Matr.-Nr._____   Name:_____

Examination	5025: Economics II (Intermediate Macroeconomics)
Semester:	Summer Semester 2006/07
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; all are to be answered. 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 0.4 and a marginal tax rate of 50 %. The central bank succeeds in keeping the interest rates relevant for saving and investment plans constant. The government increases employment in the public sector thereby increasing its wage bill 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, aggregate effective demand (at constant prices) increases by

   a) 1 billion euros.
   b) 1.25 billion euros.
   c) 1.5 billion euros.

2. Assume that under the assumptions made in problem 1, the government keeps its deficit constant by cutting transfer payments. In this case, aggregate effective demand

   a) does not change.
   b) increases by 0.8 billion euros.
   c) increases by 1 billion euros.

3. Aggregate real saving (in short-run equilibrium)

☐ a) falls in the scenario of problem 1, but rises in the scenario of problem 2.
☐ b) rises both in the scenario of problem 1 and in that of problem 2.
☐ c) remains unchanged both in the scenario of problem 1 and in that of problem 2.

4. Under the assumptions made in problem 1 and the further hypothesis that an increase in the interest rate by 1 percentage point reduces aggregate planned expenditure by α units of real GDP, the slope of the IS-curve, $\partial i/\partial Y$, is

☐ a) $-0.4/\alpha$.
☐ b) $-\alpha/0.8$.
☐ c) $-0.8/\alpha$.

5. Assume that both the income elasticity and the interest elasticity of money demand is equal to 1. Then, under the assumptions made in problems 1 and 4, the slope of the AD-curve, $\partial P/\partial Y$, is

☐ a) $-\alpha A/MY^2$.
☐ b) $-AM/\alpha Y^2$.
☐ c) $-AMY^2/\alpha$.

(M denotes the stock of money, and A is some constant.)

6. The so-called "crowding-out" effect of an increase in government expenditure on private investment is the bigger

☐ a) the bigger is the marginal tax rate on personal incomes.
☐ b) the smaller is the interest sensitivity of money demand.
☐ c) the smaller is the income sensitivity of money demand.

7. Assume a standard short-run AS-curve and an AD-curve as resulting, e.g., from the assumptions in problems 1 and 4. In order to avoid that the government measure described in problem 1 leads to an increase in the short-run equilibrium price level, the central bank would have to

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

8. Assume that the central bank undertakes an expansive 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 $1:4$, while the commercial banks keep a cash reserve of $\frac{1}{4}$ of the volume of sight deposits. The central bank measure results in an increase of the money supply to the non-banking private sector of

   - a) 10 billion euros.
   - b) 20 billion euros.
   - c) 25 billion euros.

9. Instead of the assumption made in problem 8 assume that the non-banking private sector is willing to hold all additional money reserves in the form of sight deposits. In this case, the money supply increases by

   - a) 20 billion euros.
   - b) 40 billion euros.
   - c) 60 billion euros.

10. Assume that during every month the number of people entering the labor force is 4 % of the labor force at the beginning of the month, while 2 % are leaving the labor force. The number of people losing or quitting their jobs during a month is 1 % of total employment at the beginning of the month. The number of people finding a job during every month is 45 % of those unemployed at the beginning of a month. Assume that the percentage of people with a job leaving the labor force is the same as the percentage of unemployed leaving the labor force. Moreover, every person entering the labor force during a month is at first unemployed. The stationary unemployment rate (as a percentage of the labor force) is

   - a) 10 %.
   - b) 12.5 %.
   - c) 16.6 %.

   (Use a continuous-time model!)

11. Suppose that all firms produce according to the production function $Y = K^{\alpha} N^{1-\alpha}$, $0<\alpha<1$, 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) $b = 1 - \alpha$.
   - b) $b = 1/\alpha$.
   - c) $b = \alpha$.

12. Assume that all firms produce according to the production function from problem 11 with $\alpha=0$. Each firm possesses a local monopoly such that the price elasticity of its demand function is $\epsilon>1$. The current wage rate is given by $W=P^e(1-u)$. The slope of the corresponding Phillips Curve

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

is

☐ a) $b=\epsilon$.
☐ b) $b=\epsilon/(\epsilon-1)$.
☐ c) $b=1/\epsilon$.

13. Suppose that in the economy described in problem 12 the firms have to pay a tax on their wage bill. An increase in this tax rate

☐ a)   makes the Phillips Curve steeper and the natural rate of unemployment bigger.
☐ b)   makes the Phillips Curve flatter without changing the natural rate of unemployment.
☐ c)   makes the Phillips Curve flatter and the natural rate of unemployment bigger.

14. An economy in medium-run equilibrium is disturbed by a cut 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 rises 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 rises in the short run but in the medium run returns to its previous natural level.
☐ c)   in the medium run the price level rises by more than in the short run, and the interest rate reaches a higher than previous natural level.

15. An economy is in medium-run equilibrium when the previously independent central bank is made a department of the ministry of finance. This measure raises the private sector's prediction of future inflation rates, though actual monetary policy (in terms of nominal money supply) does not change. As a consequence,

☐ a)   the nominal interest rate rises and the price level falls in the short run while in the medium run, as long as money supply is not changed, both return to their previous equilibrium levels.
☐ b)   the price level rises in the short run and even more in the medium run, while the real interest rate falls in the short run and returns to its unchanged natural level in the medium run.
☐ c)   the price level rises both in the short and medium run; this feeds back positively into the private sector's expectations about future inflation rates which in turn leads to a rise in the medium-run equilibrium (natural) real rate of interest.

16. Assume that inputs of capital services K and labor N result in real GDP $Y = K^{\alpha}N^{\beta}$ with $\alpha=\beta=\frac{1}{3}$. N is constant and equal to 4. Saving is 20 % of GDP, and the capital stock depreciates at a rate of 5 %. The stationary equilibrium capital stock of this economy is

    a)   12.
    b)   16.
    c)   20.

17. Assume that the economy from problem 16 is in a stationary equilibrium when the saving rate increases permanently to 40 % of GDP. As a consequence real GDP starts to grow at a continuous-time rate of

    a)   5 %.
    b)   10 %.
    c)   15 %.

18. The distributional consequences of the permanent increase in the saving rate described in problem 17 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.

19. Which of the following propositions is correct?

    a)   The stationary equilibrium in problem 16 is optimal in the sense of the Golden Rule.
    b)   The stationary equilibrium in problem 17 is (Golden Rule) optimal.
    c)   The stationary equilibrium in problem 17 is an over-accumulation equilibrium.

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, reducing the share of wage income in GDP.

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