

QUESTION 1

Consider IS-LM model. Let the money demand function be $(\frac{M}{P})^d = 60 - 20r + 4Y$, the consumption function be $C = 12 + 0.8(Y - T)$ and the investment function be $I = 30 - 2r$ where r is the real interest rate in %. Let T denote taxes, G denote government purchases, P denote the price level and M^S denote the money supply.

Calculate the following (Round up to TWO decimal places if needed. Enter only numbers)

(1) Assume that $T = 20$, $G = 10$, $P = 3$ and $M^S = 300$.

(a) Calculate the equilibrium real interest rate r

(b) Calculate income Y

(c) Calculate consumption C

(d) Calculate investment I

(2) Suppose the government decreases G from 10 to 6. What will be the new equilibrium level of Y and r ?

(a) $r =$

(b) $Y =$

(3) Suppose the new level of money supply is $M^S = 240$ (while G stays at 10), what is the new equilibrium level of Y and r ?

(a) $r =$

(b) $Y =$

QUESTION 2

Suppose the production of a country is $Y = K^{0.2}(EL)^{0.8}$. And its depreciation rate is 0.07, population growth rate is 0.02, technology growth rate is 0.01, saving rate is 0.30.

Answer the following questions.

(a) What is the long-run growth rate of **per worker output**? (Enter decimals. Numbers only)

(b) What is the long-run growth rate of **aggregate output**? (Enter decimals. Numbers only)

(c) (Fill in blanks) If the government want to increase the per-effective-worker consumption permanently, government should (increase/decrease)

saving rate to . This new saving rate should be decimals. Round up to TWO decimals if needed.

QUESTION 3

Suppose the production function of a country is $Y = K^{\frac{1}{3}}L^{\frac{2}{3}}$. And its capital stock is $K = 27$ and labor force is $L^S = 64$.

Calculate the following (Enter only numbers. Round up to ONE decimal place if needed)

(a) What is the labor market clearing real wage under flexible real wage?

(b) What is the number of the unemployed under rigid real wage $\frac{W}{P} = \frac{2}{3}$?

QUESTION 4

In the Solow growth model, capital per worker in the new steady state will be higher if: (Choose ALL that applies)

- ☐ population growth rate increases
- ☐ saving rate increases
- ☐ depreciation rate increases

QUESTION 5

Suppose there is an event in the economy that lowers consumer confidence which led people to save more. The Fed would like to stabilize demand in the economy. What should the Fed do?

- ☐ increase the money supply to lower the interest rate
- ☐ decrease the money supply to lower the interest rate
- ☐ increase the money supply to raise the interest rate
- ☐ decrease the money supply to raise the interest rate

QUESTION 6

Choose all correct statements.

- ☐ Suppose demand for real money balances is not a function of interest rate. Then the LM curve is horizontal.
- ☐ Suppose investment is not a function of interest rate. Then the LM curve is horizontal.
- ☐ Suppose the LM curve is horizontal. Then monetary policy is ineffective.
- ☐ Suppose investment is not a function of interest rate. Then the IS curve is vertical.
- ☐ None are correct

QUESTION 7

Consider using income approach to compute US GDP. Suppose there is a Mexican citizen working at a US firm located in US, and earned wages of \$500. There is also a US citizen that earns wages of \$800 in a Mexican firm located in Mexico.

If US GNP is \$3000, what is US GDP? Enter only numbers. Do not enter letters or symbols.

QUESTION 8

In the long run, increasing capital stock is the only way to increase the GDP per capita of a nation.

- ☐ True
- ☐ False

QUESTION 9

Two economies X and Y are identical except that X has twice the price level of Y. Then in the long run, the output of X is also twice as high.

- ☐ True
☐ False

QUESTION 10

Suppose that unemployed workers find jobs at the rate of 15% per period and the job separation rate for employed workers is 5% per period. Assume the size of the labor force is fixed at 1000. At period $t=0$, number of unemployed $U_0 = 200$ and employed $E_0 = 800$.

Calculate the following (Round up to ONE decimal place if needed. Enter only numbers)

- (a) What is the unemployment rate at $t=1$ in percentage?
- (b) What is the natural (steady state) unemployment rate in percentage?
- (c) Starting from the steady state where the unemployment rate is at its natural rate, suppose that suddenly the job finding rate falls to 10% and separation rises to 8%, what will be the unemployment rate of one period after in percentage?

