



MACHAKOS UNIVERSITY

University Examinations for 2018/2019 Academic Year

SCHOOL OF BUSINESS AND ECONOMICS

DEPARTMENT OF ECONOMICS

FOURTH YEAR SUPPLEMENTARY EXAMINATION FOR

BACHELOR OF ECONOMICS AND STATISTICS

BACHELOR OF ECONOMICS AND FINANCE

BACHELOR OF ECONOMICS

BACHELOR OF ARTS

EET 401: MACROECONOMIC THEORY IV

DATE: 24/7/2019

TIME: 11:00 – 1:00 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) (30 MARKS)

- 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for money theory where consumers are also investors, and with draw cash only for spending and part of their income not withdrawn remains with the bankers or brokers in form of bonds.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 a and the interest rate on the bonds is r .

- i) Show that the optimal number of transaction can be given as; $n = \left(\frac{rTy}{2a} \right)^{1/2}$
(6 marks)
- ii) Intuitively explain the relationship between n and r , T , y and a .
(4 marks)

- b) Explain the relative income hypothesis (7 marks)
- c) Explain the present value criterion for investment (4 marks)
- d) Derive and explain the Harrod-Domar condition for equilibrium growth. Remember to state all the underlying assumptions. (9 marks)

QUESTION TWO (20 MARKS)

- a) Given the following intertemporal optimizing model of consumption patterns:

$$\max_{c_t} \sum_0^T \frac{\ln c_t}{(1 + \delta)^t},$$

Subject to the constraint that

$$\sum_0^T \frac{c_t}{(1 + r)^t} = \sum_0^T \frac{y_t}{(1 + r)^t}.$$

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)

- b) Discuss Friedman's theory of money demand (5 marks)
- c) Derive the money multiplier and explain how it affects money supply (5 marks)

QUESTION THREE (20 MARKS)

- a) 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

- i) Derive the expression for the flexible accelerator model of investment demand. (15 marks)
- ii) Given a Cobb Douglas production function of the form $y = AK^\alpha L^{1-\alpha}$. Show the corresponding investment demand function. (8 marks)
- iii) Derive and explain the Tobin's Marginal q theory of investment. (7 marks)

QUESTION FOUR (20 MARKS)

- a) Explain using the neoclassical growth Model how the following changes affect variables in the steady-state:
- i) A decrease in the savings rate
 - ii) A decrease in Population growth (10 marks)
- b) Demonstrate using the four quadrants diagram the effect of a change in income and interest rates on investments when:
- i) Investment is a function of income and interest rates
 - ii) Investment is a function of interest rates only (10 marks)

QUESTION FIVE (20 MARKS)

- a) Illustrate the effects of Fiscal Policy Changes in the extended model (10 marks)
- b) Given the following production function

$$Y = Af(K, L)$$

Where: A is the level of technology; K represents units of capital; L represents units of labour.

Let $(1-\theta)$ and θ be weights equal to labour's share of income and capital's share of income, respectively.

- i) State the growth accounting equation (3 marks)
- ii) Translate the growth accounting equation into per capita terms (4 marks)
- iii) Obtain the Solow residual and state the three key determinants of output growth according to Solow. (3 marks)