FACULTY/COLLEGE	College of Business and Economics
SCHOOL	School of Economics
CAMPUS(ES)	APK
MODULE NAME	Applied Macroeconomic Issues
MODULE CODE	MND9X02
SEMESTER	Second
ASSESSMENT OPPORTUNITY, MONTH AND YEAR	Final Summative Assessment Opportunity November 2019

ASSESSMENT DATE	15 November 2019	**SESSION**	08:30 – 11:30
ASSESSOR(S)	Prof Kevin Nell		
MODERATOR(S)	Prof Yoseph Getachew (external); Dr Magda Wilson (internal)		
DURATION	3 hours (180 min)	**TOTAL MARKS**	100

NUMBER OF PAGES OF QUESTION PAPER (Including cover page)	4

INFORMATION/INSTRUCTIONS:

- This is a closed-book assessment.
- There are 5 questions. Answer ALL the questions.

SURNAME	
INITIALS	
STUDENT NUMBER	
CELL NUMBER	

Mark schedule

	Mark		Mark		Mark		Mark		Mark
Q1		**Q2**		**Q3**		**Q4**		**Q5**	
(a)(15)		**(a)(15)**		**(a)(4)**		**(a)(10)**		**(a)(4)**	
(b)(12)		**(b)(12)**		**(b)(10)**		**(b)(8)**		**(b)(10)**	

Total mark :

QUESTION 1 (Solow Model & Education; AK Model & Capital Accumulation)

(a) Cross-country growth regressions in the literature generally find a positive relationship between per capita income growth and average years of education. Consider a hypothetical developing economy that is in an initial steady-state position. Use the Solow (1956) diagram of transition dynamics to illustrate and explain what happens when there is a permanent increase in average years of education at time $t = 0$. In addition, sketch a graph of how the natural logarithm (ln) of output per worker evolves over time with and without the increase in average years of education. Does the increase in average years of education permanently affect the growth rate or level of output per worker? [**Hint:** the relevant equation for the transition dynamics diagram is $\dot{k}/k = s(y/k) - (n + g + \delta)$]. **(15 points)**

(b) Consistent with the AK model, policy-makers, in general, view physical investment as a key determinant of growth and industrial development. Yet, the empirical literature is ambiguous on the effect of investment on growth. Critically evaluate the importance of investment (capital accumulation) with specific reference to Jones's critique of the AK model (1995); Easterly and Levine (2001); Bosworth and Collins (2003); and Bond et al.'s test of the AK model (2010). **(12 points)**

QUESTION 2 (Structural Change and the Exchange rate)

Consider the following three articles:

- Rodrik, D. (2013). Unconditional Convergence in Manufacturing, *Quarterly Journal of Economics*, 128(1), 165-204.
- McMillan, M., D. Rodrik and I. Verduzco-Gallo (2014). Globalization, Structural Change, and Productivity Growth, with an Update on Africa, *World Development*, 63(C), 11-32.
- Rodrik, D. (2008). The Real Exchange Rate and Economic Growth, *Brookings Papers on Economic Activity*, 39(2), 365-439.

Answer the following questions:

(a) With specific reference to Rodrik (2013) and McMillan et al. (2014), provide a detailed explanation why the manufacturing sector is important for economy-wide growth and development. **(15 points)**

(b) With specific reference to Rodrik (2008) and McMillan et al. (2014), provide a detailed explanation why an undervalued real exchange rate may lead to growth-promoting structural change in developing countries. What policy measures can be implemented to keep the real exchange rate undervalued? **(12 points)**

QUESTION 3 (Financial Liberalisation & Growth)

According to the McKinnon-Shaw hypothesis, financial repression, in the form of interest rate ceilings, lowers the quantity and quality of investment.

(a) Briefly explain, in accordance with McKinnon-Shaw hypothesis, how financial liberalisation can boost the quantity and quality of investment. **(4 points)**

(b) Discuss some of the main criticisms that have been levelled against the financial liberalisation hypothesis. **(10 points)**

QUESTION 4 (Agriculture, Industry & Inflation)

(a) Use a graph to illustrate and explain how agriculture can impose a demand constraint and supply constraint on industrial growth. **(10 points)**

(b) Use the structuralist theory of inflation to explain how an underdeveloped agricultural sector can lead to rapid inflation. What policy measures can be implemented to relax the supply constraint on industrial growth in 4(a) and, at the same time, to reduce high inflation associated with an underdeveloped agricultural sector? **(8 points)**

QUESTION 5 (The Balance-of-Payments-Constrained Growth Model)

Consider the balance-of-payments growth model with zero capital flows (*t* is a time subscript):

$$y_{Bt} = \frac{(1+\eta+\psi)(p_{dt} - p_{ft} - e_t) + \varepsilon(z_t)}{\pi}, \quad (1)$$

where y_{Bt} is the balance-of-payments constrained growth rate; η (< 0) is the price elasticity of the demand for exports; ψ (< 0) is the price elasticity of the demand for imports; ($p_{dt} - p_{ft} - e_t$) is the real terms of trade; ε is the income elasticity of the demand for exports; z_t is world income growth; and π is the income elasticity of demand for imports.

(a) With reference to equation (1), distinguish between the growth effect of the pure terms of trade effect and the volume effect. **(4 points)**

(b) Assuming zero relative price effects ($p_{dt} - p_{ft} - e_t = 0$), equation (1) can be written as:

$$y_{Bt} = \frac{x_t}{\pi}, \quad (2)$$

where the growth of exports, x_t, is equal to $\varepsilon(z_t)$.

- Draw on Hussain's (1999) study {*The Balance-of-Payments Constraint and Growth Rate Differences among African and East Asian Economies*} to critically evaluate the empirical relevance of equation (2) in developing countries. What is the main policy implication for African countries? **(10 points)**