UNIVERSITY OF CAPE TOWN
DEPARTMENT OF FINANCE AND TAX

MANAGERIAL FINANCE (FTX1005F)
TUTORIAL PACK – 2023

The most important thing in life is to have a focus and purpose.

Remember this - that there is a proper dignity and proportion to be observed in the performance of every act of life.

Marcus Aurelius (Roman Emperor: 161 – 180)

To be free is not merely to cast off one's chains, but to live in a way that respects and enhances the freedom of others.
Education is the most powerful weapon, which you can use to change the world.
You can never have an impact on society if you have not changed yourself … Great peacemakers are all people of integrity, honesty and humility.

Nelson Mandela

The age of nations is past, it remains for us now, if we do not wish to perish, to set aside the ancient prejudices and build the earth.

Pierre Teilhard de Chardin, S.J.

What we have to learn to do, we learn by doing.
We are what we repeatedly do. Excellence, then, is not an act, but a habit.

Aristotle

There is no progress without a struggle.
Today's struggle is tomorrow's success.

MANAGERIAL FINANCE (FTX1005F)
TUTORIAL 1
BUSINESS ENVIRONMENT AND OBJECTIVES OF ACCOUNTING
HAND IN DATE: Monday 20 February 2023

Mathematics section

This must be attempted by all students and is a compulsory hand in.

Week beginning 20 February 2023

Mathematical operations

There are four basic operations that can be performed on numbers:

- Multiplication represented by x or *
- Division represented by ÷or /
- Addition represented by +
- Subtraction represented by -

The order in which the operations are performed in an expression is:

- First Brackets, Division and Multiplication
- Then Addition and Subtraction

- **Remember BODMAS (*Brackets over Division, then Multiplication, Addition and Subtraction)***

Calculate the following:

1. 3 x (9 – 4)

2. (8- 2) + 1

3. 5 - (5 + 9)

4. 6 - (12 -3)

5. 10 + (9 – 12)

6. 4 x (7 – 5)

7. 12 – (3 x2)

8. 10 + (-3 x 2)

9. -8 - (3 – 2)

10. - 5 x (4 - 6)

1. TRUE/FALSE QUESTIONS

For each of the following statements indicate whether they are True or False. Please provide a brief explanation if a statement is false.

1.1 Liabilities are items of value owned by the business and are also called resources.

1.2. The accrual basis of accounting requires that income be recognised when the risk and rewards of ownership is transferred from seller to the purchaser in a credit sale and when the cash is collected from the debtor.

1.3. Each partner may be held liable for the actions of other partners while they are acting with the scope of the partnership.

1.4. A creditor of the partnership has a claim against an individual's personal assets if the partnership has no cash available to pay the creditor.

1.5 The Companies Act No. 71 of 2008 identifies four different kinds of profit undertakings that could be registered namely Public companies, Private companies, State owned enterprises and personal liability firms.

1.6 Relevance and Faithful representation are the two most important Fundamental Characteristics that financial information provided in annual financial reports must comply with.

1.7 Timeliness, Verifiability, Comparability and Understandability are all referred to as Enhancing Characteristics of financial information provided in annual financial reports.

1.8 When a company registers it must complete and submit a Memorandum of Association to the Registrar of Companies.

1.9 The new Companies Act No. 71 of 2008 allows for any company to be registered with only one class of share.

1.10 All profit Companies must have a minimum of 1 shareholder.

1.11 The current company tax rate is 35%.

1.12 The current Value Added Tax *(VAT)* rate is 16%.

1.13 The recording *(bookkeeping)* process is repetitive and mechanical while the reporting *(accounting)* process is a principle based technical procedure and must comply with Accounting Standards.

1.14 Management accounting deals with the provision of information for internal decision-making.

1.15 The category in a company will be classified as is dependent on certain criteria such as turnover and number of employees.

2. MATCHING QUESTIONS

Match each term with the appropriate definition by writing the appropriate letter in the space provided.

