Strathmore
U N I V E R S I T Y

Strathmore Institute of Mathematical Sciences
BBS FE/FIN
SPECIAL EXAMINATION
BSE 2208: MACROECONOMICS II

DATE: MARCH 2019 — Time: 2Hrs

Instructions

- **This examination consists of FIVE questions.**

- **Answer Question ONE (COMPULSORY) and any other TWO questions.**

1. (a) Consider a macroeconomy that produces three goods.

	Quantity		Price	
Product	2015	2016	2015	2016
A	5	6	$20	$25
B	5	7	$10	$15
C	5	4	$5	$10

   (i) Calculate the inflation rate (π) in 2016 using the GDP deflator. (**4 Marks**)

   (ii) What is the GDP deflator in 2015 and 2016? What is the corresponding inflation rate? (**5 Marks**)

   (b) Determine whether each of the following statements is true or false, and explain why. For each statement, discuss the impact of monetary and fiscal policy in that special case.

   (i) If investment does not depend on the interest rate, the LM curve is horizontal (**4 Marks**.

   (ii) If money demand does not depend on income, the LM curve is horizontal (**4 Marks**.

   (c) Recall the quantity theory of money. Suppose the Central Bank reduces the money supply and assume the velocity of money is constant. What happens to the AD curve? What is the intuition? (**4 Marks**)

   (d) Considering the Mundell-Fleming model, explain the concept of the Trilemma (**5 Marks**)

Goods market	Money market
$C = 100 + 0.9(Y - T)$	M=4000
$I = 50 - 7.5r$	P=10
$NX = -50$	$L(Y, r) = Y - 350r$
$G = 200; T = 100$	

2. (a) Consider the above short-run, open-economy model of the economy.

   (i) Sketch the IS and LM equations and then find the equilibrium values of r and Y **(10 Marks)**

   (ii) What is the value of the Keynesian cross tax multiplier? Policy makers wish to shift the IS curve to the left by 450. How much do they need to raise taxes to do so? What are the resulting equilibrium values of r and Y? **(6 Marks)**

   (iii) At equilibrium in part(i), what is the value of national saving, investment, and net capital outflows? Assume a shock occurs that makes exports more appealing. At current interest rates, does the local currency need to depreciate or appreciate to bring the foreign exchange market back into equilibrium (i.e $NX = S - I$)? **(4 Marks)**

3. (a) In the AD-SRAS-LRAS model of the economy, Assume SRAS curve is upward sloping. Parliament has debated raising the minimum wage to over Kes.15,000. Doing so would permanently increase the production costs to business, especially those relying on lower-skilled workers. Use the AD-AS model to discuss the Macro impacts on the price level, real GDP and unemployment. **(10 Marks)**

   (b) The price level in the domestic and foreign countries is initially equal to $P = P^* = 100$. The foreign country is experiencing rapid growth in real GDP of 8% and targets a 2% inflation rate. The domestic country is experiencing no growth in real GDP or price level. What does the Central Bank in the foreign country need to do to hit the inflation target and what will be the resulting nominal exchange rate? Defend your answer. **(10 Marks)**

4. (a) Consider two countries : Frugalia and Prodigalia (we will call them F and P). In both countries the production function is Cobb-Douglas: $Y = AK^{\frac{1}{3}}N^{\frac{2}{3}}$. Where A denotes the total factor productivity, K is physical capital, and N is labor. The population growth rate is 0.1, physical capital depreciates at the rate of 0.1 and $A = 1$. In F the savings rate is $s_F = 0.2$ and in P it is $S_P = 0.4$

   (i) Write the production function in terms of output per capita (Y/N) **(2 Marks)**

   (ii) Find the steady state values of the capital-labor ratio (K/N) in both countries **(4 Marks)**

   (iii) Find the steady state values of the output per capita (Y/N) in both countries **(2 Marks)**

   (iv) In which of the countries is consumption per capita higher in steady state? **(3 Marks)**

(v) In which of the countries is the marginal product of labor higher in the steady state? **(3 Marks)**

(b) Consider a Cobb-Douglas production function with three inputs, K is capital (the number of machines), L is labor (the number of workers), and H is human capital (the number of degrees among the workers). The production function is

$$Y = K^{1/3}L^{1/3}H^{1/3}$$

(i) Derive an expression for the marginal product of labor. How does an increase in the amount of human capital affect the marginal product of labor? **(2 Marks)**

(ii) An unskilled worker earns the marginal product of labor, whereas a skilled worker earns the marginal product of labor plus the marginal product of human capital. Using the given production function, find the ratio of the skilled wage to the unskilled wage. **(4 Marks)**

5. (a) Briefly explain the Ricardian view of government debt **(5 Marks)**

(b) Explain FIVE social costs of a steady and predictable rise in general price level **(15 Marks)**