MACHAKOS UNIVERSITY

University Examinations for 2019/2020 Academic Year

SCHOOL OF BUSINESS AND ECONOMICS

DEPARTMENT OF ECONOMICS

FOURTH YEAR SPECIAL/SUPPLEMENTARY EXAMINATION FOR

BACHELOR OF ECONOMICS AND STATISTICS

BACHELOR OF ECONOMICS

EET 401: MACROECONOMIC THEORY IV

DATE: 22/1/2021   **TIME: 2.00-4.00 PM**

INSTRUCTIONS:

   (i)   **Answer question one (Compulsory) and any other two questions**

   (ii)   **Do not write on the question paper**

   (iii)   **Show your workings clearly**

QUESTION ONE (COMPULSORY)

a)   Derive and explain the determinants of money supply   (10 marks)

b)   Given the following intertemporal optimizing model of consumption patterns:

$$\max_{c_t} \quad \sum_{0}^{T} \frac{In \ c_t}{(1+\delta)^t},$$

Subject to the constraint that

$$\sum_{0}^{T} \frac{c_t}{(1+r)^t} = \sum_{0}^{T} \frac{y_t}{(1+r)^t}.$$

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Show that whether consumption rises, falls or remains constant over time depends on whether the market rate of return is larger or smaller than the individual's discount rate

(10 marks)

c) Illustrate the effect of deficit financing on the IS and LM curves (6 marks)

d) Explain four methods that the government can use to finance a deficit (4 marks)

QUESTION TWO (20 MARKS)

Given that a firm faces a production function of the form $y_t = y_t(N_t, K_t)$. If the firm maximizes the present value of future flows of profit streams subject to a technological constraint given by the capital evolution equation as $K_{t+1} = K_t + i_t - \delta K_t$.

Where y – Output

N – Labor units

K – Capital stock

i – Investment

δ – Depreciation rate.

Required

a) Derive the expression for the flexible accelerator model of investment demand. (7 marks)

b) Given a Cobb Douglas production function of the form $y = AK^\alpha L^{1-\alpha}$. Show the corresponding investment demand function. (8 marks)

c) Derive and explain the Tobin's Marginal q theory of investment. (5 marks)

QUESTION THREE

a) Compare and contrast the Present Value (PV) and the Marginal Efficiency of Investment (MEI) as investment criteria. (6 marks)

b) Explain using the neoclassical growth Model how the following changes affect variables in the steady-state:

i. An increase in the savings rate

ii. An increase in Population growth (8 Marks)

iii) Explain using a graph how an increase in aggregate demand affects the labour market in the short-run (6 marks)

QUESTION FOUR

a)   Briefly explain the four stylized facts about growth. (10 marks)

b)   Explain the effects of price stickiness and wage rigidities on the aggregate supply function. Use well labelled diagrams where applicable. (10 marks)

QUESTION FIVE

a)   In reference to transactions demand for money theory where consumers are also investors, and with draw cash only for spending and part of their income not withdrawn remains with the bankers or brokers in form of bonds. Assume a representative consumer with **y** as real income which he intends to spend within period **T**. Let the number of transactions (bank withdrawals or with the broker) be **n**, the cost of each transaction is **α** and the interest rate on the bonds is **r**.

i.   Show that the optimal number of transaction can be given as; $n = \left(\dfrac{rTy}{2a}\right)^{1/2}$ (7 marks)

ii.   Intuitively explain the relationship between **n** and **r**, **T**, **y** and **α**. (4 marks)

b)   Explain Harrod Domar's theory of economic growth (9 marks)