嶺東技術學院

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The Cobb-Douglas production function is given by $f(x_1, x_2) = Ax_1^a x_2^b$. It turns out that the type of returns to scale of this function will depend on the magnitude of a+b. What values of a+b will be associated with the different kinds of returns to scale?　25%

John Hicks　Eugen Slutsky　　　　　　(substitution effect)　　　　　(income effect)
　　　　　　　　　　　　　　　　　　　　　　　　　25%

Consider the following macroeconomics model　20%

$$Y = C(Y - T) + I(R) + G \cdots (1)$$

$$\frac{M}{P} = L(Y, R) \cdots (2)$$

Where *Y*=GDP　*C*=Consumption　*T*=Tax　*I*=Investment　*R*=Interest Rate

　　　G=Government expenditures　*M/P*=real money supply

　　　L(Y,R)= real money demand

1　Interpret the economic meanings of all the above equation ?　5%

2　Describe the equilibrium of the model on the　*Y,R*　plane ?　　5%

3　Please provide mathematical　$\frac{\partial Y}{\partial M}\big|_{(1)+(2)} = ?$
　Explain carefully Keynes effect ?　5%

4　Define the Walras law ?Describe the equilibrium of Loanable-funds market ?　5%

　　　10%

　　　　　　　　　　　　　　　　　　　　5,000　　　　　　　　　　　　GDP
　　　　　　5%

　　　　　　　　　　　A Beautiful Mind　1994

　　　5%

Using Pontryagin's maximun principle , slove the following optimal growth problem: 10%

$$U_0 = \int_0^\infty u(c_t) \exp[-\theta t] dt$$

such that

$$f(k_t) = c_t + \frac{dk_t}{dt} + nk_t$$

where U=The family's welfare functions is discounted sum of instantaneous utility function; $u(c_t)$ is known as the instantaneous utility function; θ is the rate of time preference, which is assume to be strictly positive; The population N_t, grow at rate n ; k is the capital-labor ratio and $f(k_t) \equiv F(K_t / N_t, 1)$.

1   What is the Hamiltonian ?   5%

2   Calculate the first-order necessary conditions by taking the partial derivatives of the Hamiltonian ? Please provide Graph the phase diagram.   5%

15%

P.Krugman   MIT   Liquidity
Trap

1.   5%

2.   10%

1.   5%

2.

10%

試題結束