

Name _____ Student ID _____ TA or section _____

Final Exam - Economics 101 (Spring 2013)

You will have 120 minutes to complete this exam. There are 7 pages and 92 points.

Please write answers to all 58 MC questions on your scantron.

Mark on your scantron: Test form A

Section 1: (20 points total, 2 points each) Record the best answer on your scantron.

MC#1) How could France lower the long run average level 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) If a country lowers its population growth rate, what will this do to the steady state level of output per person (assume no technological progress)?

- a) rise
- b) fall
- c) no change
- d) ambiguous from the given information

MC#3) Which of the following could explain why the U.S. has a high steady state growth rate of total output?

- a) low population growth rate
- b) high rate of technological progress
- c) high saving rate
- d) all of the above
- e) both a and b but not c

MC#4) In the Quantity Theory of Money, which of the following could generate a rise in overall price level in the long run:

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

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) Suppose a country has the following Phillips curve: $\pi = \pi^e - 0.4(u - u^n)$, where expectations are adaptive. Compute the sacrifice ratio in terms of output (assuming that we are starting at the natural rate of unemployment, and using Okun's law $\Delta y = -2\Delta u$)?

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

MC#7) According to the Phillips Curve, which of the following can lower inflation?

- a) rise in oil prices
- b) unusually low unemployment
- c) expectations of lower inflation
- d) all of the above.

MC#8) If the U.S. is suffering a recession with high interest rates, which of the following could be the cause (making the usual IS-LM assumptions)?

- a) rise in money demand
- b) fall in investment confidence
- c) fall in consumer confidence
- d) rise in money supply
- e) all of the above

MC#9) If the U.S. is suffering a recession involving a drop in consumption, which of the following could be the cause (making the usual IS-LM assumptions)?

- a) rise in money demand
- b) fall in investment confidence
- c) fall in consumer confidence
- d) all of the above

MC#10) In the long run, the overall level of production in our economy depends upon:

- a) level of demand
- b) supply of labor and technology
- c) money supply
- d) all of the above

Problem 1: Neoclassical Model (20 points total)

Suppose the real side of the U.S. macroeconomy is characterized as follows:

Production:	$Y = 100 K^{1/2} L^{1/2}$
Factor supply:	$K = 16 \quad L = 4$
Government:	$G = 200 \quad T = 200$
Consumer behavior:	$C = 100 + 0.5(Y - T)$
Investment behavior:	$I = 400 - 1000r$

Suppose the nominal side of the economy is characterized by as follows:

Quantity theory of money:	$MV = PY$	where $V=4$
Nominal money supply:	$M = 100$	

(Y is real GDP, K capital, L labor, G government purchases, T taxes, C consumption, I investment, r real interest rate, P price level, M money supply, V velocity.)

a) (8 points) Compute the equilibrium levels of the following variables:

real interest rate, real wage, nominal wage

Show your work, and be careful about mathematical accuracy.

In a sentence or two, explain the economic logic of how equilibrium in the financial market determines the real interest rate here.

- b) (4 points) Suppose there is a rise in taxes, T . What effect will this have on the variables listed below? Mark the answers on your scantron. No computations necessary; no explanation required.
- MC#11)** real interest rate (a) rise (b) fall (c) no change (d) ambiguous
MC#12) consumption (a) rise (b) fall (c) no change (d) ambiguous
MC#13) private saving (a) rise (b) fall (c) no change (d) ambiguous
MC#14) investment (a) rise (b) fall (c) no change (d) ambiguous
- c) (4 points) Suppose now that there is a rise in velocity, V . (Assume taxes back at the original level.) What effects will this have?
- MC#15)** Price level (a) rise (b) fall (c) no change (d) ambiguous
MC#16) real wage (a) rise (b) fall (c) no change (d) ambiguous
MC#17) nominal wage (a) rise (b) fall (c) no change (d) ambiguous
MC#18) real money supply (a) rise (b) fall (c) no change (d) ambiguous
- d) (4 points) Suppose now that there is a fall in the capital stock due to an earthquake. (Assume taxes and velocity are back at their original levels.) What effects will this have?
- MC#19)** Real GDP (a) rise (b) fall (c) no change (d) ambiguous
MC#20) real interest rate (a) rise (b) fall (c) no change (d) ambiguous
MC#21) real wage (a) rise (b) fall (c) no change (d) ambiguous
MC#22) nominal wage (a) rise (b) fall (c) no change (d) ambiguous
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Problem 2: Solow Growth Model: (11 points total)

Suppose an economy can be characterized by the production function, written in per person terms: $y = f(k) = 2k^{0.5}$. Suppose the depreciation rate is 0.15, the saving rate is 0.20, and the population growth rate is 0.05. Assume there is no technological progress.

- a) (6 points) Using the Solow growth model, compute the steady state value of capital per person (k), and consumption per person.

- b) (5 points) Write out the equation for the Golden Rule condition, and explain the economic meaning. If the country reaches the golden rule steady state, compute the value of the real rental rate of capital? (Hint: this is not a lengthy computation.)

For the next two problems, make the usual IS-LM model assumptions, unless otherwise stated: prices are completely fixed in the short run; investment is just the usual function of the interest rate alone; consumption is a function of disposable income alone, with a constant marginal propensity to consume; money demand responds to income and interest rate.

