University of Victoria
Final Examination, 11th December, 2003
Intermediate Macroeconomics
ECON 204 F01

To Be Answered In Booklets

Instructor: Alok Kumar **Duration: 3 HOURS**

Students must count the number of pages in this examination paper before beginning to write, and report any discrepancy immediately to the invigilator.

This question paper has **six** pages (excluding the cover page).

Special Instructions:

(a) Question paper has two sections. The first section consists of **ten** multiple-choice questions. Answer all of them. The second section has **four** essay type questions. Answer any **three** of them.

(b) Only non-programmable calculator is allowed.

(c) Read questions carefully before answering.

(d) Don't forget to write your name, student number, and course number in the answer booklets.

Best of Luck!

Section 1

Multiple-Choice Type Questions **Total Marks 10**

Please answer **all** questions from the following section. All questions carry equal marks.

(1) In a steady state economy,

[Marks 1]

(a) both consumption per worker and the capital-labor ratio are constant.
(b) consumption per worker is constant, but the capital-labor ratio can change.
(c) capital and labor, by definition, are inversely related to each other.
(d) consumption per worker can change, but the capital-labor ratio is constant.

(2) In the long run, an increase in the saving rate in a steady-state will cause

[Marks 1]

(a) an increase in the capital-labor ratio and an increase in consumption per worker.
(b) an increase in the capital-labor ratio and a decrease in consumption per worker.
(c) a decrease in the capital-labor ratio and a decrease in consumption per worker.
(d) a decrease in the capital-labor ratio and an increase in consumption per worker.

(3) If real money demand doubles while the nominal money supply is unchanged, what happens to the price level?

[Marks 1]

(a) The price level increases by a factor of four.
(b) The price level doubles.
(c) The price level is unchanged.
(d) The price level falls by one-half.

(4) Let e_{nom}= Nominal Exchange Rate, e= Real Exchange Rate, P_{For}= Foreign Price Level, and P= Domestic Price Level. Purchasing power parity means that

[Marks 1]

(a) $e_{nom} = \frac{P_{For}}{P}$.
(b) $P = P_{For}$.
(c) $P = \frac{e_{nom}}{P_{For}}$.
(d) e_{nom} = marginal cost.

(5) Under a flexible-exchange rate system, an increase in the demand for Japanese yen would cause the Japanese Yen / Canadian dollar exchange rate to

[Marks 1]

(a) fall.
(b) rise.
(c) remain unchanged because supply also increases.
(d) remain unchanged because the exchange rate is set by the Central Bank.

(6) Which of the following statements is true?

[Marks 1]

(a) The open-economy is derived in the same way as the closed-economy IS curve.
(b) The closed-economy IS curve is downward sloping, but the open-economy IS curve is upward sloping.
(c) Some factors that shift the IS curve in the closed economy in one direction will shift the IS curve in the open economy in the opposite direction.
(d) Factors that raise a country's net exports, given domestic output and the domestic real interest rate, shift the open-economy IS curve up.

(7) When, because of hiring and firing costs, firms retain workers in a recession that they would otherwise lay off, there is said to be

[Marks 1]

(a) labor hoarding.
(b) a decline in capacity utilization.
(c) voluntary unemployment.
(d) involuntary unemployment.

(8) Classical economists would explain the fact that money is a leading, procyclical macroeconomic variable by pointing out that

[Marks 1]

(a) money is not neutral, and changes in the nominal money supply affect real variables.
(b) increasing the money supply shifts the LM curve, reducing real interest rates and causing an economic expansion.
(c) increasing the money supply increases aggregate demand, causing higher levels of employment and output.
(d) when money demand rises because of a beneficial productivity shock, the Central Bank increases the money supply to prevent the price level from falling.

(9) The gift exchange motive suggests that

[Marks 1]

(a) workers value benefits like health insurance more that job security.
(b) workers prefer a nice work environment, even if they must accept lower wages.
(c) workers who feel well treated will work harder and more efficiently.
(d) workers will shirk if they are paid a low wage.

(10) According to the efficiency wage model, firms will pay the real wage that [Marks 1]

(a) maximizes workers' marginal productivity.

(b) maximizes the marginal productivity of capital and the marginal productivity labor together.

(c) maximizes effort per dollar of real wage.

(d) minimizes hiring and training costs to the firm.

