

Matr.-Nr. _____

Name: _____

Examination

11063: Macroeconomics

5025: Economics II
(Intermediate Macroeconomics)

Semester:

Winter Semester 2009/2010

Examiners:

Prof. Dr. Gerhard Schwödiauer/
Prof. Dr. Joachim Weimann

The following aids may be used:

Non-programmable pocket calculators;
English language dictionaries without
any marking.

Time:

120 minutes

This exam comprises 20 problems. For each problem exactly one of the three optional answers is correct. Do not mark more than one answer to any of the questions, otherwise the solution will be considered false. For every correct answer you obtain 2 points, for every false answer 1 point is subtracted. If no answer is marked you neither obtain nor lose a point. In order to pass this exam at least 10 points are needed.

Make sure that this copy of the exam bears your matriculation number and name in the appropriate fields at the top of this page.

Good luck!

Examination Questions:

1. Consider a closed economy with a private marginal propensity to consume of 0.3 and a marginal tax rate of $2/3$. The central bank succeeds in keeping the interest rates relevant for saving and investment plans constant. The government increases lump-sum social spending by 1 billion euros. If investment plans do not depend on current changes in GDP, and the government finances its additional expenditure by increasing its debt, the horizontal rightward shift in the IS-curve amounts to

- | | | |
|--------------------------|----|--------------------|
| <input type="checkbox"/> | a) | 1/3 billion euros. |
| <input type="checkbox"/> | b) | 2/3 billion euros. |
| <input type="checkbox"/> | c) | 1 billion euros. |

2. Assume that under the assumptions made in problem 1, the government keeps its deficit constant by cutting public investment spending. In this case, the IS-curve

- | | | |
|--------------------------|----|--|
| <input type="checkbox"/> | a) | does not shift. |
| <input type="checkbox"/> | b) | shifts to the left by 1 billion euros. |
| <input type="checkbox"/> | c) | shifts to the left by 3 billion euros. |

3. Assume that real GDP is at its natural level when the producers become more pessimistic about their future profits. According to Keynesian theory,
- a) the interest rate falls sufficiently fast so that, in the short run, the balance of planned saving and investment is maintained at an unchanged level of GDP.
 - b) the balance of planned saving and investment is maintained by a short-run fall in real GDP.
 - c) the price level falls sufficiently fast so that, in the short run, aggregate demand is kept at its previous level.

4. Under the assumption made in Question 2, would the multiplier effect of a change in lump-sum transfer payments be

- a) reduced
- b) increased
- c) unchanged

if the marginal propensity to consume were higher?

5. Assume that the demand for real balances is not only dependent on the interest rate and on real GDP but is also an increasing function of real financial wealth $V = (M + B)/P$. In order to ensure that for an unchanged IS-curve, a fall in the aggregate price level P increases aggregate demand, one has to assume that the elasticity of money demand with respect to V is

- a) equal to 1.
- b) a constant.
- c) smaller than 1.

6. If one interpretes the so-called quantity equation $M_t \cdot v_t = P_t Y_t$ as a “money-market” equilibrium condition, and the demand for money is only transaction demand in the sense of the Baumol-Tobin model, then the velocity of circulation v is

- a) an increasing function of both the rate of interest and GDP.
- b) a decreasing function of the rate of interest but independent of GDP.
- c) a decreasing function of both the rate of interest and GDP.

7. Assume a standard short-run AS -curve and an AD -curve derived, e.g., from a standard IS-LM model. In order to avoid that the government measure described in Question 2 leads to a fall in the short-run equilibrium price level, the central bank would have to

- a) keep the money supply constant.
- b) engage in an expansionary open-market policy.
- c) keep the current interest rate constant.

8. Assume that the central bank undertakes an expansionary open-market operation in the volume of 10 billion euros. Assume further that the non-banking private sector keeps its money reserves in cash and sight deposits with commercial banks in the proportion of 1:9, while the commercial banks do not keep cash reserves. The central bank measure results in an increase of the M1-money supply to the non-banking private sector of

- a) 100 billion euros.
 b) 125 billion euros.
 c) 150 billion euros.

9. Combine a standard, linear expectations-augmented Phillips curve and the hypothesis of static inflation expectation. Assume that the unemployment rate in period $t-1$ was below the natural rate and economic policy wants to keep it at that level also in period t . Then $\pi_t - \pi_{t-1}$ equals

- a) $\pi_{t-1} - \pi_{t-1}^e > 0$
 b) $\frac{1}{2}(\pi_{t-1} - \pi_{t-1}^e) > 0$
 c) $-\frac{1}{2}(\pi_{t-1} - \pi_{t-1}^e) < 0$

10. An economy in medium-run equilibrium is disturbed by a 10% increase in money supply which was not anticipated and is expected not to be repeated. Assume that money demand does not depend on real financial wealth $V = (M + B)/P$. Assume further that the increase in M is brought about by an open-market operation. Then the economy eventually returns to a medium-run equilibrium with a price level which is higher than the previous equilibrium price level by

- a) exactly 10 %.
 b) more than 10%.
 c) less than 10%

11. Suppose that all firms produce according to the production function $Y = K^{1/4}N^{3/4}$, and are price takers both in output and labor markets.

