

May/June Examination Period 2025

ECN107 Foundations of Finance

Duration: 2 hours

**YOU ARE NOT PERMITTED TO READ THE CONTENTS OF THIS QUESTION PAPER UNTIL
INSTRUCTED TO DO SO BY AN INVIGILATOR**

Answer all EIGHT questions

Non-programmable calculators are permitted in this examination. Please state on your answer book the name and type of machine used.

Complete all rough workings in the answer book and cross through any work that is not to be assessed.

Possession of unauthorised material at any time when under examination conditions is an assessment offence and can lead to expulsion from QMUL. Check now to ensure you do not have any notes, mobile phones, smartwatches or unauthorised electronic devices on your person. If you do, raise your hand and give them to an invigilator immediately.

It is also an offence to have any writing of any kind on your person, including on your body. If you are found to have hidden unauthorised material elsewhere, including toilets and cloakrooms it will be treated as being found in your possession. Unauthorised material found on your mobile phone or other electronic device will be considered the same as being in possession of paper notes. A mobile phone that causes a disruption in the exam is also an assessment offence.

EXAM PAPERS MUST NOT BE REMOVED FROM THE EXAM ROOM

Examiners: Dr Manolis Noikokyris

Question 1

Explain the advantages and disadvantages for a corporation when raising capital through equity financing.

[10 marks]

Question 2

a) Explain the concepts of moral hazard and adverse selection in the context of financial markets. Provide one example for each to support your explanation.

[10 marks]

b) Explain why using a company's overall cost of capital to evaluate all of its projects could lead to incorrect investment decisions.

[5 marks]

Question 3

a) On the Security Market Line (SML), where would underpriced and overpriced securities be positioned? Explain your reasoning.

[5 marks]

b) Explain the difference between beta and variance as measures of risk.

[5 marks]

Question 4

a) Explain the relationship between the spot price and futures price of a commodity. In your answer, discuss the factors that influence this relationship, including the concepts of contango and backwardation.

[10 marks]

b) Explain why cyclical firms typically exhibit high asset betas.

[5 marks]

Question 5

a) You are taking a 5-year amortising loan of £5,000 with an annual interest rate of 8%. The loan must be repaid in equal annual installments over 5 years. What is the annual loan payment? Round your results to the nearest whole number; that is, if your answer is £967.246 you should write £967. Show your workings clearly and neatly.

[5 marks]

- b) The current spot price of Company A's common stock is £87. The stock has a prospective dividend yield of 2% per year, and the risk-free interest rate is 4% per year. Assuming that all dividends are paid at the end of the year, calculate the value of a one-year futures contract on this stock. Round your results to the nearest whole number (e.g., if your answer is £96.24, write £96). Show your workings clearly and neatly.

[5 marks]

Question 6

- a) A corporate bond has a face value of £1,000 and annual coupon rate of 2% paid semiannually. The bond matures in 7 years and has a yield to maturity of 3% per year. Calculate the price of the bond. Round your results to the nearest whole number; that is, if your answer is £967.246 you should write £967. Show your workings clearly and neatly.

[10 marks]

- b) A company has just paid a dividend of \$4 per share. The dividend is expected to grow at a constant rate of 5% per year indefinitely. If the required rate of return on the company's equity is 13%, what is the current stock price using the constant growth dividend discount model (Gordon Growth Model)? Show your workings clearly and neatly.

[5 marks]

Question 7

- a) Suppose you purchase a 3-year bond with an annual nominal return of 6%. What is your total real return over the 3-year period if inflation is 2% in the first year, 4% in the second year, and 3% in the third year? Round your answer to one decimal place, if necessary; that is, if the answer is 6.59 percent the right answer should be 6.6 percent. Show your workings clearly and neatly.

[5 marks]

- b) A stock has a beta of 1.2 and an expected return of 12%, while the risk-free asset offers an interest rate of 4%. A portfolio consisting of these two assets has an overall beta of 0.75. Calculate the portfolio weights for the stock and the risk-free asset. Round your answer to one decimal place, if necessary; that is, if the answer is 22.72 percent the right answer will be 22.7 percent. Show your workings clearly and neatly.

[10 marks]

Question 8

The shares of Company A and Company B both lie on the Security Market Line (SML). Company A has an expected return of 14% and a beta of 1.1. Company B has an expected return of 18% and a beta of 1.6. Using this information, calculate the market risk premium and the risk-free rate. Round your answer to one decimal place, if necessary; that is, if the answer is 22.72 percent the right answer will be 22.7 percent. Show your workings clearly and neatly.

[10 marks]

End of Paper