

**2021**

**AP<sup>®</sup>**

 **CollegeBoard**

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# **AP<sup>®</sup> Macroeconomics**

## **Free-Response Questions**

### **Set 2**

**MACROECONOMICS**

**SECTION II**

**Total Time—1 hour**

**Reading Period—10 minutes**

**Writing Period—50 minutes**

**3 Questions**

**Directions:** You are advised to spend the first 10 minutes reading all of the questions and planning your answers. You will then have 50 minutes to answer all three of the following questions. You may begin writing your responses before the reading period is over. 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. If the question prompts you to “Calculate,” you must show how you arrived at your final answer. Use a pen with black or dark blue ink.

You may plan your answers in this orange booklet, but no credit will be given for anything written in this booklet. **You will only earn credit for what you write in the separate Free Response booklet.**

1. Assume Smithland is in short-run equilibrium at a level of output that exceeds the full-employment level of output.
- (a) Draw a correctly labeled graph of the aggregate demand, short-run aggregate supply, and long-run aggregate supply curves, and show each of the following.
- (i) The current equilibrium real output and price level, labeled  $Y_1$  and  $PL_1$ , respectively
  - (ii) The full-employment output, labeled  $Y_F$
- (b) Assume Smithland's government cuts individual income taxes. On your graph in part (a), show the short-run effect of the tax cut on equilibrium real output, labeling the new short-run equilibrium real output  $Y_2$ .
- (c) Based solely on the change in real output on your graph in part (b), what will happen to each of the following in the short run?
- (i) The natural rate of unemployment
  - (ii) Nominal interest rates. Explain.
- (d) Assume instead the central bank intervenes to correct an inflationary output gap. What open-market operation should the central bank take?
- (e) Draw a correctly labeled graph of the money market, and show the effect of the open-market operation identified in part (d) on the nominal interest rate.
- (f) Based solely on the interest rate change identified in part (e), what will happen to the international value of Smithland's currency in the foreign exchange market? Explain.
- (g) Based solely on the exchange rate change identified in part (f), will Smithland's imports increase, decrease, or remain the same? Explain.

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**Begin your response to this question at the top of a new page in the separate Free Response booklet and fill in the appropriate circle at the top of each page to indicate the question number.**

2. An economy is currently in short-run equilibrium with a recessionary output gap of \$600 billion.
- (a) Draw a single correctly labeled graph with both the short-run and long-run Phillips curves. Label the initial short-run equilibrium point X.
- (b) Suppose the government implements fiscal policy in order to achieve full-employment output and the marginal propensity to consume is 0.75.
- (i) Calculate the minimum change in government spending required to increase aggregate demand by the amount of the output gap of \$600 billion. Show your work.
  - (ii) Suppose instead the government wants to change taxes rather than government spending. Calculate the minimum change in taxes required to increase aggregate demand by the amount of the output gap of \$600 billion. Show your work.
- (c) Assume instead the government takes no policy action to close the output gap shown in part (a). Explain how the economy will adjust in the long run.

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**Begin your response to this question at the top of a new page in the separate Free Response booklet and fill in the appropriate circle at the top of each page to indicate the question number.**

3. The government budget of the country of Geeland is currently balanced. The government budget is composed of tax revenues (T), transfer payments (TR), and government spending (G).
- (a) Assume the economy moves into a recession and there is no discretionary policy action.
- (i) Will the government budget move into a deficit or a surplus in the short run? Explain using the appropriate components of the government budget identified above.
  - (ii) Based on your answer to part (a)(i), what will happen to the government debt?
- (b) Based on your answer to part (a)(i), identify one specific fiscal policy action that will balance the budget.
- (c) How will the fiscal policy action from part (b) affect the actual unemployment rate in the short run? Explain.
- (d) Did the government efforts to maintain a balanced budget make Geeland's recession more severe or less severe in the short run? Explain.

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**Begin your response to this question at the top of a new page in the separate Free Response booklet and fill in the appropriate circle at the top of each page to indicate the question number.**

**STOP**

**END OF EXAM**