the rest of the world. In Figure 2, this would be represented by panel:
    (a) i
    (b) ii
    (c) iii
    (d) iv

11. As given by Figure 2, rising saving rates in the rest of the world imply:
    (a) Increased current account deficits in the US and lower world interest rates.
    (b) Smaller current account deficits in the US and lower world interest rates.
    (c) Increased current account deficits in the US and higher world interest rates.
    (d) None of the above.

12. Of the three different explanations of the US CA deficit (strong investment in the US, weak investment in the ROW, rising saving rates in the ROW), the one or ones that are consistent with the actual recent behavior of both the US CA deficit and world interest rates are:
13. Which of the following statements about a small open economy without production (i.e. a pure exchange economy) is false?
(a) Consumption choices do not depend on the timing of income, only on its present value.
(b) The economy always gains from having access to international capital markets.
(c) The economy gains from access to international capital markets if it ends up running a current account surplus, but it loses if it ends up having a current account deficit.
(d) The smaller the current account imbalance, the lower the gains from access to international capital markets.

The next figure (Figure 3) depicts possible configurations of a two period pure exchange small open economy (without production). In the figure, \( r^* \) denotes the world interest rate. Assume that the representative household has no initial wealth.

14. Suppose that the representative household has an endowment of \( Q_1 \) in the first period and \( Q_2 \) in the second period. In Figure 3, the point B is the optimal consumption choice. The first period current account:
(a) is a deficit equal to \( C_1 - Q_1 \)
(b) is a deficit equal to \( C_1 \)
(c) is a surplus equal to \( Q_1 \)
(d) cannot be identified with the information given
15. In the setting of the previous question, what would not be an implication of the imposition of capital controls, in the form of a prohibition of international borrowing?
   (a) Domestic consumption would be at A
   (b) The current account would be zero
   (c) The domestic interest rate would be given by the slope of the indifference curve going through A
   (d) Household welfare would be higher than without capital controls.

16. Consider Figure 3 again, but now assume that the typical household's endowment is given by A'. Which one of the following statements is true?
   (a) In the first period, the current account would be in deficit
   (b) Access to international capital markets reduces household welfare
   (c) With capital controls, in the form of a prohibition of international borrowing, household consumption would be given by A'
   (d) All of the above are false.

The next figure (Figure 4) represents budget lines in a two period pure exchange open economy. In the figure, A is the endowment point. Assume that households have no initial wealth.

17. In Figure 4, the change in the budget set represented by the change from the solid line to the dashed line going through A represents:
   (a) A reduction in the second period endowment, given the world interest rate
   (b) A reduction in the first period endowment, given the world interest rate
   (c) An increase in the world interest rate, given endowments
   (d) A reduction in the world interest rate, given endowments.
18. Again in Figure 4, assume that initially (i.e. with the solid line budget set) the current account is exactly balanced. Then, if the budget line changes to the dashed line, and assuming preferences of the usual kind,

(a) the current account will go into surplus
(b) the current account will go into deficit
(c) the current account will remain balanced
(d) one cannot tell how the current account will change
Part III: The Current Account in an Endowment Economy

Consider the following two period model of a small open economy without production or investment. There is only one good in each period, which cannot be stored. The economy has a representative household that is endowed with $Q_1 = 5$ units of the good in period 1 and $Q_2 = 10.2$ units in period 2. The world interest rate is constant and equal to $r^* = 0.1$ (i.e. ten percent) per period. The typical household has initial net foreign wealth of $(1 + r^*)B^*_0 = 1$.

Finally, the preferences of the representative household are described by the utility function:

$$U(C_1, C_2) = \sqrt{C_1} + \beta\sqrt{C_2}$$

where $\beta = 1/1.1$ ($\beta$ is called the subjective discount factor). Notice that the marginal utility of consumption in period 1 is then $1/2\sqrt{C_1}$ and the the marginal utility of consumption in period 2 is then $\beta/2\sqrt{C_2}$ (why?)

For questions 1 to 4, assume that there is free capital mobility. Hints: Write the present value budget constraint. Also, what is the key condition for optimal consumption?

1. The equilibrium level of consumption in period 1, $C_1$, equals:
   (a) 8
   (b) 7.6
   (c) 5
   (d) There is not enough information to determine $C_1$.

2. The equilibrium level of consumption in period 2 equals:
   (a) 8
   (b) 7.6
   (c) 10.2
   (d) 0

3. The trade balance in period 1:
   (a) is in deficit by 2.6 units.
   (b) is in deficit by 3 units.
   (c) is in deficit by 5.2 units.
   (d) is in surplus by 5.2 units.

4. Which one of the following statements is true of the current account in period 1?
   (a) It must be equal to the trade balance.
   (b) In period 1 there is a current account deficit and is larger than the trade deficit.
   (c) In period 1 there is a current account deficit but it is smaller than the trade deficit.
   (d) In period 1 there is a current account surplus that is larger than the trade surplus.
For questions 5-8, assume that the government imposes capital controls that prohibit borrowing from abroad ($B^*_1 \geq 0$).

5. With the capital controls, consumption in period 1 equals:
   (a) 7.6  
   (b) 8  
   (c) 5  
   (d) 6

6. With the capital controls, consumption in period 2 equals:
   (a) 10.2  
   (b) 11  
   (c) 9  
   (d) None of the above

7. With capital controls, the domestic interest rate must be approximately equal to:
   (a) 0.43  
   (b) 0.66  
   (c) 0.25  
   (d) 0.1

8. The imposition of capital controls reduces the value of $U$ by approximately:
   (a) 1 unit of utility  
   (b) 0.6 units of utility  
   (c) 0.05 units of utility  
   (d) It raises the value of $U$.

For questions 9-10 assume free capital mobility again, but now suppose that the household’s endowment in period 1 increases to $Q_1 = 9.2$, with the period 2 endowment unchanged.

9. Consumption in period 1 must now equal:
   (a) 9.2  
   (b) 6  
   (c) 8  
   (d) 10.2

10. Which one of the following statements is false?
    (a) In period 1, the trade balance is now in deficit.  
    (b) In period 1, the current account is zero.  
    (c) Capital controls in period 1 would not be binding (i.e. affect equilibrium behavior).  
    (d) $B^*_1$ must be zero.