YLIOPISTOTENTTI - UNIVERSITY EXAM

Opiskelijan nimi / Student name:	Opiskelijanumero / Student number:

Opettaja täyttää / Lecturer fills in:

Opintojakson koodi and nimi / The code and the name of the course:

Koodi / Code: 721310S

Tentin nimi / Exam name: Economic Theory II

Tiedekunta / Faculty: OBS (kauppakorkeakoulu)

Tentin pvm / Date of exam: 12.12.2018	**Tentin kesto tunteina / Exam in hours: 3 h**
Tentaattori(t) / Examiner(s): Mikko Puhakka	**Opintopistemäärä / Credit units: 6**
	Sisäinen postios. / Internal address:

Sallitut apuvälineet / The devices allowed in the exam:

☐ Funktiolaskin /   ☐ Ohjelmoitava laskin /
Scientific calculator   Programmable calculator

☐ Muu materiaali, tarkennettu alla / Other material, specified below:

Tenttiin vastaaminen / Please answer the questions:
☒ Suomeksi / in Finnish   ☒ Englanniksi / in English

Suomenkielisessä tutkinto-ohjelmassa olevalla opiskelijalla on oikeus käyttää arvioitavassa opintosuorituksessa suomen kieltä, vaikka opintojakson opetuskieli olisi englanti. Tämä ei koske vieraan kielen opintoja. (Kts. Koulutuksen johtosääntö 18 §)

In a Finnish degree programme a student has a right to use Finnish language for their study attainment, even though the language of instruction is English, (excluding language studies) even when the language of instruction is other than Finnish. (See the Education Regulations 18 §)

Kysymyspaperi on palautettava / Paper with exam questions must be returned:
☒ Kyllä / Yes   ☐ Ei / No

Answer all the questions. You can answer in Finnish. The weight of each question is the same. Good Luck!

1. (6p) Consider the following ISLM model:

(a) $\dfrac{M}{P} = L(\underset{0}{r}, \underset{+}{Y})$

(b) $Y = E(\underset{+}{Y}, \underset{-}{r}, \underset{+}{G}, \underset{-}{T},)$ and with the assumption $0 < E_Y < 1$.

Equation (a) is the LM curve, where r is the real rate of interest. Equation (b) is the IS curve, where the left-hand side is the aggregate output (income) and on the right-hand side total expenditures (consumption, investment, and government expenditures (G)). In the brackets below, the signs of the partial derivatives are shown (the signs of their effect on expenditures (E) and demand for money (L)). Lump-sum taxes are denoted by T. The endogenous variables of the model are aggregate output (Y) and the real rate of interest (r).

(i)   What conditions do you need to make sure that the endogenous variables are functions of the exogenous variables?

(ii) What is the effect of a change in taxes (T) on the model's equilibrium with the assumption that public expenditures do not change?

2. (6p) Let the two period lived consumer's lifetime utility function be: $v(c_1, c_2) = \ln c_1 + \beta \ln c_2$, where $1 > \beta > 0$. Solve consumer's saving function, when her lifetime budget constraint is

$c_1 + \dfrac{c_2}{1+r} = y_1 - T_1 + \dfrac{y_2 - T_2}{1+r}$. T_1 and T_2 are (lump-sum) taxes in the respective periods. If taxes are decreased by Δ in **both** periods (i.e. new taxes are $T_1 - \Delta$ and $T_2 - \Delta$), how does saving change?

3. (6p)   (i) Write down the production function in the Harrod-Domar model.

(ii) What is the knife-edge (veitsenterä) property of this model?

(iii) Prove that aggregate output (GDP) per capita cannot grow in the long run in the Harrod-Domar model.

4. Let the objective function (to be maximized) for the policy authority to be

$M(y, \pi) = -\dfrac{1}{2}\left[(y - k\bar{y})^2 + a\pi^2\right]$ ja $k > 1$.

a is the weight given to inflation in the objective function. y ($\bar{y}$) is the aggregate output (potential output) and π the rate of inflation. The private sector's behavior is described by the following Phillips curve: $y = \bar{y} + \gamma(\pi - \pi^e), \gamma > 0$. π^e is the expected inflation. Is the Ramsey equilibrium time consistent in this model? Why, why not. Pay attention to the concepts, you use.

Return the question sheet!!!