

## Final Exam - Economics 101a - Fall 2005

You will have 120 minutes to complete this exam. It is divided into 116 points. On multiple choice questions MC#1-MC#37, choose the best answer and mark it on your scantron.

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### **Section 1:** (30 points total, 3 points each, write on scantron)

**MC#1:** Which of the following would tend to lower the natural rate of unemployment.

- a) raise the legal minimum wage
- b) raise unemployment insurance benefits
- c) increase unionization of the labor force
- d) increase the money supply
- e) none of the above

**MC#2:** In the long run, a rise in money supply will lead to

- a) lower interest rates
- b) higher prices
- c) higher output
- d) lower real wage
- e) all of the above

**MC#3:** In the Solow growth model, all of the following grow in steady state at the rate of technological progress except:

- a) GDP per person
- b) consumption per person
- c) real rental rate
- d) real wage

**MC#4:** The Life-cycle and Permanent Income models of consumption are helpful in explaining why consumption rises strongly in response to

- a) a fall in the interest rate
- b) a temporary rise in income
- c) a permanent rise in income
- d) a tax cut

**MC#5:** According to the Keynesian Cross model of aggregate expenditure, fiscal policy that raises government spending will affect output \_\_\_\_\_ a tax cut of an equal size.

- a) more than
- b) less than
- c) the same amount as
- d) in the opposite direction as

**MC#6:** Which of the following can help avoid the 'time inconsistency' problem in monetary policy:

- a) central bank discretion
- b) efficiency wages
- c) rational expectations
- d) an inflation targeting-rule

**MC#7:** Suppose a country has the following Phillips curve:  $p = p^e - 0.4(u - u^n)$ , where expectations are adaptive. What is the sacrifice ratio here in terms of output (assuming that we are starting at the natural rate of unemployment, and using Okun's law)?

- a) 0
- b) 0.4
- c) 2.5
- d) 5
- e) 10

**MC#8:** Which of the following theories of the short run aggregate supply implies that the real wage falls when GDP rises:

- a) sticky price model.
- b) sticky wage model.
- c) imperfect information model
- d) none of the above.

**MC#9:** According to the Quantity Theory of Money, which of the following could generate a rise in overall price level:

- a) a fall in GDP
- b) a fall in the velocity of money
- c) a fall in the supply of money
- d) none of the above

**MC#10:** Under the Ricardian theory of debt, a tax cut today causes national saving to \_\_\_\_\_.

- a) rise
- b) fall
- c) not change
- d) move, but the direction is ambiguous

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**Problem 1: Growth** (22 points total)

Suppose a country has the following production function:  $Y = K^{1/2}L^{1/2}$  (Note: this is not yet in per-worker terms). Assume that the saving rate is 20%, the depreciation rate is 10%, and that there is no population growth or technological progress.

- a) (12 points) Using the Solow growth model, compute the steady state values of the following: (show your work)
- Capital stock per person
  - Consumption per person
  - Real rental rate on capital
  - Real wage rate
- b) (10 points) Suppose the saving rate is raised in this economy by some unspecified amount. What will happen to the steady state values of the variables in part (a): (mark on your scantron)
- MC#11:** Capital stock per person (a) rise (b) fall (c) no change (d) insufficient information
- MC#12:** Consumption per person (a) rise (b) fall (c) no change (d) insufficient information
- MC#13:** Real rental rate (a) rise (b) fall (c) no change (d) insufficient information
- MC#14:** Real wage rate (a) rise (b) fall (c) no change (d) insufficient information

In a couple of sentences explain your answer for the real wage rate above: how are labor supply and labor demand curves in the labor market affected by the higher saving rate in steady state?

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For the next three problems, assume the following usual conditions hold, unless instructed otherwise. Prices are completely fixed in the short run and completely flexible in the long run. Consumption is a function only of current disposable income, with a constant marginal propensity to consume. Investment is a function only of the interest rate. Real money demand is a function of the interest rate and income.

**Problem 2: Short Run and Long Run** (32 points total, 8 points each section)

Suppose Congress decides to cut government spending on a permanent basis to help balance the government budget. Use the IS-LM / AS-AD model to analyze the implications in the short run and the long run.