QUESTION 11

(Fill in all blanks)

Decrease in money demand shifts the (IS/LM) curve to the (left/right) and leads to a (increase/decrease) in Y and (increase/decrease) in r .

In order to stabilize Y :

Monetary policy can (increase/decrease) money supply.

Fiscal policy can (increase/decrease) G or (increase/decrease) T .

QUESTION 12

Which is/are **incorrect** about the Cobb-Douglas production function: $Y = K^\alpha L^{1-\alpha}$ ($0 < \alpha < 1$)?

- ☐ All are correct
- ☐ it increases in both K and L
- ☐ the share of total income that goes to capital and labor depend on the amount of K and L
- ☐ it exhibits diminishing marginal returns to both K and L
- ☐ it is constant returns to scale

QUESTION 13

An American worker is hired by a German consulting firm operating in New York. They pay him \$50,000 in wages. The new worker's contribution is to bring a new client to the firm that buys consulting services for \$70,000. Assume no other new cost was involved in this other than the wage. The client is a Mexican firm located in Mexico City. Which of the following is correct?

- ☐ National income increases by \$50,000 and factor payments from abroad increase by \$50,000, so US GDP remains unchanged
- ☐ National income increases by \$50,000 and factor payments to abroad increase by \$20,000, so US GDP increases by \$70,000
- ☐ Consumption increases by \$50,000 and exports increase by \$20,000, so US GDP increases by \$70,000
- ☐ Consumption increases by \$70,000 and imports increase by \$70,000, so US GDP remains unchanged

QUESTION 14

Suppose there are three factories in Macroland and the following occurred in 2019: Metal, plastic and a car factory. Metal factory produces \$200, plastic factory produces \$500, and car factory produces \$700, of its respective products. The metal factory sells all of its output to the car factory. The plastic factory sells \$80 worth of plastic to the car factory, \$20 to the government, and the rest to consumers. The Car factory exports \$50 of its cars and sells the rest to consumers.

What is the GDP of Macroland 2019? (Enter only numbers. Do not enter symbols or letters)

QUESTION 15

Consider an economy where population growth is 0, but technology growth is positive and equal to g . Suppose that the population growth rate decreases.

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|---|--------------------|
| ☒ (a) What is the direction of change of steady state level of output per effective worker? | A. increases |
| ☐ (b) What is the effect on the long run level of output per effective worker? | B. does not change |
| ☐ (c) What is the effect on the long run growth rate of aggregate output? | C. decreases |

QUESTION 16

A farmer grows sells a bucket of milk to a cheesemaker for \$12. The cheesemaker turns the milk into cheese and then sells the cheese to a pizzamaker for \$20. The pizzamaker uses the cheese to bake pizza and sells the pizza to an economist for \$35. The economist eats the bread.

What is the value added by each person? What is the overall contribution to GDP of these transactions?

Answer the following. Enter numbers only. Do not enter symbols or letters.

- (a) Value added by farmer:
- (b) Value added by cheesemaker:
- (c) Value added by pizzamaker:
- (d) Overall contribution to GDP:

QUESTION 17

Since the consumption is a function of disposable income, the consumption will be reduced by \$100 if the government increase tax by \$100.

- ☐ True
- ☐ False

QUESTION 18

Suppose the marginal propensity to consume of a consumer is 0.8 and this consumer earns an extra \$1200. The consumption spending of this consumer would be expected to increase by how much? Only enter numbers. Do not enter letters or symbols.

QUESTION 19

Assume there is a decrease in both output and interest rates. One example would be the case of the Great Depression. Any of the following could produce such situation EXCEPT

- ☐ Contractionary monetary policies implemented by the Fed
- ☐ Reduction in consumer spending due to a stock market crash
- ☐ Contractionary fiscal policies implemented by fiscal authority
- ☐ Reduction in investment demand due to bank failures

QUESTION 20

In the IS-LM model, in order to counteract contractionary shocks to the economy, the government or the Fed should respond to them with contractionary fiscal or monetary policies.

- ☐ True
- ☐ False