



**ZIMBABWE EZEKIEL GUTI UNIVERSITY**

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**FACULTY OF LAW BUSINESS INTELLIGENCE AND ECONOMICS**

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**DEPARTMENT OF ACCOUNTING, FINANCE AND HUMAN CAPITAL MANAGEMENT**

**EXAMINATION PAPER**

**COURSE CODE** : CAC 214  
**COURSE TITLE** : CORPORATE FINANCE  
**SPECIAL REQUIREMENTS** : FORMULAE SHEET  
**DURATION** : 3 Hours  
**LEVEL** : 2.1  
**DATE** : 14 APR 2023

**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 [ ]

**Section A. [20 marks]**

**Answer all questions in this section.**

**Each question carries (2 marks)**

1. The primary goal of the financial management is \_\_\_\_\_.
  - A. to maximize the return
  - B. to minimize the risk.
  - C. to maximize the wealth of owners.
  - D. to maximize profit.
  
2. Capital budgeting is related to \_\_\_\_\_.
  - A. long terms assets.
  - B. short term assets.
  - C. long terms and short terms assets.
  - D. fixed assets.
  
3. A way to analyze whether debt or lease financing would be preferable is to:
  - A. compare the net present values under each alternative, using cost of capital as discount rate.
  - B. compare the net present values under each alternative, using the after-tax cost of borrowing as the discount rate.
  - C. compare the payback periods for each alternative.
  - D. compare the effective interest costs involved for each alternative
  
4. Internal rate of return is ...
  - A. Rate at which discounted cash inflow is more than discounted cash outflow
  - B. Rate at which discounted cash inflow is less than discounted cash outflow
  - C. Rate at which discounted cash inflow is equal to the discounted cash outflow
  - D. Either a or b
  
5. Assume an ordinary annuity of \$1,000 at the end of the next 3 years; what is the present value of the ordinary annuity discounted at 20%?
  - A. \$2,106.48
  - B. \$2,462.68
  - C. \$2,356.88
  - D. \$2,154.38
  
6. Using information provided on question 5, what is the future value at the end of year 3 if cash flows can be invested at 20%
  - A. \$3540
  - B. \$3752
  - C. \$3,884
  - D. \$ 3,640
  
7. Financial Management is mainly concerned with \_\_\_\_\_.

- A. arrangement of funds
  - B. all aspects of acquiring and utilizing financial resources for firms activities
  - C. efficient Management of every business.
  - D. profit maximization
8. A private limited company has \$100, 8% irredeemable debentures quoted at 82%, what is the cost of debt?
- A. 9.06%
  - B. 9.01%
  - C. 9.13%
  - D. 9.85%
9. Using information and your results from 8 question, what is the cost of debt if the company pays tax at 30%?
- A. 7.46%
  - B. 6.83%
  - C. 8.23%
  - D.7.21%
10. The stock price for Stock A was \$10 per share 1 year ago. The stock is currently trading at \$9.50 per share and shareholders just received a \$1 dividend. What return was earned over the past year?
- A. 6%
  - B. 5%
  - C. 7%
  - D. 8%

[TOTAL 20 MARKS]

**SECTION B**

Answer all questions.

**Question one**

A. You have been given the following information

Scenario	Probability of scenario	Return on asset C	Return on asset D
Boom	30%	20%	-10%
Normal	50%	0	0%
Recession	20%	-20%	45%

- i. Calculate the standard deviation of assets C and D and **(4marks)**
- ii. the portfolio of these two assets with equal weights **(4marks)**
- B. Suppose X Ltd is expected to pay \$2 cash dividend at the end of the year. The required rate of return of the stock of X Ltd is 15%. If the share of X Ltd is currently selling at \$40, what is the expected growth rate in the dividends of X Ltd. **(4marks)**
- C. If you deposit \$100 at the end of each year for three years in a savings account that pays 5 percent interest per year, how much will you have at the end of three years? **(4marks)**
- D. Explain the key assumption of Arbitrage Pricing Theory. **(4marks)**
- E. Briefly discuss principal - agent problems as related to a corporation. **(5marks)**

**[Total 25 marks]**

#### **Question two**

- A. Tim Ltd.'s expected annual net operating income (EBIT) is \$500,000. The company has \$2 million worth of 10% debentures outstanding. The equity capitalization rate is 20% and there are 30,000 shares outstanding.
  - I. Determine the value of the firm. **(3marks)**
  - II. Determine the value of each ordinary share capital. **(2marks)**
  - III. Calculate the weighted average cost of capital. **(4marks)**
- B. Explain the merit of capital budgeting. What problems is capital budgeting trying to solve and show examples of projects that are assessed by capital budgeting **(4marks)**
- C. Explain concepts of diversifiable and non-diversifiable risk in portfolio theory. **(4marks)**
- D. Describe the concept of cost of capital and explain how it is measured. **(4marks)**
- E. What is the Capital Asset Pricing Model (CAPM)? How is the variable beta used? **(4marks)**

**[TOTAL 25 MARKS]**

#### **Question three**

- A. You are given the probability distributions of stock X and stock Y in the table below.

