

Name \_\_\_\_\_

**MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question. 35 questions, each 1.5 points**

- 1) The Bigdrill company drills for oil, which it sells for \$200 million to the Bigoil company to be made into gas. The Bigoil company's gas is sold for a total of \$600 million. What is the total contribution to the country's GDP from companies Bigdrill and Bigoil? 1) \_\_\_\_\_  
 A) \$400 million                      B) \$200 million                      C) \$600 million                      D) \$800 million
- 2) Government statisticians adjust GDP figures to include estimates of 2) \_\_\_\_\_  
 A) child-rearing services provided by stay-at-home parents.  
 B) the costs of pollution to society.  
 C) the value of homemaking (work done within the home).  
 D) the underground economy.
- 3) In the mid-to-late 1980s, the United States had "twin deficits" because both \_\_\_\_\_ and \_\_\_\_\_ were negative. 3) \_\_\_\_\_  
 A) government saving; the current account                      B) government saving; private saving  
 C) the current account; investment                      D) saving; investment
- 4) If the marginal product of capital doesn't change as the amount of capital increases, a figure showing the relationship between output and capital 4) \_\_\_\_\_  
 A) is a straight line with constant upward slope.  
 B) slopes upward with a slope that declines as the amount of capital increases.  
 C) is a vertical line.  
 D) is a straight line with a slope of zero.
- 5) The Upstart Company has the following production function. 5) \_\_\_\_\_

Number of Workers	Number of Cases Produced
0	0
1	10
2	19
3	26
4	31
5	34

If the company hires 4 workers, which of the following could be the real wage rate?

- A) 4                      B) 6                      C) 8                      D) 2
- 6) Suppose the marginal product of labor is 6) \_\_\_\_\_  
 $MPN = 200 - 0.5N$   
 where  $N$  is aggregate employment. The aggregate quantity of labor supplied is  $300 + 8w$ , where  $w$  is the real wage. If a supply shock increases the marginal product of labor by 10 (to  $MPN = 210 - 0.5N$ ), by how much does employment increase?  
 A) 4                      B) 0                      C) 16                      D) 8



- 16) The ease and quickness with which an asset can be exchanged for goods, services, or other assets is its \_\_\_\_\_ 16) \_\_\_\_\_  
 A) risk. B) velocity.  
 C) time to maturity. D) liquidity.
- 17) The interest rate on long-term bonds is somewhat higher than suggested by the expectations theory because \_\_\_\_\_ 17) \_\_\_\_\_  
 A) a risk premium exists.  
 B) an inflation premium must be added to long-term bonds.  
 C) the expectations theory doesn't account for taxes.  
 D) the Fed can only control short-term interest rates.
- 18) If the interest elasticity of money demand is  $-0.1$ , by what percent does money demand change if the nominal interest rate rises from 2% to 3%? \_\_\_\_\_ 18) \_\_\_\_\_  
 A) 0% B)  $-5\%$  C)  $5\%$  D)  $-0.1\%$
- 19) Turning points in business cycles occur when \_\_\_\_\_ 19) \_\_\_\_\_  
 A) the economy hits the peak or trough in the business cycle.  
 B) the business cycle begins to follow a new pattern that differs from previous business cycles.  
 C) a new business cycle is initiated at the trough.  
 D) a new business cycle is initiated at the peak.
- 20) You have just read that Australia has suffered a drought, destroying its wheat crop for this year. \_\_\_\_\_ 20) \_\_\_\_\_  
 The effect of this adverse supply shock on Australia would probably be  
 A) an increase in prices, an increase in nominal interest rates, but a decrease in real interest rates.  
 B) a decrease in prices and a decrease in real interest rates.  
 C) an increase in prices and an increase in real interest rates.  
 D) a decrease in prices, a decrease in nominal interest rates, but an increase in real interest rates.
- 21) Which of the following would shift the *FE* line to the right? \_\_\_\_\_ 21) \_\_\_\_\_  
 A) A decrease in the capital stock  
 B) An increase in the future marginal productivity of capital  
 C) An adverse supply shock  
 D) An increase in labor supply
- 22) A decline in expected future output would cause the *IS* curve to \_\_\_\_\_ 22) \_\_\_\_\_  
 A) shift up and to the right.  
 B) shift down and to the left.  
 C) remain unchanged.  
 D) shift up and to the right only if people face borrowing constraints.
- 23) You have just read that the Federal Reserve has increased the money supply to avoid a recession. \_\_\_\_\_ 23) \_\_\_\_\_  
 For a given price level, you would expect the *LM* curve to  
 A) shift up and to the left as the real money supply rises.  
 B) shift down and to the right as the real money supply rises.  
 C) shift down and to the right as the real money supply falls.  
 D) shift up and to the left as the real money supply falls.