Section 2

Essay Questions **Total Marks 90**

Please answer any **three** questions from the following section. All questions carry equal marks.

(1) A country has the per-worker production function $y_t = 3k_t^{2/3}$, where y_t is output per worker and k_t is the capital-labor ratio. The depreciation rate d is 0.1 and population growth rate n is 0.05. The saving function is $S_t = 0.2Y_t$, where S_t is total national saving and Y_t is total output.

[Marks 30]

(a) What are the steady-state values of capital-labor ratio, output per worker, and consumption per worker?

[Marks 10]

(b) Suppose that population growth rate, n, rises to 0.08. What are new steady-state values of capital-labor ratio, output per worker, and consumption per worker?

[Marks 10]

(c) Suppose that the saving function changes to $S_t = 0.3Y_t$ (the value of other parameters remain as in part a of the question). What are new steady-state values of capital-labor ratio, output per worker, and consumption per worker?

[Marks 10]

(2) An economy is described by the following equations:

$$C^d = 500 + 0.5(Y - T) - 100r$$

$$I^d = 350 - 100r$$

$$L = 0.5Y - 200i$$

where C^d= Desired Consumption, I^d= Desired Investment, Y = Output, T = Tax, G = Government Expenditure, L = Demand for Real Money Balance, r= Real Rate of Interest, and i = Nominal Rate of Interest. Let the expected inflation $\pi^e = 0.05$, potential output $\overline{Y} = 1850$, and nominal money supply $M = 3560$. Government expenditure and taxes are equal where $T = G = 200$.

[Marks 30]

(a) What are the general equilibrium values of the real interest rate, the price level, consumption, and investment?

[Marks 10]

(b) Suppose an economic shock increases desired investment by 10, so it is now $I^d = 360 - 100r$. How does this affect the general equilibrium values of the real interest rate, the price level, consumption, and investment?

[Marks 10]

(c) Returning to the situation in part (a), suppose an economic shock increases desired consumption by 10, so it is now $C^d = 510 + 0.5(Y - T) - 100r$. How does this affect the general equilibrium values of the real interest rate, the price level, consumption, and investment?

[Marks 10]

(3) Suppose a classical economy is characterized by the following equations:

$$\text{IS curve} : r = 10.10 - 0.002Y$$

$$\text{LM curve} : \frac{M}{P} = Y - 250(r + \pi^e)$$

$$\text{SRAS curve} : Y = \overline{Y} + 50(P - P^e)$$

P and P^e are actual and expected price levels respectively. Other variables have interpretation similar to those in **Question 2** above. The nominal money supply is $M = 9,900$, expected inflation $\pi^e = 0.10$ and potential output is $\overline{Y} = 5000$.

[Marks 30]

(a) What are the general values of the price level, output, and the real interest rate?

Hint: Use IS and LM curves to derive AD curve (eliminate r and get a relationship between Y and P).

[Marks 10]

(b) If the expected price level is the price level you found in part (a), what happens to the price level, output, and the real interest rate in the short run and in the long run, if there is an unanticipated decrease in the nominal money supply to 7368.75?

[Marks 20]

Hint: Equality between AD and SRAS will give you a quadratic equation in price level P *e.g.* $a_2P^2 + a_1P - a_0 = 0$, where $a_0,\ a_1,\ a_2$ are coefficients. The positive solution of this quadratic equation is given by $P = \frac{-a_1+\sqrt{a_1^2+4a_2*a_0}}{2a_2}$.

(4) The following equations describe a Keynesian model of the economy:

$$C^d = 250 + 0.5(Y - T) - 250r$$

$$I^d = 250 - 250r$$

$$L = 0.5Y - 500r$$

$$G = 300,\ T = 300,\ M = 3000,\ \overline{Y} = 1250$$

where variables have interpretations similar to **Question 2** above .

[Marks 30]

(a) Calculate the general equilibrium values of the real interest rate, the price level, consumption, and investment.

[Marks 10]

(b) Now suppose that nominal money supply increase to 3500, what are the short run levels of real interest rate, output, consumption, and investment?

[Marks 10]

(c) Returning to the situation in part (a), suppose that the government expenditure increases to 350 with no changes in taxes (T fixed). What are the short run levels of real interest rate, output, consumption, and investment?

[Marks 10]

END