Assume further that the current wage rate is fixed at $W=P^e$, where P^e is the price level expected for the current period. The corresponding Phillips Curve

$$\pi = \pi^e - b(u - u_n)$$

has a slope

- a) $b=1/4$
 b) $b=4$.
 c) $b=3/4$

12. Assume a standard short-run AS-curve and an AD-curve derived from a standard IS-LM model. Current money supply is reduced and economic agents believe that as a consequence the longer-run future inflation rate will fall too. This will

- a) Cause a fall in the natural real rate of interest
- b) Cause a rise in the natural real rate of interest
- c) Cause a fall in the medium-run equilibrium nominal rate of interest

13. An economy in medium-run equilibrium is disturbed by a rise in income tax which is expected to last for a while but does not have a significant effect on producers' behaviour. In this case,

- a) the price level falls in the short run but, since there is no change in the supply of money, in the medium run returns to its previous level.
- b) the interest rate falls in the short run but in the medium run returns to its previous natural level.
- c) in the medium run the price falls by more than in the short run, and the interest rate reaches a lower than previous natural level.

14. Assume that the extent of monopolisation in the markets for goods and services increases permanently. Which of the following three statements is correct?

- a) Without any change in fiscal and monetary policy, the price level rises in the short run in proportion to the increase in the mark-up, without a change in real GDP.
- b) Without any change in fiscal and monetary policy, real GDP falls in the medium run while the price level rises by more than in the short run.
- c) By a restrictive monetary or fiscal policy the government can prevent a rise in the price level, but only at the cost of a lower medium-run equilibrium real GDP than in case b).

15. Assume that for all periods real aggregate saving at normal (natural) GDP is 30 % of the respective natural levels of real GDP. In order to increase from one period to the next the normal level of real GDP by 1 unit, the capital stock (measured in GDP units) has to be increased by 5 units; the depreciation rate on the capital stock is 3 % per period. Under these circumstances, Harrod's warranted rate of growth is

- a) 2 %.
- b) 3 %.
- c) 4 %.

16. Okun's law states that

- a) the fall in the unemployment rate from one period to the next is linearly related to the extent the actual growth rate of real GDP exceeds the growth rate of its natural level.
- b) the unemployment rate in the current period is negatively correlated with the real growth rate of GDP in the previous period.
- c) the fall in the unemployment rate from one period to the next is linearly related to the extent the actual inflation rate exceeds the expected inflation rate.

17. For an economy with a production function $Y = K^{1/2}N^{1/2}$, a saving rate of 0.6, a depreciation rate of 0.03, and a steady-state growth rate of 3 %, the steady-state capital intensity is

- a) smaller than 100.
- b) 100.
- c) bigger than 100.

18. For the economy of problem 17, the steady-state equilibrium is

- a) optimal in the sense of the Golden Rule.
- b) an under-accumulation equilibrium.
- c) an over-accumulation equilibrium.

19. Assume that the macroeconomic production function is given by $Y = K^{1/3}N^{1/3}$, where N (labor) is constant. The distributional consequences of a permanent increase in the saving rate are, under the assumption that the factors of production are awarded according to their marginal productivities,

- a) a medium- and long-run decline in the real capital rental rate leading to a lower share of income from capital and residual profits in GDP.
- b) a medium- and long-run decline in the real capital rental rate together with an increase in total real income from capital and residual profits.
- c) a medium- and long-run fall in the real wage rate leading to a fall in the total real wage bill.

20. Assume that the macroeconomic production function is

$$Y = [K^\alpha + N^\alpha]^{1/\alpha}$$

with $\alpha > 0$ and N constant, and that the factors of production are rewarded according to their marginal productivities. The economy is in a steady state equilibrium when a natural disaster destroys a significant part of its capital stock without hurting the people or changing their saving behaviour. As a consequence,

- a) the income distribution changes immediately in favour of capital owners, but converges back to the original distribution due to economic growth.
- b) real GDP per capita begins to grow, the capital intensity is increasing, and during this transitional phase the share of capital income in GDP rises.
- c) real wages fall immediately without, however, changing the share of wage income in GDP.

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