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	:	**STATISTICAL TABLES**
DURATION	:	**3 Hours**
LEVEL		**4.1**
DATE		30 NOV 2022

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. **[Total: 20 marks]**

1. Speculator is a person _____

   A. who evaluates the performance of the company
   B. who uses his own funds only
   C. who is willing to take high risk for high returns
   D. who considers heresays and market behaviors

2. Employment of funds with the aim of achieving additional income is known as____

   A. Investment
   B. Speculation
   C. Gambling
   D. Biting

3. _____are financial assets.

   A. bonds
   B. Machines
   C. stocks
   D. A & C

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 coupon rate is another name for the_____.

A. market interest rate.

B. current yield.

C. stated interest rate.

D. yield to maturity.

8. In an underwriting arrangement, the risk is assumed by the_____.

A. issuer of the security.

B. investment bankers.

C. commercial bankers.

D. institutional investors.

9. Investors should be willing to invest in riskier investments only_____.

A. if the term is short.

B. if there are no safe alternatives except for holding cash.

C. if the expected return is adequate for the risk level.

D. if they are true speculators.

10. If interest rates are expected to rise, you would expect_____.

A. bond prices to fall more than stock prices.

B. bond prices to rise more than stock prices.

C. stock prices to fall more than bond prices.

D. stock prices to rise and bond prices to fall.

SECTION B

Answer ALL questions in this Section

Question One

a) Explain the procedure for listing shares through the Initial Public Offer (IPO) method. **[10 marks]**

b) In your view, explain why there have been few IPOs in Zimbabwe **[5Marks]**

c) Identify any two alternatives to IP0s and explain the merits and demerits of these alternatives. **[10Marks]**

Question Two

a) With aid of examples, explain factors that affect bond yields **[15Marks]**

b) Calculate the duration of a 4 year 10% bond with a par value of $1200 and a Yield to Maturity (YTM) of 15%. **[10Marks]**

Question Three **[30marks]**

You are thinking about investing your money in the stock market. You have the following three stocks in mind: stock A, B, and C. You know that the economy is expected to behave according to the following table. You believe the likelihood of each scenario is identical (all states of nature have equal probabilities. You also know the following about your two stocks:

State of the Economy	R_A	R_B	R_C
Depression	-20%	5%	-5%
Recession	10%	20%	5%
Normal	30%	-12%	5%
Boom	50%	9%	-3%

(a) Calculate the expected returns for stock A,B, and C **[5Marks]**

(b) Calculate the total risk for stock A, B and C **[5Marks]**

(c) Calculate the correlation coefficient between stock A and B **[3Marks]**

(d) Calculate the correlation coefficient between stock A and C **[3Marks]**

(e) Calculate the correlation coefficient between stock B and C **[3Marks]**

(f) Based on your previous answers, if you have to form portfolio consisting of two stocks, which two stocks would you put in your portfolio in terms of risk reduction? **[3Marks]**

(g) What is the expected return of a portfolio with equal investments in stock B and C? **[4Marks]**

(h) What is the covariance between the returns of the portfolio in part g and those of stock A? **[4Marks]**

END OF EXAMINATION QUESTION PAPER

FORMULA SHEET FOR CAC 406 INVESTMENT ANALYSIS AND PORTFOLIO MANAGEMENT

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

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

   Cn = Coupon payment in the nth period,

   YTM = interest rate or required yield and

   P = Par Value of the bond

2. CAPM Required return, $Ri = Rf + \beta (Rm - Rf)$.

   Where Ri -required return of stock i,

   Rf- Risk free rate,

   Rm -Market return rate and

   β - Beta coefficient of the market

3. Beta coefficient of stock A, $\beta = Cov (ra, rm)/\sigma^2 m$,

   Where ra = stock A return,

   Rm = Market return and

   $\sigma^2 m$ = Market variance

4. Correlation coefficient for Assets A and B., $R = Cov(A, B)/ \sigma a \sigma b$

   Where σa = Standard deviation of stock A and

   σb = Standard deviation of Stock B.

5. Covariance for stock A and B, $Cov(a,b) = \sum pi (ra - E(ra))(rb - E(rb))$

   or $\sum (rx - \dot{X})(ry - \bar{Y})/(n - 1)$

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 = (Rp - Rf) / σp

where σp =standard deviation of the portfolio,

Rp = return on portfolio and

Rf = risk free rate.

8. Treynor's ratio = (Rp - Rf) / βp where βp =beta of portfolio.

9. Jensen's alpha = Ri - ((Rf + βp (Rm - Rf))

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

where t = time and

PV is the present value of the cashflows.

11. Variance of stock A, σ^2_A = $\sum$pi (ra -E(ra))^2

12. Portfolio variance, σ^2_{ab} = $w^2_a\sigma^2_a + w^2_b\sigma^2_b + 2w_aw_bCov_{ab}$

or $w^2_a\sigma^2_a + w^2_b\sigma^2_b + 2w_aw_b\sigma_a\sigma_b r_{ab}$

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