- 24) An increase in money supply causes the real interest rate to \_\_\_\_\_ and the price level to \_\_\_\_\_ in general equilibrium. 24) \_\_\_\_\_  
 A) fall; fall B) rise; rise  
 C) remain unchanged; fall D) remain unchanged; rise
- 25) Classical economists would cite all of the following as reasons why the government cannot smooth out the business cycle EXCEPT that 25) \_\_\_\_\_  
 A) political constraints on policy actions prevent the government from carrying out effective policies.  
 B) the government has imperfect knowledge of the economy.  
 C) time lags between the onset of a recession and the implementation of effective countermeasures make anti-recessionary macroeconomic policies impractical.  
 D) only productivity shocks can cause real fluctuations in the business cycle.
- 26) According to real business cycle theory, which of the following events is least likely to cause a recession? 26) \_\_\_\_\_  
 A) A decline in the money supply B) A decline in productivity  
 C) A decline in labor supply D) A decline in the capital stock
- 27) The basic classical model can account for the procyclical behavior of money if there 27) \_\_\_\_\_  
 A) is reverse causation from future output to money.  
 B) are propagation mechanisms in the economy.  
 C) are real business cycles caused by productivity shocks.  
 D) are rational expectations among the public.
- 28) If you expect a general price increase of 5% this year and the price of the hamburgers you sell increases by 10%, you would conclude that the relative price of your good has 28) \_\_\_\_\_  
 A) increased, and you would increase your output.  
 B) declined, and you would increase your output.  
 C) increased, and you would decrease your output.  
 D) declined, and you would decrease your output.
- 29) Assuming no change in the effort curve of employees, the efficiency wage model implies that 29) \_\_\_\_\_  
 A) an increase in the marginal productivity of capital will increase the real wage.  
 B) the real wage is rigid and equals the efficiency wage.  
 C) the real wage is procyclical.  
 D) the real wage exceeds the marginal productivity of labor.
- 30) Because of price stickiness in the Keynesian model, a decline in investment demand will not cause the 30) \_\_\_\_\_  
 A) *LM* curve to shift down and to the right in the short run.  
 B) *IS* curve to shift in the long run.  
 C) *LM* curve to shift in the long run.  
 D) *IS* curve to shift down and to the left in the short run.
- 31) When the demand for an imperfect competitor's product is greater than it planned, the firm will 31) \_\_\_\_\_  
 A) meet the demand at its set price.  
 B) increase the price of the product until supply equals demand.  
 C) reduce the price until supply equals demand.  
 D) allow a shortage of the product to develop, without changing the product's price.

- 32) In the Keynesian model, money is 32) \_\_\_\_\_  
A) neutral in both the short run and the long run.  
B) neutral in the short run, but not in the long run.  
C) neutral in neither the short run nor the long run.  
D) neutral in the long run, but not in the short run.
- 33) The idea that firms retain some workers in a recession, whom they would otherwise lay off, to avoid the costs of hiring and training, is called 33) \_\_\_\_\_  
A) union busting. B) labor hoarding.  
C) worker pooling. D) the gift exchange motive.
- 34) In the extended classical model, an anticipated decrease in the money supply would cause output to \_\_\_\_\_ and the price level to \_\_\_\_\_ in the short run. 34) \_\_\_\_\_  
A) increase; remain unchanged B) remain unchanged; increase  
C) remain unchanged; decrease D) increase; decrease
- 35) Suppose most people had anticipated that inflation would be 3% in the coming year because the Fed would increase the money supply by 3%. Instead, the Fed increases the money supply by 5%. In the short run, this would cause actual output to be \_\_\_\_\_ full-employment output and prices to increase by \_\_\_\_\_ 3%. 35) \_\_\_\_\_  
A) below; less than B) above; more than  
C) below; more than D) above; less than

**SHORT ANSWER/PROBLEMS: 4 problems, each 12.5 points ANSWER ONLY 4. I will correct the first four responses so CROSS OUT THE ANSWER you don't want me to grade**

36) An economy has full-employment output of 5000. Government purchases are 1000. Desired consumption and desired investment are given by

$$C^d = 3000 - 2000r + 0.10Y$$

$$I^d = 1000 - 4000r$$

where  $Y$  is output and  $r$  is the expected real interest rate.

