KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2016/2017

SECOND SEMESTER EXAMINATION FOR THE DEGREE OF DOCTOR OF PHILOSOPHY IN ECONOMICS

EET 902: MACROECONOMICS I

DATE: FRIDAY 19TH MAY 2017 **TIME: 2.00 P.M. - 5.00 P.M.**

INSTRUCTIONS: Answer All questions. Each question carries 15 marks

QUESTION 1

a) Explain the policy implication of the life cycle consumption hypothesis **[3 Marks]**

b) Discuss the effects of Intergenerational Links on consumption and saving behavoiur in Africa. **[3 Marks]**

c) Assume the user cost of capital is expressed as follows:

$$c_k = P_K\left\{i + \delta - \frac{\Delta P_K}{P_K}\right\}.$$

Where i denotes the interest rate on the alternative asset and Pk the price of one unit of capital (that is, the nominal market price of one unit of capital goods), this cost is iPk; with δ denoting the rate of depreciation of capital, this cost (per unit time) is given by δPk: the capital loss (or gain) resulting from the fact that the price of capital may be falling (rising), implying that the firm would obtain less (more) if it waits to sell the capital; this is measured by $-\Delta Pk$ per unit time; the quantity $i - \Delta P_K / P_K$ can be viewed as a real interest rate measured in terms of the price of capital goods.

(i) Explain the three components of the flow price of capital services **[3 Marks]**

(ii) If capital goods are imported and subject to a tariff rate, l_M, and firms are subject to income taxation at the rate l_Π, write the new expression for the user cost of capital and interpret it. **[6 Marks]**

QUESTION 2

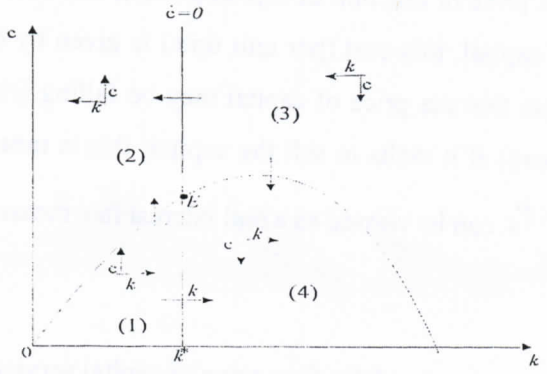
a) For an agent whose utility function has an expected utility representation $E[v(c_0; c_1)]$ show that the risk premium on any security is proportional to the covariance of its return with the marginal rate of substitution between consumption at date 0 and at date 1 **[7 Marks]**

b) Explain why the concept of risk sharing is important for an investor **[3Marks]**

c) Critically evaluate why a rational investor would opt to hold financial assets as opposed to other assets. **[5 Marks]**

QUESTION 3

Consider a Ramsey-Cass-Koopmans type growth model in which the equations of motion of consumption per unit of effective labour and capital stock per unit of effective labour are $\dot{c}(t) = \frac{r(t) - \rho - \theta g}{\theta} c(t)$ and $\dot{k}(t) = [f(k(t) - c(t)] - [(n+g)k(t)]$, respectively. The phase diagram associated with the model is drawn below. The $\dot{c} = 0$ line and the $\dot{k} = 0$ locus divide the figure into quadrants 1, 2, 3 and 4. Use your knowledge of the workings of the model to answer the following questions. [c represents consumption per unit of effective labour, n is population growth, r is rental price of capital, k is capital per unit of effective labour, g denotes growth of knowledge and ρ is discount rate]



a) Why is $\dot{c} > 0$ and $\dot{k} > 0$ in quadrant 1? **[2 Marks]**

b) Explain the dynamics in quadrant 2. **[3 Marks]**

c) Why is $\dot{c} < 0$ and $\dot{k} < 0$ in quadrant 3? **[3 Marks]**

d) At point E, what happens to consumption per worker and output per worker? **[2 Marks]**

e) Explain the effects of a decline the discount rate, ρ on the $\dot{c} = 0$ line and the $\dot{k} = 0$ curve. Explain the adjustment process. **[5 Marks]**

QUESTION 4

Given the following optimization problem from the Baseline Real business cycle model, where utility maximization is modelled as a function of consumption and leisure,

$$Max\ U = lnC + bln(1 - \varrho)$$

$$s.t.$$

$$C = w\varrho$$

a) Show that relative labour supply in the two periods responds to the relative wage. **[9 Marks]**

b) Interpret the solution to the optimization problem for the household presented above. **[6 Marks]**

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