Name: _____

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AP Macroeconomics — Practice Exam

Instructions: Section I style multiple choice (20 questions, five answer choices each, 1 point each) followed by one free-response question (10 points), 35 minutes in total. A four-function calculator is allowed, as on the real exam, but none is needed. Wrong multiple-choice answers are not penalized. On the free-response question, show your work for every calculation and draw graphs large, labeling all axes, curves and equilibrium points.

Time Limit: 35 minutes

Multiple Choice (20 questions)

[1 point] 1. The government of Corvessa raises personal income taxes to shrink its budget deficit. To keep the economy from slowing, the central bank, which operates with limited reserves, buys government bonds on the open market at the same time. In the short run, the effects on the nominal interest rate and on real GDP are:

A. the nominal interest rate rises; real GDP falls

B. the nominal interest rate falls; real GDP rises

C. the nominal interest rate falls; the change in real GDP is indeterminate

D. the change in the nominal interest rate is indeterminate; real GDP falls

E. the changes in both the nominal interest rate and real GDP are indeterminate

[1 point] 2. Brevonia has a recessionary gap of 120 billion dollars, and its marginal propensity to consume is 0.75. The government raises its purchases of goods and services by 20 billion dollars, and the central bank will close the rest of the gap by lowering its policy interest rate. Each 1 percentage point fall in the interest rate raises investment spending by 5 billion dollars. Assuming a constant price level and no crowding out of the government purchases, by how many percentage points must the central bank lower the interest rate to close the gap exactly?

A. 8 percentage points

B. 6 percentage points

C. 5 percentage points

D. 3 percentage points

E. 2 percentage points

[1 point] 3. A severe drought destroys much of Tolvaria's harvest. Short-run aggregate supply shifts to the left, so the price level rises and real GDP falls below full-employment output. The central bank responds by lowering its policy interest rate. Compared with the situation just after the drought, the most likely short-run effects of the central bank's action are that:

A. real GDP rises toward full-employment output, and the price level rises further

B. real GDP rises toward full-employment output, and the price level falls back to its level before the drought

C. real GDP rises and the price level falls, because lower interest rates cut firms' costs and shift short-run aggregate supply back to the right

D. real GDP and the price level both fall further

E. neither real GDP nor the price level changes, because monetary policy cannot affect output after a supply shock

[1 point] 4. Lunderra is at a point on its short-run Phillips curve (SRPC). Consider two separate events. Event I: the government increases its purchases of goods and services. Event II: a large fall in the world price of a raw material used by most industries lowers firms' production costs. On a Phillips curve graph, the short-run effects of the two events are:

A. Event I: the SRPC shifts to the right; Event II: the SRPC shifts to the left

B. Event I: a movement down along the SRPC to higher unemployment and lower inflation; Event II: the SRPC shifts to the right

C. Event I: the long-run Phillips curve shifts to the left; Event II: a movement down along the SRPC

D. Event I: a movement up along the SRPC to lower unemployment and higher inflation; Event II: the SRPC shifts to the left

E. Event I: a movement up along the SRPC to lower unemployment and higher inflation; Event II: the SRPC shifts to the right

[1 point] 5. The table shows points on the current short-run Phillips curve of Dalvane. The natural rate of unemployment in Dalvane is 6 percent, and the economy is currently at an unemployment rate of 4 percent. Which of the following is correct?

