On admission to the examination room, you should acquaint yourself with the instructions below. You must listen carefully to all instructions given by the invigilators. You may read the question paper, but must not write anything until the invigilator informs you that you may start the examination.

You will be given five minutes at the end of the examination to complete the front of any answer books used.

May/June 2014 **EC202 2013/4 A 001**

A4 Graph Paper
Treasury tag
Approved calculators permitted
Dictionaries are not permitted

THE UNIVERSITY OF READING

INTERMEDIATE MACROECONOMICS (EC202)

Three hours

Read the following instructions carefully:

This paper is divided into **THREE SECTIONS**.

Section A: Answer **15** out of 20 questions (worth a total of 30 marks)
Section B: Answer **ALL** questions (worth a total of 30 marks);
write your answers to the multiple choice questions in your answer book.
Section C: Answer **4** out of 5 questions (worth a total of 100 marks)

SECTION A – 30 marks
Analyse 15 out of 20 statements

1. Analyse 15 of the following 20 statements. Indicate whether the statements are True, False or Uncertain. You must provide a brief justification for each of your answers. Zero credit will be given for the absence of justification.

(a) In the Keynesian Cross model, an increase in the (lump-sum) tax leads to an increase in output, all else equal.

(b) The central bank can increase the supply of money by selling bonds in the bonds market.

(c) For a county in recession with trade deficits, if the government wants to eliminate the trade deficits and increase the output to the natural level, then it must reduce government spending while depreciating its currency.

(d) If prices are fixed, then the nominal interest rate is equal to the real interest rate.

(e) Bond prices and interest rates always move in the same direction.

(f) If employment rises by 5%, then unemployment must fall by 5%.

(g) It may be in the best interest of employers to pay wages higher than their workers' reservation wage.

(h) To maintain a constant unemployment rate, output growth must be equal to the labour force growth.

(i) The LM curve is upward sloping because a higher level of the money supply is needed to increase output.

(j) The national income identity implies that budget deficits cause trade deficits.

(k) When the unemployment rate is high, the participation rate is also likely to be high.

(l) Conditional on the natural level of output, the interest rate is determined by fiscal policy in the medium run.

(m) In the IS-LM model for a closed economy, an increase in government spending reduces investment.

(n) The rate of inflation is equal to the rate of nominal money growth in the medium run.

(o) According to the Phillips curve relation, the sacrifice ratio is independent of the speed of disinflation.

(p) An increase in the price of oil decreases the natural rate of unemployment.

(q) Under a fixed exchange rate regime, if short-run output is higher than the natural level of output, and if there are no policy changes, then the currency will experience a real depreciation over time.

(r) Fiscal policy has a smaller effect on output in a small open economy than in a large open economy, all else equal.

(s) If 1 Euro could buy 1.4 pounds a year ago but 1 pound can now buy 0.8 Euro, the pound has depreciated against the Euro.

(t) According to the uncovered interest parity condition, if the domestic interest rate exceeds the foreign interest rate, this implies that financial markets expect depreciation in the future.

SECTION C – 100 marks
Answer 4 out of 5 questions; each question is worth 25 marks

You must show your work on all questions to get credit for your answers.

17. Suppose the UK economy is described by the following equations:

$$u_t - u_{t-1} = -0.5\left(g_{yt} - 5\%\right)$$

$$\pi_t - \pi_{t-1} = -(u_t - 6\%)$$

$$g_{yt} = g_{mt} - \pi_t$$

(a) What is the natural rate of unemployment for the UK economy?

(b) Laurence Ball documents that faster disinflations are associated with smaller sacrifice ratios for OECD countries. Explain briefly why. What is the value of the sacrifice ratio in the above model?

(c) Suppose that the unemployment rate is equal to the natural rate and that inflation is 8%. What is the growth rate of output? What is the growth rate of the money supply?

(d) What growth rate of output leads to an increase in the unemployment rate at 1% per year? How can the unemployment rate increase even though the growth rate of output is positive?

(e) Suppose output growth is constant for the next four years. What growth rate would reduce the unemployment rate by 2% over the next four years?

(f) How would you expect Okun's law to change if the rate of growth of the labour force was higher by 1 percentage point? Explain briefly.

18. Consider a closed economy with consumption given by $C=c_0+c_1(Y-T)$, exogenous G and T.

    Assume first constant investment (i.e. $I = \bar{I}$).

    (a) Solve for equilibrium output for the goods market. What is the value of the multiplier?

    Now let investment depend on both sales on the interest rate: $I = d_1Y - d_2i$

    (b) Solve for equilibrium output for the goods market. At a given interest rate, is the effect of a change in autonomous spending bigger or smaller than what it was in part (a)? Explain briefly.

    Now consider the financial markets via the LM relation:
    $$\frac{M}{P}=f_1Y-f_2i$$

    (c) Solve for equilibrium output considering both goods and financial markets.

    (d) What is the fiscal multiplier? Is this multiplier bigger or smaller than the multiplier you derived in part (b)? Explain briefly.

19. Suppose a closed economy begins with output equal to its natural level and there is a reduction in the money supply.

   (a) Using the AS-AD model developed in Blanchard et al.'s (2013) textbook, illustrate the effects of a contractionary monetary policy on the position of the AD, AS, IS, and LM curves in the short run and in the medium run. Briefly explain the mechanism behind your illustration.

   (b) What happens to output, the interest rate and the price level in the short run and in the medium run?

   (c) What happens to consumption and investment in the short run and in the medium run? Explain briefly.

   (d) Explain the neutrality of money considering your answers above.

20. Consider a closed economy characterized by the following behavioural equations and variables:

Goods market	Money market
$C = 400 + 0.25Y_D$	$M_D = 2Y - 10{,}000i$
$T = 400$	$M_S = 2{,}000$
$I = 300 + 0.25Y - 1{,}500i$	$P = 1$
$G = 400$	

(a) Derive the IS and LM relation.

(b) Solve for the equilibrium level of output and interest rate.

(c) Solve for the equilibrium values of C, I and G.

(d) Now suppose that the real money supply increases to 3,000. What are the new equilibrium values for output and interest rates? Describe in words the impact of this expansionary monetary policy.

(e) What are the new equilibrium values for C, I, G and T? If they have changed from their original values, explain, in words, why they have changed.

21. Consider a country operating under fixed exchange rates, with aggregate demand and aggregate supply given by equations:

$$AD: Y = Y\left(\frac{\bar{E}P}{P^*}, G, T\right)$$

$$AS: P = P^e(1+\mu)F\left(1-\frac{Y}{L}, z\right)$$

Assume that the economy is initially in medium-run equilibrium. Foreign output, the foreign price level, the foreign interest rate and the expected domestic inflation are fixed. Suppose there is a fall in government spending.

(a) Show the effects of a fall in government spending on the AD-AS diagram in the short run and the medium run. Explain briefly the mechanism behind your illustration.

(b) What happens to output and the price level in the short run and in the medium run?

(c) What happens to the real exchange rate and net exports in the medium run? Explain briefly.

(d) What is the domestic nominal interest rate and why? What happens to the real interest rate in the medium run? Explain briefly.

(e) What happens to consumption and investment in the medium run? Explain briefly.

(End of Question Paper)