INTERMEDIATE MACROECONOMICS 721346A
2. Exam 24.1.2018
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1. Determine whether following statements are true or false. Right answer is worth 0.5 points and wrong answer costs 0.5 points. The total points cannot be negative however. There is a single right answer to each item.

    1. Current account is by definition equal to net exports.
    2. There is no significant correlation between investments and gross domestic product at business cycle frequencies.
    3. Gross domestic product is a flow variable
    4. The government purchases of national income accounts include e.g. defense costs, costs of public education and unemployment benefits.
    5. Inflation means growth rate of price level.
    6. In Keynesian macroeconomic models monetary policy does not affect the real economy at all.
    7. Keynesian macroeconomic models usually include some price rigidities in the short run.
    8. First fundamental welfare theorem states that competitive equilibrium allocation is Pareto efficient under certain conditions.
    9. Gross national product of Finland includes profits from a plant which is located in China but owned by a Finnish firm.
    10. According to Fisher equation there is an approximate relation $R = r - i$ between nominal interest rate R, real interest rate r and inflation rate i.
    11. Unemployment rate means the ratio of unemployed people to working age population.
    12. Production function $F(K, N) = K^{0.3}N^{0.7}$ has constant returns to scale.

2. Assume the following Solow growth model. Savings rate is s from which it follows that investments I and consumption C are

$$\begin{aligned} I &= sY \\ C &= (1-s)Y, \end{aligned}$$

where Y is production. Production function is of Cobb-Douglas form:

$$Y = K^{\theta} N^{1-\theta}.$$

In above equation K is capital stock which has law of motion

$$K' = (1-d)K + I,$$

where d is the depreciation rate. Second argument of production function is labor force N. Labor force grows with rate n:

$$N' = (1+n)N.$$

Parameters have following restrictions:

$$\begin{aligned} &0 < s < 1 \\ &0 < \theta < 1 \\ &0 < d < 1 \\ &n \geq 0. \end{aligned}$$

a) Derive the law of motion for capital per capita (K/N).

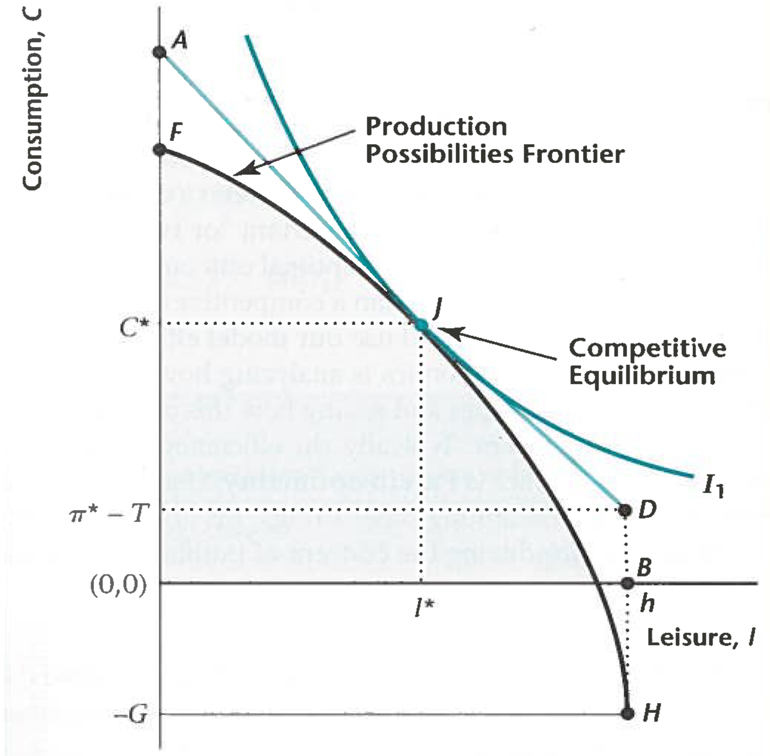
b) Show that capital per capita (K/N) has a strictly positive steady state which is stable.

c) What does golden rule mean within the Solow model?

3. a) What is meant by *double coincidence of wants* and how is it related to functions of money?

   b) What does *neutrality* of money mean?

4. Following figure depicts the equilibrium of the closed economy one period model. Analyze graphically the effects of an increase in government spending G. In particular, find out what happens to employment, output, consumption and real wage.



5. Explain what Ricardian equivalence theorem means. Also tell how realistic do you find the theorem. In particular, explain what features of the real world seem to violate the assumptions of the theorem.