Unemployment rate (percent)	3	4	5	6	7	8
Inflation rate (percent)	9	7	5	3	1	−1

A. Expected inflation is 7 percent, so Dalvane is in long-run equilibrium

B. Expected inflation is 3 percent and actual inflation is 7 percent; as expected inflation rises, the SRPC will shift to the right and unemployment will return to 6 percent

C. Expected inflation is 3 percent and actual inflation is 7 percent; the long-run Phillips curve will shift to the left, to 4 percent

D. Expected inflation is 5 percent and actual inflation is 7 percent; as expected inflation rises, the SRPC will shift to the right

E. Expected inflation is 3 percent and actual inflation is 7 percent; the SRPC will shift to the left and unemployment will fall further below 6 percent

[1 point] 6. A new national job-matching service in Quintara helps unemployed workers find suitable vacancies much faster, permanently reducing frictional unemployment. Nothing else changes. On a Phillips curve graph, the most likely effect is that:

A. the long-run Phillips curve shifts to the left, and the short-run Phillips curve shifts to the left with it

B. the economy moves down along its short-run Phillips curve to lower inflation

C. the long-run Phillips curve shifts to the right, and the short-run Phillips curve shifts to the right with it

D. the short-run Phillips curve shifts to the left, but the long-run Phillips curve does not move because it is always vertical

E. the long-run Phillips curve becomes downward sloping, because lower unemployment can now be reached without inflation

[1 point] 7. Inflation in Valdris has been 8 percent for several years, and workers and firms expect it to continue. The central bank then sharply slows the growth of the money supply to bring inflation down to 3 percent, and it keeps money growth low from then on. According to the Phillips curve model, which of the following best describes the short-run and long-run effects?

A. Short run: inflation and unemployment both fall. Long run: unemployment stays below the natural rate

B. Short run: the SRPC shifts to the left at once, so inflation falls with no rise in unemployment. Long run: no further change

C. Short run: inflation falls and unemployment rises above the natural rate. Long run: the long-run Phillips curve shifts to the right, so unemployment stays high permanently

D. Short run: inflation and unemployment both rise. Long run: the SRPC shifts to the right

E. Short run: inflation falls and unemployment rises above the natural rate as the economy moves down along the SRPC. Long run: expected inflation falls, the SRPC shifts to the left and unemployment returns to the natural rate at the lower inflation rate

[1 point] 8. The table shows money and output data for Quorra. Real GDP grew by 5 percent between year 1 and year 2. Using the equation of exchange $MV = PY$, the velocity of money in year 2 and the inflation rate between the two years are:

	Year 1	Year 2
Money supply (billions of dollars)	500	550
Nominal GDP (billions of dollars)	2,000	2,310

A. 4.0; 5 percent

B. 4.2; 10 percent

C. 4.2; 5 percent

D. 4.2; 15.5 percent

E. about 0.24; 10 percent

[1 point] 9. Arvonne is in long-run equilibrium at full employment, and the velocity of money is stable. Its central bank carries out a one-time increase of 8 percent in the money supply. According to the quantity theory of money and the long-run neutrality of money, once all wages and prices have fully adjusted:

A. real GDP is about 8 percent higher and the price level is unchanged, because the extra money is spent on goods and services
B. real GDP and the price level are each about 4 percent higher
C. the price level and nominal wages are about 8 percent higher, while real GDP, real wages and the unemployment rate are back at their original levels
D. the price level is about 8 percent higher and real GDP is permanently lower, because the higher prices discourage work
E. the price level is about 8 percent higher, and the real interest rate is permanently lower because there is more money to lend

[1 point] 10. The central bank of Ressia wants inflation of 3 percent a year. Real GDP is expected to grow by 4 percent a year, and the velocity of money is expected to fall by 2 percent a year as people hold more money relative to their spending. According to the quantity theory of money, the money supply should grow at approximately:

A. 7 percent a year
B. 5 percent a year
C. 1 percent a year
D. 9 percent a year
E. 3 percent a year

[1 point] 11. In the fiscal year just ended, the government of Castavia spent 600 billion dollars on purchases of goods and services, 250 billion dollars on transfer payments and 90 billion dollars on interest on the national debt. It collected 840 billion dollars in tax revenue. Castavia's budget balance for the year was:

A. a deficit of 100 billion dollars
B. a deficit of 10 billion dollars
C. a surplus of 240 billion dollars
D. a surplus of 150 billion dollars
E. a surplus of 100 billion dollars

[1 point] 12. At the start of year 1 the national debt of Kerrow was 1,500 billion dollars. Kerrow then ran budget deficits of 80 billion dollars in year 1, 50 billion dollars in year 2 and 30 billion dollars in year 3. Which of the following is correct?