(a) Find the real interest rate that clears the goods market. Assume that output equals full-employment output.

(b) Calculate the amount of saving, investment, and consumption in equilibrium.

(c) If a shock to wealth causes desired consumption to decline by 200 (so that the new equation for desired consumption is  $C^d = 2800 - 2000r + 0.10Y$ ), find the equilibrium real interest rate, saving, investment, and consumption.

37) Consider a small open economy with desired national saving of  $S^d = 20 + 200r^w$  and desired investment of  $I^d = 30 - 200r^w$ .

Calculate national saving, investment, and the current account balance in equilibrium when the real world interest rate is

(a)  $r^w = 0.025$ .

(b)  $r^w = 0.05$ .

(c)  $r^w = 0.0$ .

(d) Now suppose something causes desired national saving to increase by 10, so that it is now  $S^d = 30 + 200r^w$ . Repeat parts (a), (b), and (c).

(e) Suppose, with desired national saving at its original level of  $S^d = 20 + 200r^w$ , something causes desired investment to rise by 10, to  $I^d = 40 - 200r^w$ . Repeat parts (a), (b), and (c).



- 38) Country A has a capital–labor ratio that is initially twice as big as that of country B, but neither is yet in a steady state. Both countries have the same production function,  $f(k) = 6k^{1/2}$ . Country A has a 10% saving rate, 10% population growth rate, and 5% depreciation rate, while country B has a 20% saving rate, 10% population growth rate, and 20% depreciation rate.
- (a) Calculate the steady–state capital–labor ratio for each country. Does the initial capital–labor ratio affect your results?
  - (b) Calculate output per worker and consumption per worker for each country. Which country has the highest output per worker? The highest consumption per worker?



39) A classical economy is described by the following equations:

$$C^d = 500 + 0.5(Y - T) - 100r.$$

$$I^d = 350 - 100r.$$

$$L = 0.5Y - 200i.$$

$$\bar{Y} = 1850.$$

$$\pi^e = 0.05.$$

Government spending and taxes are equal where  $T = G = 200$ . The nominal money supply  $M = 3560$ .

(a) What are the equilibrium values of the real interest rate, the price level, consumption, and investment?

(b) Suppose an economic shock increases desired investment by 10, so it is now  $I^d = 360 - 100r$ . How does this affect the equilibrium values of the real interest rate, the price level, consumption, and investment?

(c) Returning to the initial situation in part (a), suppose an economic shock increases desired consumption by 10, so it is now  $C^d = 510 + 0.5(Y - T) - 100r$ . How does this affect the equilibrium values of the real interest rate, the price level, consumption, and investment?

- 40) Consider an economy in long-run equilibrium with an inflation rate ( $\pi$ ) of 0.08 per year and a natural unemployment rate of 0.05. Suppose Okun's law holds and a one percentage point increase in the unemployment rate reduces real output by 2% of full-employment output. The expectations-augmented Phillips curve is given by

$$\pi = \pi^e - 2.5 (u - 0.05).$$

Consider a two-year disinflation. In the first year,  $\pi = 0.06$  and  $\pi^e = 0.08$ . In the second year,  $\pi = 0.04$  and  $\pi^e = 0.05$ .

- (a) In the first year, what is the value of the unemployment rate?
- (b) In the first year, by what percentage does output fall short of full-employment output?
- (c) In the second year, what is the value of the unemployment rate?
- (d) In the second year, by what percentage does output fall short of full-employment output?

