



ZIMBABWE EZEKIEL GUTI UNIVERSITY
FACULTY OF BUSINESS, ECONOMICS AND ACCOUNTING
DEPARTMENT OF ACCOUNTING AND FINANCE

EXAMINATION PAPER

COURSE CODE : **CAC406**

COURSE TITLE : **INVESTMENT ANALYSIS AND PORTFOLIO
MANAGEMENT**

SPECIAL REQUIREMENTS :

DURATION : **3 Hours**

LEVEL : **4.1 7 FEB 2022**

DATE :

INSTRUCTIONS TO CANDIDATES:

1. No cell phones are allowed in the examination venue.
2. Use of silent, non-programmable calculators is allowed
3. Answer ALL questions in Both Section A and Section B.
4. Begin each question on a new page.
5. The number of marks for each question or part question is shown in brackets []
6. Show all workings, where applicable.
7. Formulae sheet to be provided.

SECTION A

Answer all questions in this Section. Each question carries 2marks

Select the most appropriate answer.

1. Employment of funds with the aim of achieving additional income is known as ____
A) Investment B) Speculation C) Gambling D) Biting
2. Which type of market efficiency declares that current security prices totally reflect all information, equally public and private
A) Weak B) Semi-strong C) Strong D) None of these
3. The main objective of portfolio is to reduce _____ by diversification.
A) Return B) Risk C) Uncertainty D) Percentage
4. _____ describes the relationship between systematic risk and expected return for assets, particularly stocks
A) CAPM B) PERT C) Sharp ratio D) Treynor ratio
5. Asset allocation is procedure of scattering your assets between numerous different kinds of investments to
A) Highest risk B) Moderate risk C) Lessen risk D) No risk.
6. Variance calculation and measuring the Standard deviation is one way of measuring the _____.
A) Risk B) Return C) Speculation D) Gambling
7. The fundamental analysis approach has been associated with _____.
A) Uncertainties B) Certainties C) Ratios D) Balance sheet
8. The process of addition of more assets in an existing portfolio or changing the ratio of funds invested is called as _____.

A) Portfolio selection B) Portfolio Revision C) Portfolio diversification D) None of these

9. Markowitz model presumed generally investors are

A) Risk averse B) Risk natural C) Risk seekers D) Risk moderate

10. A combination of various investment products like bonds, shares, securities, mutual funds and so on is called as _____

A) Portfolio B) Investment C) Speculation D) Gambling

[Total : 20 marks]

SECTION B

Answer ALL questions in this Section

Question One

Evaluate the following in relation to bond making reference to the economy you are familiar with:

a). Factors affecting bond yields [9marks]

b). Theories that explain the shape and behavior of term structure. [16 marks]

[Total 25marks]

Question Two

Evaluate the factors affecting the level of:

a). Local Direct Investment in your economy and what the government is doing to improve the same. [15 marks]

b). Foreign Direct Investment (FDI) in your economy and what the government is doing to improve the same. [10marks]

[Total 25marks]

Question Three

Financial analysts believe that there are four equally likely states of the economy: depression; recession; normal; and boom. The returns on the Plowersped Holdings Ltd are expected to follow the economy closely, while the returns on the Sledco are not. The return predictions are as follow:

State of economy	Plowersped Returns (%)	Sledco Returns (%)
Depression	-20	5
Recession	10	20
Normal	30	-20
Boom	50	9

Required:

- Calculate the expected return for each security separately. [4 marks]
- Calculate the variance for each security. [6 marks]
- Calculate the standard deviation for each security separately. [4 marks]
- Calculate the Covariance between the two assets. [5 marks]
- Calculate the Correlation between the two assets [5 marks]

Assuming you can make a portfolio from the two assets, and that 60% of your company's fund are invested in Plowersped and the balance in Sledco.

- Calculate the expected return on portfolio. [2 marks]
- Calculate the variance of the portfolio. [2 marks]
- Calculate the standard deviation of the portfolio. [2 marks]

[Total 30marks]

END OF EXAMINATION QUESTION PAPER

**FORMULA SHEET FOR CAC 406 INVESTMENT ANALYSIS AND PORTFOLIO
MANAGEMENT**

1. Bond Price = $\sum(C_n / (1+YTM)^n) + P / (1+i)^n$

Where n = Period which takes values from 0 to the nth period till the cash flows ending period,

C_n = Coupon payment in the nth period,

YTM = interest rate or required yield and

P = Par Value of the bond

2. CAPM Required return, $R_i = R_f + \beta (R_m - R_f)$.

Where R_i -required return of stock i,

R_f - Risk free rate,

R_m -Market return rate and

β - Beta coefficient of the market

3. Beta coefficient of stock A, $\beta = \text{Cov}(r_a, r_m) / \sigma^2_m$,

Where r_a = stock A return,

R_m = Market return and

σ^2_m = Market variance

4. Correlation coefficient for Assets A and B., $R = \text{Cov}(A, B) / \sigma_a \sigma_b$

Where σ_a = Standard deviation of stock A and

σ_b = Standard deviation of Stock B.

5. Covariance for stock A and B, $\text{Cov}(a,b) = \sum p_i (r_a - E(r_a))(r_b - E(r_b))$

or $\sum (r_x - \bar{X})(r_y - \bar{Y}) / (n - 1)$

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Required:

- a). Calculate the expected return for each security separately. [4 marks]
- b). Calculate the variance for each security. [6 marks]
- c). Calculate the standard deviation for each security separately. [4 marks]
- d). Calculate the Covariance between the two assets. [5 marks]
- e). Calculate the Correlation between the two assets [5 marks]

Assuming you can make a portfolio from the two assets, and that 60% of your company's fund are invested in Plowersped and the balance in Sledco.

- f). Calculate the expected return on portfolio. [2 marks]
- g). Calculate the variance of the portfolio. [2 marks]
- h). Calculate the standard deviation of the portfolio. [2 marks]

[Total 30marks]

END OF EXAMINATION QUESTION PAPER

6. Expected return of stock X, $E(r) = \sum px$ or $\sum x/n$

where p = probability of economic state,

x = return of each economic state and

n = number of items.

7. Sharpe's ratio = $(R_p - R_f) / \sigma_p$

where σ_p = standard deviation of the portfolio,

R_p = return on portfolio and

R_f = risk free rate.

8. Treynor's ratio = $(R_p - R_f) / \beta_p$ where β_p = beta of portfolio.

9. Jensen's alpha = $R_i - ((R_f + \beta_p (R_m - R_f))$

10. Duration = $\sum (t \times PV) / \sum PV$

where t = time and

PV is the present value of the cashflows.

11. Variance of stock A, $\sigma^2_A = \sum p_i (r_i - E(r))^2$

12. Portfolio variance, $\sigma^2_{ab} = w_a^2 \sigma_a^2 + w_b^2 \sigma_b^2 + 2w_a w_b \text{COV}_{ab}$

or $w_a^2 \sigma_a^2 + w_b^2 \sigma_b^2 + 2w_a w_b \sigma_a \sigma_b r_{ab}$