A. The national debt fell in years 2 and 3, because the deficit was smaller each year
B. The national debt was 1,530 billion dollars at the end of year 3
C. The national debt was 1,450 billion dollars at the end of year 3, because the deficit had been cut by 50 billion dollars
D. By year 3 the government had moved to a budget surplus of 50 billion dollars
E. The national debt rose in every year, reaching 1,660 billion dollars at the end of year 3

[1 point] 13. The national debt of Orvelle is 3,000 billion dollars. As old government bonds mature and are replaced with new ones, the average interest rate the government pays on its debt rises from 2 percent to 4 percent. If other government spending and tax revenue do not change, the government's annual interest payments and its budget deficit will:

A. rise from 60 billion to about 61.2 billion dollars, because the interest rate has risen by 2 percent; the deficit grows by about 1.2 billion dollars
B. rise from 6 billion to 12 billion dollars; the deficit grows by 6 billion dollars
C. rise from 60 billion to 120 billion dollars; the deficit grows by 60 billion dollars
D. rise from 60 billion to 120 billion dollars; the deficit does not change, because interest payments are not purchases of goods and services
E. rise from 60 billion to 120 billion dollars; the deficit grows by 120 billion dollars

[1 point] 14. Norvald's government budget is initially balanced, and the loanable funds market is in equilibrium at a real interest rate of 3 percent, with 500 billion dollars borrowed, all of it by private firms for investment. The government then runs a deficit and borrows an extra 80 billion dollars at every real interest rate. In the new equilibrium the real interest rate is 4 percent and the total quantity of loanable funds is 530 billion dollars. How much private investment has been crowded out?

A. 80 billion dollars
B. 50 billion dollars
C. 30 billion dollars
D. None, because the total quantity of loanable funds has risen
E. 450 billion dollars

[1 point] 15. For many years the government of Ysolde runs large budget deficits, financed by borrowing from the public, to pay for higher transfer payments. Compared with an otherwise identical economy whose government budget is balanced, Ysolde is most likely to have:

A. a lower real interest rate and a larger stock of physical capital, because households save part of the transfers they receive
B. a larger stock of physical capital, because government borrowing increases the total quantity of loanable funds
C. the same long-run growth rate, because crowding out affects only aggregate demand in the short run
D. a higher real interest rate, less private investment and slower growth of its capital stock, so its long-run aggregate supply curve shifts right more slowly
E. a higher real interest rate and more private investment, because the higher interest rate draws out more saving

[1 point] 16. The table shows real GDP and population in Xandor and Yllaria in two consecutive years. Which country had the faster growth in real GDP per capita, and by approximately how much did real GDP per capita grow in each?

	Real GDP (billions of dollars)	Population (millions)
Xandor, year 1	500	50
Xandor, year 2	530	52
Yllaria, year 1	300	20
Yllaria, year 2	309	20

A. Xandor; about 6 percent in Xandor and 3 percent in Yllaria

B. Xandor; about 10 percent in Xandor and 3 percent in Yllaria

C. Yllaria; about 1.5 percent in Xandor and 3 percent in Yllaria

D. Yllaria; real GDP per capita fell by about 2 percent in Xandor and rose by 3 percent in Yllaria

E. Yllaria; about 2 percent in Xandor and 3 percent in Yllaria

[1 point] 17. Which of the following would most likely increase real output per worker in Venwick in the long run?

