BINDURA UNIVERSITY OF SCIENCE EDUCATION

FACULTY OF COMMERCE

DEPARTMENT: ECONOMICS

PROGRAMME: MSC FINANCIAL ECONOMICS

COURSE CODE MEC522(2) Advanced Monetary Economics

DURATION: 3 HOURS TOTAL MARKS: 100

INSTRUCTIONS TO CANDIDATES

1. This paper carries six questions
2. Answer any four (4) questions.
3. All questions carry 25 marks.
4. Cellphones are not allowed in the examination room.

QUESTION 1

Discuss the evolution of the concept of money from its earliest forms to the modern digital era. In your answer, focus on the different functions of money and how these functions have been influenced by technological and economic changes.

(25 marks)

QUESTION 2

Let the consumer's utility function be $U(c, l) = \alpha ln C_{1t} + (1-\alpha) ln C_{2t} - \gamma h_t$ where h denotes hours worked, C_1 is a good which can only be purchased with cash and C_2denotes a good which can be purchased using credit. Households can hold two assets: money (m) or government bonds (b), the latter earn the return R. The household seeks to maximise utility subject to two constraints:

(i) a cash in advance constraint

$$p_t C_{1t} \leq m_t + (1 + R_{t+1}) b_t - b_{t+1}$$

(ii) a resource constraint

$$C_{1t} + C_{2t} + \frac{m_{t+1}}{p_t} + \frac{b_{t+1}}{p_t} \leq w_t h_t + \frac{m_t}{p_t} + \frac{(1 + R_{t+1}) b_t}{p_t}$$

(a) Write down an expression for the share of cash goods in total consumption as a function of the interest rate [15 marks]

(b) Write down an expression for the velocity of money. Is this a plausible model? [10 Marks]

QUESTION 3

(a) Explain the concept of the non-neutrality of money in the short run and long run. **(10 marks)**

(b) Provide examples to illustrate how changes in the money supply can affect real economic variables, such as output and employment, in different time horizons. **(15 marks)**

QUESTION 4

Suppose consumers maximises the present value of utility choosing

$$\{C_t, N_t^s X_t, m_t, b_t\}_{t=o}^{\infty}$$

They choose consumption and labor, and they are also going to choose their assets like real bonds, nominal bonds and money, subject to a series of budget and Cash in Advance constraints taking as given prices and transfers

$$\max_{\{C_t, N_t^s, X_t, m_t, b_t\}_{t=0}^{\infty}} \sum_{t=0}^{\infty} B^t [U(C_t) - V(N_t)]$$

$$p_t C_t + (1+\alpha) q_t b_{t+1} + p_t s_t X_{t+1} + p_t T_t + (1+\alpha) m_{t+1} = m_t + b_t + p_t X_t + p_t w_t N_t + p_t \pi_t$$

$$p_t C_t + (1+\alpha) q_t b_{t+1} + p_t s_t X_{t+1} + p_t T_t = m_t + b_t + p_t X_t$$

(a) Write down the consumers' Lagrangian problem [5 marks]

(b) Solve for the first order conditions [12 marks]

(c) Express the first order conditions as Marginal Benefit (MB) = Marginal Cost (MC) [8 marks]

QUESTION 5

Explain the Cash in Advance (CIA) Model, its basic assumptions, and its implications for monetary policy. **(10 marks)**

Compare and contrast the CIA model with the Real Business Cycle model in terms of their treatment of money and monetary shocks. **(15 marks)**

QUESTION 6

(a) Discuss the role of central banks in shaping monetary policy [7 marks].

(b) Differentiate between expansionary and contractionary monetary policies, providing an example of a situation in which each might be used. [8 marks]

(c) How do central banks use interest rates to control inflation and stimulate economic growth? [10 marks]

END OF PAPER