Problem 3: IS/LM in the Short Run (15 points total)

Let the investment function be written: $I = \bar{I} - d r$, and suppose there is a shock that temporarily lowers \bar{I} .

- a) (6 points, mark on scantron) According to the IS-LM model, what will happen to the following in the short run? (You may draw an IS-LM graph to help you, but it is not required and it will not be graded.)
- | | | | | |
|--------------------------------|----------|---------|--------------|--------------|
| MC#23) IS curve shifts: | a) right | b) left | c) no shift | d) ambiguous |
| MC#24) LM curve shifts: | a) right | b) left | c) no shift | d) ambiguous |
| MC#25) output: | a) rise | b) fall | c) no change | d) ambiguous |
| MC#26) interest rate: | a) rise | b) fall | c) no change | d) ambiguous |
| MC#27) consumption: | a) rise | b) fall | c) no change | d) ambiguous |
| MC#28) investment: | a) rise | b) fall | c) no change | d) ambiguous |

- b) (5 points, mark on scantron) Suppose that the responsiveness of investment to the interested rate (parameter d in the investment function given above) is smaller than you assumed above. How would this affect the slopes of curves, and how would it affect your answers to part (b)? Indicate below if the variable changes more compared to the case in part (b), less, the same, or ambiguous from the given information.

MC#29) IS curve:	a) steeper	b) flatter	c) same	d) ambiguous
MC#30) LM curve:	a) steeper	b) flatter	c) same	d) ambiguous
MC#31) output:	a) more	b) less	c) same	d) ambiguous
MC#32) interest rate:	a) more	b) less	c) same	d) ambiguous
MC#33) investment:	a) more	b) less	c) same	d) ambiguous

- c) (4 points, mark on scantron) Suppose the money demand function now is less responsive to the income level than you assumed above (a lower value of the parameter e in the money demand function: $(M/P)^d = eY - fr$.) How would this affect the slopes of curves, and how would it affect your answers to part (b)? Indicate below if the variable changes more compared to the case in part (b), less, the same, or ambiguous.

MC#34) IS curve:	a) steeper	b) flatter	c) same	d) ambiguous
MC#35) LM curve:	a) steeper	b) flatter	c) same	d) ambiguous
MC#36) output:	a) more	b) less	c) same	d) ambiguous
MC#37) interest rate:	a) more	b) less	c) same	d) ambiguous

Problem 4: Short Run and Long Run (16 points total)

Suppose there is a permanent rise in money supply. Use the IS-LM / AS-AD model to analyze the implications in the short run and the long run.

- a) (5 points) 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 in a sentence each curve shift.

b) (6 points, write on scantron) What happens to the following real variables in the short run?

MC#38) output: a) rise b) fall c) no change d) ambiguous

MC#39) interest rate: a) rise b) fall c) no change d) ambiguous

MC#40) consumption: a) rise b) fall c) no change d) ambiguous

MC#41) investment: a) rise b) fall c) no change d) ambiguous

MC#42) real money demand: a) rise b) fall c) no change d) ambiguous

MC#43) private saving: a) rise b) fall c) no change d) ambiguous

c) (4 points, write on scantron) Compare the long run equilibrium (point 3 on your graph) to the initial level before the shock (point 1 on your graph). For each variable, is the long run value the same as the initial level before the shock, higher than this, lower or ambiguous?

MC#44) output: a) higher b) lower c) initial value d) ambiguous

MC#45) interest rate: a) higher b) lower c) initial value d) ambiguous

MC#46) price level: a) higher b) lower c) initial value d) ambiguous

MC#47) real money demand: a) higher b) lower c) initial value d) ambiguous

d) (1 point) When does the 'Classical Dichotomy' hold here?

MC#48) a) in short run b) in the long run c) both short and long run d) neither

Problem 5: Consumption Theory (10 points total)

Suppose Mr. Mankiw lives by the 2-period Fisher model of consumption, where he works during period 1 of his life, and he is retired and earns nothing during period 2 of his life. Suppose that under the current interest rate he happens to choose equal levels of consumption in both periods.

- a) (4 points) If the interest rate were to rise, how would the following variables be affected, given our usual assumptions about how indifference curves work? Write on scantron.

MC#49) consumption in period 1 a) rise b) fall c) no change d) ambiguous

MC#50) saving in period 1 a) rise b) fall c) no change d) ambiguous

MC#51) consumption in period 2 a) rise b) fall c) no change d) ambiguous

MC#52) APC in period 1 a) rise b) fall c) no change d) ambiguous

(APC is the average propensity to consume)

- b) (4 points) Suppose Mr. Mankiw now expects to receive some income in retirement in period 2 (royalties from his best-selling textbook). How will this affect the following. (assume interest rate back to normal).

MC#53) consumption in period 1 a) rise b) fall c) no change d) ambiguous

MC#54) saving in period 1 a) rise b) fall c) no change d) ambiguous

MC#55) consumption in period 2 a) rise b) fall c) no change d) ambiguous

MC#56) APC in period 1 a) rise b) fall c) no change d) ambiguous

- c) (2 points total) The Fisher model of consumption (used here) implies that the consumption function depends on:

MC#57) a) current income b) future income c) interest rate d) all of the above

The Keynesian model of consumption (used in problem 1 above) implies that as current income rises, the APC will:

MC#58) a) rise b) fall c) not change d) ambiguous

No work below this line will be graded. You may use this space and the next page for scratch work.