



**UNIVERSITI KUALA LUMPUR
BUSINESS SCHOOL**

**FINAL EXAMINATION
MARCH 2025 SEMESTER**

COURSE CODE : EGB20703
COURSE NAME : FINANCIAL ECONOMICS 1
PROGRAMME NAME : BACHELOR OF SCIENCE (HONOURS) IN
ANALYTICAL ECONOMICS
DATE : 19 SEPTEMBER 2025
TIME : 9.00AM – 12.00PM
DURATION : 3 HOURS

INSTRUCTIONS TO CANDIDATES

1. Please **CAREFULLY** read the instructions given in the question paper.
 2. This question paper has information printed on both sides of the paper.
 3. This question paper consists of **SEVEN (7) Questions**.
 4. Answer **ALL** questions.
 5. Please write your answers on the answer booklet provided.
 6. All questions must be answered in **English** (any other language is not allowed).
 7. This question paper must not be removed from the examination hall.
 8. Present and future values tables and formulas have been appended for your reference.
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THERE ARE FOUR (4) PAGES OF QUESTIONS, INCLUDING THIS PAGE.

SECTION A (Total: 30 marks)**INSTRUCTION: Answer ALL questions.****Please use the answer booklet provided.****Question 1**

- (a) Define money and list **THREE (3)** functions of money.
(5 marks)
- (b) Briefly explain **TWO (2)** reasons why we should study money, banking and financial markets.
(5 marks)

Question 2

- (a) What is asymmetric information in financial markets? Give **ONE (1)** example of its effect.
(5 marks)
- (b) Explain **TWO (2)** types of risk in portfolio risk.
(5 marks)

Question 3

- (a) List down the errors in information processing.
(4 marks)
- (b) Briefly explain any **THREE (3)** examples in behavioral biases.
(6 marks)

SECTION B (Total: 70 marks)**INSTRUCTION: Answer ALL questions.****Please use the answer booklet provided.****Question 4**

Project A and Project B are two mutually exclusive investment projects considered by a firm. Each requires an initial investment of RM100,000, and both projects have a useful life of 5 years. The expected cash inflows for each project are as follows:

Year	Project A (RM)	Project B (RM)
1	20,000	10,000
2	25,000	20,000
3	30,000	30,000
4	35,000	40,000
5	40,000	50,000

The firm's required rate of return is 10%.

- (a) Calculate the Net Present Value (NPV) for Project A and Project B.

(10 marks)

- (b) Based on your answer in (a), which project should be chosen? Why?

(5 marks)

Question 5

MNA Berhad has issued a 6-year corporate bond with a face value of RM1,000, an annual coupon rate of 8%, and a market interest rate (YTM) of 7%; its current market price is RM1,050.

- (a) Calculate the price of bond based on the given Yield to Maturity

(10 marks)

- (b) Using the bond's current market price of RM1,050, estimate the Yield to Maturity.

(10 marks)

Question 6

A stock has a risk-free rate of 4%. The factor risk premiums are 6% and 3%, with betas of 1.2 and 0.8 respectively.

- (a) Using the Arbitrage Pricing Theory (APT) model, calculate the stock's expected return.

(10 marks)

- (b) If the stock's actual return in the market is 15%, state whether it is overvalued or undervalued and explain your reasoning.

(5 marks)

Question 7

A stock has a risk-free rate of 4%, an expected market return of 12%, a beta of 1.4, an alpha of 2%, a market variance of 0.0225, and a residual variance of 0.04.

- (a) Calculate the expected return of the stock using the Single Index Model.

(5 marks)

- (b) Calculate the total variance and standard deviation of the stock's returns.

(5 marks)

- (c) Calculate the correlation coefficient between the stock and the market returns.

(5 marks)

- (d) Briefly interpret what the alpha, beta, and correlation values imply about the stock's risk and return characteristics.

(5 marks)

END OF EXAMINATION PAPER

FORMULA

Future Value

$$FV = PV (1 + i)^n$$

Effective Annual Rate

$$EFF(APR, m) = \left(1 + \frac{APR}{m}\right)^m - 1$$

• Where;

APR = annual percentage rate

m = the number of compounding periods per year

Present Value

$$PV_{FV}(FV, i, n) = \frac{FV}{(1+i)^n}$$

Utility Function

$$U = E(r) - \frac{1}{2} A \sigma^2$$

Where;

U = utility

E(r) = expected return on the asset or portfolio

A = coefficient of risk aversion

σ^2 = variance of returns

$\frac{1}{2}$ = a scaling factor

Expected Return of the complete portfolio

$$E(r_c) = r_f + y[E(r_P) - r_f]$$

Variance

$$\sigma_C^2 = y^2 \sigma_P^2$$

Slope/Sharpe ratio

$$Slope = \frac{E(r_P) - r_f}{\sigma_P}$$

Two-Security Portfolio Return

$$E(r_p) = w_D E(r_D) + w_E E(r_E)$$

Two-Security Portfolio: Risk

$$\sigma_p^2 = w_D^2 \sigma_D^2 + w_E^2 \sigma_E^2 + 2w_D w_E \text{Cov}(r_D, r_E)$$

Single Factor Model

$$r_i = E(r_i) + \beta_i m + e_i$$

Single Index Model Regression Equation

$$R_i(t) = \alpha_i + \beta_i R_M(t) + e_i(t)$$

Expected Return Beta Relationship

$$E(R_i) = \alpha_i + \beta_i E(R_M)$$

Variance Single-Index Model

$$\sigma_i^2 = \beta_i^2 \sigma_M^2 + \sigma^2(e_i)$$

Covariance Single-Index Model

$$\text{Cov}(r_i, r_j) = \beta_i \beta_j \sigma_M^2$$

Portfolio Variance

$$\sigma_P^2 = \beta_P^2 \sigma_M^2 + \sigma^2(e_P)$$

Portfolio sensitivity

$$\beta_P = \frac{1}{n} \sum_{i=1}^n \beta_i$$

Market Risk Premium

$$E(R_M) = \bar{A} \sigma_M^2$$

Where

$\bar{A}$ = investors risk aversion

σ_M^2 = variance of the market portfolio

CAPM

$$E(r_M) = r_f + \beta_M [E(r_M) - r_f]$$

Multifactor Model Equation

$$r_i = E(r_i) + \beta_{iGDP} GDP + \beta_{iIR} IR + e_i$$

Multifactor SML Models

$$E(r_i) = r_f + \beta_{iGDP} RP_{GDP} + \beta_{iIR} RP_{IR}$$

Bond Pricing

$$P_B = \sum_{t=1}^T \frac{C_t}{(1+r)^t} + \frac{ParValue}{(1+r)^T}$$

P_B = Price of the bond

C_t = interest or coupon payments

T = number of periods to maturity

r = semi-annual discount rate or the semi-annual yield to maturity

Yield to Maturity

$$\text{Yield to Maturity (YTM)} = \frac{[\text{Annual Coupon} + (\text{FV} - \text{PV}) \div \text{Number of Compounding Periods}]}{[(\text{FV} + \text{PV}) \div 2]}$$

Holding Period Return

Holding Period Return

$$= \frac{\text{Income} + (\text{End Of Period Value} - \text{Initial Value})}{\text{Initial Value}}$$