

# 2015 AP<sup>®</sup> MACROECONOMICS FREE-RESPONSE QUESTIONS

## MACROECONOMICS

### Section II

Planning Time—10 minutes

Writing Time—50 minutes

**Directions:** You have 10 minutes to read all of the questions in this booklet, to sketch graphs, to make notes, and to plan your answers. You will then have 50 minutes to answer all three of the following questions. It is suggested that you spend approximately half your time on the first question and divide the remaining time equally between the next two questions. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. Use a pen with black or dark blue ink.

1. Assume that the United States economy is operating below full employment.
  - (a) Draw a correctly labeled graph of long-run aggregate supply, short-run aggregate supply, and aggregate demand, and show each of the following.
    - (i) Current equilibrium output and price level, labeled as  $Y_1$  and  $PL_1$
    - (ii) Full-employment output, labeled as  $Y_f$
  - (b) Assume that the Federal Reserve targets a new federal funds rate to reach full employment. Should the Federal Reserve target a higher or lower federal funds rate?
  - (c) Given the Federal Reserve action you identified in part (b), draw a correctly labeled graph of the money market and show the effect on the nominal interest rate.
  - (d) The policy makers pursue a fiscal policy rather than the monetary policy in part (b). Assume that the marginal propensity to consume is 0.8 and the value of the recessionary gap is \$300 billion.
    - (i) If the government changes its spending without changing taxes to eliminate the recessionary gap, calculate the minimum required change in government spending.
    - (ii) If the government changes taxes without changing government spending to eliminate the recessionary gap, will the minimum required change in taxes be greater than, smaller than, or equal to the minimum required change in government spending in part (d)(i) ? Explain.
  - (e) Assume the government lowers income tax rates to eliminate the recessionary gap. Will each of the following increase, decrease, or stay the same?
    - (i) Aggregate demand. Explain.
    - (ii) Long-run aggregate supply. Explain.

## 2015 AP<sup>®</sup> MACROECONOMICS FREE-RESPONSE QUESTIONS

2. Country X and Country Y are trading partners, and both produce furnaces and solar panels. The countries can produce the following amounts using equal amounts of resources.

Country X: 6 furnaces or 8 solar panels

Country Y: 6 furnaces or 12 solar panels

- (a) Which country has an absolute advantage in producing solar panels?
  - (b) Calculate the opportunity cost of a furnace in Country Y.
  - (c) Which country has the comparative advantage in producing furnaces? Explain.
  - (d) If the terms of trade were that 2 furnaces are exchanged for 1 solar panel, should Country X produce solar panels domestically or import solar panels from Country Y?
- 

3. Exchange rates and interest rates are important for macroeconomic decision making.

- (a) How does an increase in Japan's government budget deficit affect each of the following?
  - (i) The real interest rate in the short run in Japan. Explain.
  - (ii) Private domestic investment in plant and equipment in Japan
- (b) Draw a correctly labeled graph of the foreign exchange market for the euro, and show the effect of the change in the real interest rate in Japan from part (a)(i) on each of the following.
  - (i) Supply of euros. Explain.
  - (ii) Yen price of the euro
- (c) To reverse the change in the yen price of the euro identified in part (b)(ii), should the European Central Bank buy or sell euros in the foreign exchange market?

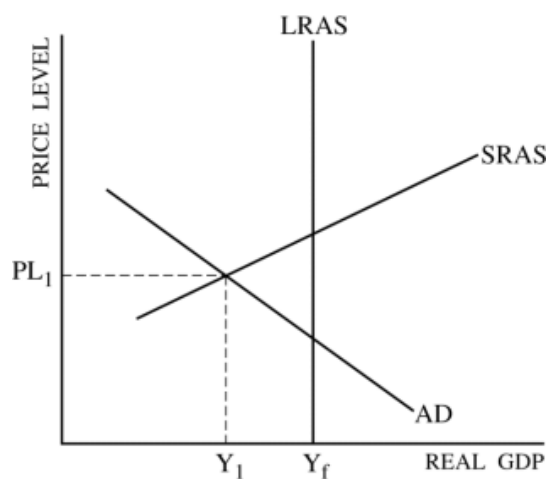
**STOP**

**END OF EXAM**

# AP<sup>®</sup> MACROECONOMICS 2015 SCORING GUIDELINES

## Question 1

**10 points** (2+1+2+3+2)

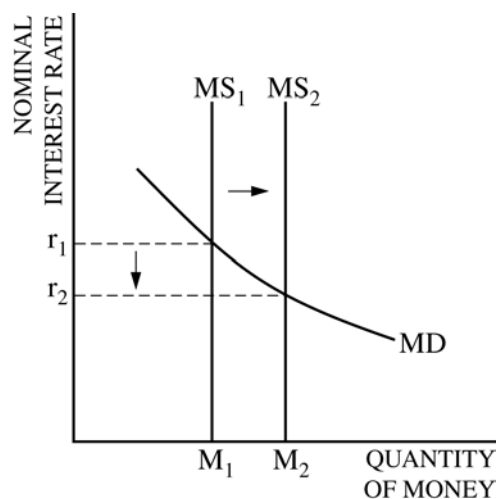


(a) 2 points:

- One point is earned for drawing a correctly labeled graph showing AD, SRAS,  $Y_1$  and  $PL_1$ .
- One point is earned for drawing a vertical LRAS at  $Y_f$  to the right of  $Y_1$ .

(b) 1 point:

- One point is earned for stating that the Federal Reserve should target a lower federal funds rate.



(c) 2 points:

- One point is earned for drawing a correctly labeled money market graph.
- One point is earned for shifting the money supply curve to the right and showing a decrease in the nominal interest rate.

# AP<sup>®</sup> MACROECONOMICS

## 2015 SCORING GUIDELINES

### Question 1 (continued)

(d) 3 points:

- One point is earned for calculating the minimum required change in government spending: \$60 billion ( $\$300/5=\$60$ ).
- One point is earned for stating that the minimum required change in taxes will be greater than the minimum required change in government spending.
- One point is earned for explaining that the tax multiplier ( $mpc/mps = 0.8/0.2 = 4$ ) is smaller than the government spending multiplier ( $1/mps = 1/0.2 = 5$ ) because part of the initial increase in disposable income caused by the decrease in income tax will be saved rather than spent.

(e) 2 points:

- One point is earned for stating that aggregate demand will increase and for explaining that lower income tax rates will increase disposable income and/or consumption and investment.
- One point is earned for stating that long-run aggregate supply will stay the same because lowering income taxes will increase consumption and/or investment, or there is no change in inputs.  
OR  
One point is earned for stating that long-run aggregate supply will increase in the long run because lowering taxes will increase savings and investment in physical capital, or because of increased incentives to work.  
OR  
One point is earned for stating that long-run aggregate supply will decrease in the long run because lowering taxes leads to a crowding out of private investment.