This exam comprises of 14 questions. You are required to answer any 12 of these questions in the 150-minute exam time. All the questions are worth 5 marks each for a total of 60 marks.

1)- Suppose that a mortgage of $200,000 is to be repaid over 25 years at an annual interest rate of 5%. What are the annual payments? What would be the monthly payments?

2)- Explain the difference between “holding period yield” and “yield to maturity’. Give an expression that relates the two concepts.

3)- Consider a situation in which you can invest in two different assets. Asset ‘A’ has a return of 6% half the time and 4% the other half of the time. Asset ‘B’ has a return of 0% half the time and 10% the other half of the time. Calculate the expected return and risk associated with each asset. Which asset would you choose?

4)- If the interest rate is 10%, what is the present value of a security that pays you $1100 next year, $1210 the year after, and $1331 the year after that? If the security sold for $2500, is the yield to maturity greater or less than 10%? Why?

5)- What is a yield curve? Assuming that investors are primarily influenced by the real interest rates \((r = i - \pi^e)\), explain how does the ‘Expectations Theory’ of the term structure of interest rates help predict changes in expected future inflation and real economic activity.

6)- What do you understand by the term ‘moral hazard’ in the context of financial transactions? Discuss some of the tools to get around this problem.

7)- Discuss the relationship between the ‘overnight’ interest rate and the ‘bank rate’. Suppose that the ‘overnight’ funds are trading at a rate below the target rate. How would the central bank use its instruments, Open market operation (SRAs --- Sale and Repurchase Agreements) and Government deposit shifting, to influence ‘the overnight’ rate?
8) “Interest rates can be measured more accurately and more quickly than the money supply. Hence an interest rate is preferred over the money supply as an intermediate target.” Do you agree or disagree? Briefly discuss the main factors involved in determining the appropriate variable to target.

9) “It is not the Bank of Canada that abandoned money, it is the money that abandoned Bank of Canada”. Evaluate this statement in a historical context and explain why the Bank of Canada moved from targeting monetary aggregate to targeting inflation.

10) It is argued that an inflation targeting regime can be captured by a simple monetary policy rule (Taylor rule) of the following form:

\[ i_{OR} = \tilde{i}_{OR} + 1.5(\pi - \pi^*) + 0.5(y - \bar{y}) \]

where \( i_{OR} \) is the overnight interest rate controlled by the central bank, \( \pi \) is the inflation rate and \( y \) is the aggregate output. \( \tilde{i}_{OR}, \pi^* \) and \( \bar{y} \) represent the target value of these variables.

Explain, (i) the presence of the output-gap term in the Taylor rule, and (ii) why the coefficient in front of the inflation-gap term has to be greater than one.

11) Suppose that the slope expression for the LM relationship is given as:

\[ \frac{dr}{dY} = \frac{g}{h} \]

where ‘\( g \)’ represent the sensitivity of money demand to changes in the aggregate output and ‘\( h \)’ represent the sensitivity of money demand to changes in the interest rate. Discuss in words the role of each parameter in affecting the slope expression.

12) If investment does not depend on the interest rate, the IS curve is vertical. Is this statement true? Using the IS-LM model, discuss the impact of monetary policy with regard to the above statement.

13) Economists agree that money is neutral (that is, changes in monetary policy does not affect output) in the long run and non-neutral (that is, changes in monetary policy does affect output) in the short run. Clearly explain the intuition for this statement using an IS-LM diagram.

14) Briefly explain the ‘Balance Sheet Channel’ of monetary policy transmission mechanism. Is it equivalent to the ‘Bank Lending Channel’?