- a) (Write in blue book) Draw the IS-LM and AS-AD graphs to show the short run and long run equilibria following this policy. Assume that prices are completely fixed in the short run. Be sure to label the axes, curves, use arrows to show shifts in curves, and mark the equilibrium points: 1 for the initial equilibrium, 2 for the short run equilibrium, and 3 for the long-run equilibrium. Explain briefly why the curves are shifting.
- b) What happens to the following variables in the short run? (mark on your scantron)
- MC#15:** interest rate: a) rise b) fall c) no change d) ambiguous
- MC#16:** investment: a) rise b) fall c) no change d) ambiguous
- MC#17:** private saving: a) rise b) fall c) no change d) ambiguous
- MC#18:** real money demand: a) rise b) fall c) no change d) ambiguous

- c) What happens in the long run? For each of the variables listed in (b) above, state if it's long run value is the same as its value at the initial equilibrium before the government policy change (point 1 on your graphs), if it is higher in the long run than its initial level, or if it is lower, or ambiguous for the given information. (mark on your scantron)
- MC#19:** interest rate:            a) initial value    b) higher    c) lower            d) ambiguous  
**MC#20:** investment:            a) initial value    b) higher    c) lower            d) ambiguous  
**MC#21:** private saving:        a) initial value    b) higher    c) lower            d) ambiguous  
**MC#22:** real money demand: a) initial value    b) higher    c) lower            d) ambiguous
- d) Suppose now a different consumption function, saying consumption not only rises with income, but it also falls when the interest rate rises. Use the Fisher model of consumption to explain in 2-3 sentences why such a consumption function is reasonable. How is the long-run effect of the policy above different under this alternative consumption function? For each variable below, state if the variable moves more under the new consumption function than under the old one in part (c) above, moves less, the same, or ambiguous. (mark on your scantron)
- MC#23:** interest rate:            a) more            b) less        c) same            d) ambiguous  
**MC#24:** investment:            a) more            b) less        c) same            d) ambiguous  
**MC#25:** private saving:        a) more            b) less        c) same            d) ambiguous

**Problem 3: IS/LM in the Short Run** (22 points total)

Suppose the Federal Reserve were to raise the money supply. Use the IS-LM model to analyze the short run implications of this policy.

- a) (6 points) Graphically illustrate the short-run effect of this policy in an IS-LM graph. Be sure to label the axes, the curves, and use arrows showing the direction the curves shift. Also mark the initial equilibrium as point '1', and the short-run equilibrium as point '2'. Explain briefly the reason for any curve shift.
- b) (8 points) What will happen to the levels of the following variables in the short run? (Mark on your scantron.)
- MC#26:** output:                    a) rise            b) fall            c) no change      d) ambiguous  
**MC#27:** interest rate:            a) rise            b) fall            c) no change      d) ambiguous  
**MC#28:** investment:            a) rise            b) fall            c) no change      d) ambiguous  
**MC#29:** consumption:            a) rise            b) fall            c) no change      d) ambiguous
- c) (4 points) Suppose that investment is more responsive to changes in the interest rate than you assumed above. How would this change your answers to part (b)? In particular, for the first two variables from part (b), state if it changes more, less, the same, or if it is impossible to tell (ambiguous). (Mark on your scantron.)
- MC#30:** output:                    a) more            b) less            c) same            d) ambiguous  
**MC#31:** interest rate:            a) more            b) less            c) same            d) ambiguous
- d) (4 points) Suppose now instead that money demand is more responsive to changes in income than assumed above. How would this change your answers to part (b)? In particular, for the

first two variables from part (b), state if it changes more, less, the same, or if it is impossible to tell (ambiguous). (Mark on your scantron.)

**MC#32:** output:                    a) more        b) less        c) same        d) ambiguous

**MC#33:** interest rate:            a) more        b) less        c) same        d) ambiguous

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**Problem 4: IS/LM in the Short Run**    (10 points total)

Suppose that a country is experiencing a recession where consumption and investment expenditure are falling as well as GDP. Given just this information and the usual assumptions of the IS/LM AS/AD model, what might cause such a recession? For each of the economic shocks listed below, indicate if it could be a potential cause of this country's recession or not: (mark on your scantron)

**MC#34:** an exogenous rise in money demand (flight to liquidity)            a) yes        b) no

**MC#35:** a fall in autonomous consumption (fall consumer confidence)    a) yes        b) no

**MC#36:** a fall in autonomous investment (fall in business confidence)    a) yes        b) no

**MC#37:** an adverse supply shock (a rise in the price of oil)                a) yes        b) no

For any case you answered no, explain your logic – what about that shock is inconsistent with the economic statistics given for this country.

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