## Answer Key

Testname: 302A.FINAL.15

- 1) C
- 2) D
- 3) A
- 4) A
- 5) A
- 6) C
- 7) D
- 8) D
- 9) A
- 10) A
- 11) C
- 12) D
- 13) C
- 14) B
- 15) A
- 16) D
- 17) A
- 18) B
- 19) A
- 20) C
- 21) D
- 22) B
- 23) B
- 24) D
- 25) D
- 26) A
- 27) A
- 28) A
- 29) B
- 30) A
- 31) A
- 32) D
- 33) B
- 34) C
- 35) B
- 36) (a)  $S^d = Y - C^d - G = 5000 - [3000 - 2000r + 0.10Y] - 1000 = 500 + 2000r$ . Setting  $S^d = I^d$  gives  $500 + 2000r = 1000 - 4000r$ , which can be solved to get  $r = 0.0833$ .
- (b) Plugging this value of  $r$  into the equations for consumption and investment gives  $C = 3333$ ,  $I = 667$ , and  $S = 667$ .
- (c) Follow the same steps as above with the new equation for desired consumption to get:  $r = 0.05$ ,  $C = 3200$ ,  $I = 800$ ,  $S = 800$ .

Answer Key

Testname: 302A.FINAL.15

- 37) (a)  $S = 25, I = 25, CA = 0$ .  
 (b)  $S = 30, I = 20, CA = 10$ .  
 (c)  $S = 20, I = 30, CA = -10$ .  
 (d)  $r^w = 0.025: S = 35, I = 25, CA = 10$ .  
 $r^w = 0.050: S = 40, I = 20, CA = 20$ .  
 $r^w = 0.000: S = 30, I = 30, CA = 0$ .  
 (e)  $r^w = 0.025: S = 25, I = 35, CA = -10$ .  
 $r^w = 0.050: S = 30, I = 30, CA = 0$ .  
 $r^w = 0.000: S = 20, I = 40, CA = -20$ .
- 38) (a) Using the formula  $sf(k) = (n + d)k$ , country A:  $0.1 \times 6k^{1/2} = 0.15k$ , or  $k^{1/2} = 4$ , so  $k = 16$ ; country B:  $0.2 \times 6k^{1/2} = 0.3k$ , or  $k^{1/2} = 4$ , so  $k = 16$  also. The initial capital-labor ratios have no effect on the steady-state capital-labor ratios.  
 (b)  $y = 6k^{1/2} = 24$  for both countries.  $c = (1 - s)y$ , so country A has  $c = 0.9y = 21.6$ , while country B has  $c = 0.8y = 19.2$ . The two countries have the same capital-labor ratio and output per worker, but different consumption per worker.
- 39) (a)  $S^d = Y - C^d - G = 0.5Y - 400 + 100r - 200$ . Set  $S^d = I^d$ :  $0.5Y - 600 + 100r = 350 - 100r$ , so  $200r = 950 - 0.5Y$  (IS). With  $Y = 1850, r = 0.125$ . Then  $C = 1312.5$  and  $I = 337.5$ . From the money demand equation,  $3560/P = (0.5 \times 1850) - (200 \times .175) = 925 - 35 = 890$ , so  $P = 4$ .  
 (b) Set  $S^d = I^d$ :  $0.5Y - 600 + 100r = 360 - 100r$ , so  $200r = 960 - 0.5Y$  (IS). With  $Y = 1850, r = .175$ . Then  $C = 1307.5$  and  $I = 342.5$ . From the money demand equation,  $3560/P = (0.5 \times 1850) - (200 \times .225) = 925 - 45 = 880$ , so  $P = 4.045$ .  
 (c) Set  $S^d = I^d$ :  $0.5Y - 610 + 100r = 350 - 100r$ , so  $200r = 960 - 0.5Y$  (IS). With  $Y = 1850, r = .175$ . Then  $C = 1317.5, I = 332.5$ , and  $P = 4.045$ .
- 40) (a)  $.06 = .08 - 2.5(u - .05)$ , so  $u = .058$ .  
 (b)  $.058 - .05 = .008 = 0.8\%$ ;  $0.8 \times 2\% = 1.6\%$ .  
 (c)  $.04 = .05 - 2.5(u - .05)$ , so  $u = .054$ .  
 (d)  $.054 - .05 = .004 = 0.4\%$ ;  $0.4 \times 2\% = 0.8\%$ .  
 (e) sacrifice ratio = output shortfall/change in inflation rate =  $(1.6\% + 0.8\%)/(8\% - 4\%) = 2.4/4 = 0.6$ .