QUIZ ON SOLOWIAN MODEL OF GROWTH

Pascal Michaillat

Question 1

In the Solow model, which of the following statements is always true?

A) Investment equals depreciation.

B) Investment equals the capital stock minus depreciation.

C) The capital stock equals investment minus depreciation.

D) Any change in the capital stock equals investment minus depreciation.

E) The increase in investment equals the capital stock minus depreciation.

Question 2

In the Solow model, capital per worker will decrease over time when:

A) Investment per worker equals saving per worker.

B) Investment per worker is less than saving per worker.

C) Investment per worker is less than depreciation per worker.

D) Investment per worker is more than saving per worker.

E) Investment per worker is more than depreciation per worker.

Question 3

In the Solow model, when the economy is operating at the steady state, we know that:

A) Saving equals consumption.

B) Saving is less than consumption.

C) Saving equals capital depreciation.

D) Saving exceeds capital depreciation each year by a constant amount.

E) Saving is more than consumption.

Question 4

In the Solow model, an increase in the saving rate will not affect which of the following variables in the long run?

A) Output per worker

B) Capital per worker

C) Investment per worker

D) Depreciation per worker

E) The growth rate of output per worker

Question 5

In the Solow model, which of the following will not cause an increase in output per worker in the long run?

A) An increase in the saving rate

B) A reduction in the depreciation rate

C) An increase in the level of technology

D) A one-time increase of the capital stock by 50%

Question 6

Suppose that due to a military conflict a country experiences a large reduction in its capital stock. Assume no other effects of this event on the economy. According to the Solow model, which of the following will occur as the economy adjusts to this situation?

A) A relatively low growth rate of GDP for some time

B) A relatively high growth rate of GDP for some time

C) Zero growth of GDP for some time, followed by a high growth rate of GDP

D) Positive growth of GDP, followed by negative growth, and then zero growth

E) Normal growth of GDP, but at a permanently lower level of GDP

Question 7

Suppose the saving rate is initially more than the golden-rule saving rate. Then according to the basic Solow model, a reduction in the saving rate may cause:

A) An increase in the capital per worker

B) An increase in output per worker

C) An increase in consumption per worker

D) An increase in investment per worker

Question 8

In the basic Solow model, when steady-state capital per worker is above the golden-rule level, we know with certainty that an increase in the saving rate will:

A) Increase consumption in both the short run and the long run

B) Decrease consumption in both the short run and the long run

C) Decrease consumption in the short run, and increase it in the long run

D) Increase consumption in the short run, and decrease it in the long run

Question 9

In the basic Solow model, suppose there is a small increase in the saving rate. This increase causes an increase in consumption per capita in the long run when:

A) The saving rate is below the golden-rule saving rate.

B) The saving is used for education rather than physical capital.

C) The rate of saving exceeds the rate of depreciation.

D) The saving rate is above the golden-rule saving rate.

Question 10

Suppose two countries are identical in every way, except that country A has a higher rate of depreciation than country B. According to the basic Solow model, we know with certainty that:

A) Steady-state consumption in A is higher than in B.

B) Steady-state consumption in A is lower than in B.

C) Steady-state consumption in A and in B are equal.

D) Steady-state growth of output per worker is higher in A than in B.

E) Steady-state growth of output per worker is lower in A than in B.

Question 11

In the production function $Y = F(K, AN)$, constant returns to scale implies that output will increase by 7% when:

A) K and N increase by 7%.

B) N or A increase by 7%.

C) N and A increase by 7%.

D) K increases by 7%.

E) K and N and A increase by 7%.

Question 12

Suppose the following situation prevails in the Solow growth model: $K(t+1) < K(t)$. Given this information, we know with certainty that:

A) Private saving equals capital depreciation in period t.

B) Private saving is greater than capital depreciation in period t.

C) Private saving is lower than capital depreciation in period t.

D) The saving rate is lower in period t+1 than in period t.

E) The depreciation rate is higher in period t+1 than in period t.

Question 13

Consider the Solow model with technological progress and population growth and use the following information to answer the five questions below: (1) the rate of depreciation is 10% per year, (2) the population growth rate is 2% per year, and (3) the growth rate of technology is 3% per year. What is the level of investment needed to maintain a constant capital stock in this economy?

A) 0.02K

B) 0.03K

C) 0.05K

D) 0.10K

E) 0.15K

Question 14

In the model of Question 13, what is the level of investment needed to maintain constant capital per effective worker in this economy?

A) 0.02K

B) 0.03K

C) 0.05K

D) 0.10K

E) 0.15K

Question 15

In the model of Question 13, what is the steady-state growth rate of output?

A) 2%

B) 3%

C) 5%

D) 10%

E) 15%