A. Firms install more and better machinery for each worker to use

B. A large inflow of new workers joins the labor force while the stock of capital stays the same

C. Consumer optimism raises consumption spending and shifts aggregate demand to the right

D. The central bank permanently raises the growth rate of the money supply

E. A rise in the world price of Venwick's main export raises its nominal GDP while the quantity it produces is unchanged

[1 point] 18. In Merrin, real GDP rose from 1,800 billion dollars in year 1 to 1,872 billion dollars in year 2, while total hours worked fell from 45 billion to 44.1 billion as the average workweek became shorter. Labor productivity, measured as real GDP per hour worked, grew by approximately:

A. 4 percent

B. 2 percent

C. -2 percent

D. 6 percent

E. about 2.45 percent

[1 point] 19. Which of the following government policies is most likely to raise Fallowmere's long-run rate of economic growth?

A. Sending every household a one-time rebate check to boost consumer spending

B. Lowering the policy interest rate to raise spending during a recession

C. Giving firms a tax credit for spending on research and development of new technology

D. Permanently raising the growth rate of the money supply

E. Raising transfer payments to retirees, financed by borrowing

[1 point] 20. The government of Selvara borrows 50 billion dollars to build new roads and ports. The extra borrowing raises the real interest rate and crowds out 20 billion dollars of private investment. Assume that each dollar of the new public capital raises future output by as much as a dollar of private capital would have. Which of the following is the best assessment of the program's long-run effect?

A. It must slow long-run growth, because any crowding out reduces the economy's stock of capital

B. It adds about 30 billion dollars to the economy's total stock of capital, so long-run aggregate supply shifts right and growth can rise despite the crowding out

C. It adds the full 50 billion dollars to the stock of capital, because crowding out lasts only while the roads and ports are being built

D. It adds about 70 billion dollars to the stock of capital, because public and private investment add together

E. It has no effect on long-run aggregate supply, because government spending shifts only aggregate demand

Short Answer (1 question)

[10 points] 21. Deficits, inflation and the long run. Pavonia is in long-run equilibrium, with unemployment at its natural rate and an inflation rate that workers and firms fully expect. Starting this year, the government increases its purchases of goods and services by 40 billion dollars a year. Tax revenue and transfer payments do not change, and the government finances the larger deficit by borrowing from the public. The table shows data for Pavonia.

Natural rate of unemployment	5%
Inflation rate (fully expected)	2%
Increase in government purchases	40 billion dollars a year
Budget deficit before the increase	25 billion dollars a year
National debt at the start of this year	1,250 billion dollars
Long-run growth rate of real GDP	3% a year

[2 points] (a) Draw a correctly labeled graph of the short-run and long-run Phillips curves for Pavonia. (i) Plot a point labeled A that shows Pavonia's current long-run equilibrium, and show the numerical values of the unemployment rate and the inflation rate at point A on the axes. (ii) Plot a point labeled B that shows the short-run effect of the increase in government purchases.

[3 points] (b) (i) Using the table, calculate Pavonia's budget deficit for this year and its national debt at the end of this year. Show your work. (ii) Draw a correctly labeled graph of the loanable funds market and show the effect of the government's borrowing on the real interest rate. (iii) Based on the change in the real interest rate that you showed in (ii), what will happen to private investment and to Pavonia's rate of long-run economic growth? Explain.

[2 points] (c) Assume that the higher government purchases continue and that, over time, workers and firms come to expect the inflation rate at point B. (i) What will happen to the short-run Phillips curve? Explain. (ii) What will Pavonia's unemployment rate be in the long run? Explain.

[3 points] (d) Some legislators propose that Pavonia's central bank buy the new government bonds with newly created money. Assume that the velocity of money is constant and that real GDP grows at the long-run rate shown in the table whatever the central bank does. (i) Calculate the growth rate of the money supply that is consistent with Pavonia's current inflation rate of 2 percent. Show your work. (ii) The central bank's bond purchases raise the growth rate of the money supply to 9 percent a year. Calculate the long-run inflation rate. Show your work. (iii) Explain how the faster money growth in (ii) affects the long-run Phillips curve and Pavonia's long-run unemployment rate.

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