Probability	Returns for stock X	Returns for stock Y
0.1	-10	4
0.3	0	8
0.3	6	0
0.2	10	-5
0.1	20	15

- i) The covariance between returns of stock X and Stock Y. **(6marks)**
- ii) The correlation coefficient between returns of Stock X and stock Y. **(5marks)**

B. D Ltd.'s optimal capital structure is; debt: 25%, preferred stock 15%, common stock 60%.

D Ltd.'s expected net income for the year is \$35,000. It has established a dividend payout ratio is 30%, the corporate tax is 40%, the investors expect the future earnings and dividends to grow at a constant rate of 9%. D Ltd paid a dividend of \$3 per share last year and its stock is currently selling for \$40 per share.

D Ltd can obtain new capital as follows;

- New preferred stock with a dividend of \$11 per share can be sold for \$95 per share.
- Debt can be sold at an interest rate of 12%

- i. Cost of equity **(3marks)**
- ii. Cost of preferred stock **(3marks)**
- iii. Cost of debt after tax. **(3marks)**
- iv. Calculate the Weighted Average Cost of Capital (WACC). **(5marks)**

C. Josh bank advertises that investors can become a millionaire in 20 years given a rate of 30.5% compounded annually. What is the annual investment that the investor should make to reach the objective of \$1 million in 20 years? **(5marks)**

**[TOTAL 30 MARKS]**

**END OF EXAMINATION QUESTION PAPER**

## FORMULAR SHEET FOR CAC 214 CORPORATE FINANCE

Corporate Finance Formula Sheet

September-13

<p><b>Legend Key for TVM Formulae</b>  <i>r</i> = required rate of return, interest or discount rate per period  <i>n</i> = number of periods  <i>C</i> = periodic cash flow payment  <i>g</i> = periodic growth rate</p>	<p><b>Future Value - Regular Annuity</b></p> $FV = C \times \left[ \frac{(1+r)^n - 1}{r} \right]$
<p><b>Future Value Lump Sum - Simple Interest</b></p> $FV = PV(1+nr)$	<p><b>Present Value - Regular Annuity</b></p> $PV = C \times \left[ \frac{1 - \frac{1}{(1+r)^n}}{r} \right]$
<p><b>Future Value Lump Sum - Compound Interest</b></p> $FV = PV(1+r)^n$	<p><b>Present Value - Annuity Due</b></p> $PV_D = C \times \left[ \frac{1 - \frac{1}{(1+r)^n}}{r} \right] (1+r)$
<p><b>Present Value Lump Sum - Compound Interest</b></p> $PV = \frac{FV}{(1+r)^n}$	<p><b>Future Value - Annuity Due</b></p> $FV_D = FV_{\text{Regular Ann}}(1+r)$
<p><b>Present Value of a Perpetual Annuity</b></p> $PV = \frac{\text{Annuity Payment}}{r}$	<p><b>Future Value - Annuity Due</b></p> $FV_D = C \times \left[ \frac{(1+r)^n - 1}{r} \right] (1+r)$
<p><b>Effective Annual Rate of Interest</b></p> $EAR = \left[ 1 + \frac{i}{n} \right]^n - 1$ <p><small><i>i</i> = quoted annual percentage rate &amp; <i>n</i> = number of compounding periods per year.</small></p>	<p><b>Present Value of a Finite Growing Annuity</b></p> $PV = \frac{C}{r-g} \left[ 1 - \left( \frac{1+g}{1+r} \right)^n \right]$
<p><b>Periodic Rate of Interest</b></p> $r = \left[ 1 + \frac{i}{m} \right]^{m/f} - 1 \quad \text{or} \quad r = [1 + EAR]^{1/n} - 1$ <p><small><i>i</i> = quoted annual percentage rate, <i>m</i> = compounding frequency of quoted rate, <i>f</i> = frequency of compounding of required periodic rate &amp; <i>n</i> = number of compounding periods per year.</small></p>	<p><b>Effective Annual Rate - Continuous Compounding</b></p> $EAR = e^q - 1$ <p><small><i>q</i> = quoted rate  <i>e</i> = 2.718281828</small></p>
<p><b>Annual Periodic Rate of Interest</b></p> $APR = n \left( [1 + EAR]^{1/n} - 1 \right)$	<p><b>Price of Preferred Shares</b></p> $P_0 = \frac{D}{r}$