		Term		Definition
	2.1	Accounting	(a)	A process of recording, classifying and summarising the financial effect of transactions of a business that will be useful to users to make informed decisions.
	2.2	Basic accounting equation	(b)	A annual financial report that lists all the assets, equity and liabilities of a business
	2.3	Operating expenses	(c)	A person or business to whom money is owed.
	2.4	Accounting principle	(d)	An algebraic expression indicating the equality of Assets to Equity plus liabilities: Assets = Equity + Liabilities
	2.5	Statement of Comprehensive Income (Income statement)	(e)	A person that owes the business money.
	2.6	Statement of financial position	(f)	An annual financial report listing revenues, expenses and net profit *(loss)* of a business
	2.7	Creditors	(g)	A rule adopted by accounting profession as a guide to measuring and reporting the financial effect of business transactions.
	2.8	Debtors	(h)	All resources and services consumed in the process of earning business income
			(i)	An examination by an independent auditor of the supporting source documents and annual financial reports of a business.

3. MULTIPLE CHOICE QUESTIONS *(MCQ)*

Select the most correct answer.

3.1 The minimum number of natural persons required for the formation of a partnership is:

(a) 1
(b) 2
(c) 50
(d) Not limited
(e) None of the above

3.2 In the event of a public company listed on the Johannesburg Securities Exchange *(JSE)* being liquidated a shareholder's liability in the company is restricted to:

(a) The amount unpaid on investors shares
(b) The total value of the investors personal assets
(c) The total value of the investors initial investment in the company
(d) The amount of the unpaid liabilities
(e) None of the above

3.3 The continued operating *(trading)* of an accounting entity in the absence of evidence to the contrary is an example of the basic concept of:

(a) Accounting entity
(b) Consistency
(c) Going concern
(d) Substance over form
(e) Accrual basis

3.4 The two fundamental characteristics of financial information are:

(a) Relevance and faithful representation
(b) Understandability and relevance
(c) Neutrality and comparability
(d) Relevance and reliability
(e) None of the above

3.5 Accounting information that enables decision-makers to confirm or correct prior expectations is said to have:

(a) Predictive value
(b) Representational faithfulness
(c) Feedback value
(d) Comparability
(e) None of the above

3.6 According to the new Companies Act 1971 of 2008 forms of ownership is split into two categories:

(a) Public and Private Companies
(b) Partnerships and Private companies
(c) Profit and Not for Profit companies
(d) Only three forms of profit companies
(e) None of the above

3.7 The document that a company must lodge *(register)* with the Registrar of Companies before it commences trading is:

(a) Articles of Association
(b) Memorandum of Association
(c) Memorandum of Incorporation
(d) Founding Statement
(e) None of the above

3.8 Enhancing characteristics consist of the following:

(a) Comparability, Reliability, Relevance and Faithful representation
(b) Relevance, Accuracy, Timeliness and Accrual basis
(c) Comparability, Verifiability, Timeliness and Understandability
(d) Faithful representation, Going concern, Accrual basis and Understandability
(e) None of the above

3.9 A profit company registered under the new Companies Act No.71 of 2008 must have at least:

(a) 4 Shareholders
(b) 2 shareholders who must be natural persons
(c) 1 Shareholder
(d) 6 Shareholders
(e) None of the above

3.10. Ordinary shares *(class A)* typically have:

(a) No voting rights
(b) A limited liability for debts of the company
(c) A predetermined dividend rate
(d) The privilege of converting into bonds *(debt)* or preference shares
(e) All of the above

Question 4

Part A

You are to complete the gaps in the following table:

	Assets	Capital	Liabilities
a)	R12 500	?	R1 800
b)	R28 000	?	R4 900
c)	R16 800	R12 500	?
d)	19 600	R16 450	?
e)	?	R19 200	R6 300
f)	?	R39 750	R11 650

Part B

You are to complete the gaps in the following table:

	Assets	Capital	Liabilities
a)	R55 000	?	R16 900
b)	?	R34 000	R17 200
c)	R36 100	R28 500	?
d)	R119 500	?	R15 400
e)	R88 000	R62 000	?
f)	?	R110 000	R49 000

Hint: Assets (A) = Equity (E) + Liabilities (L)

Part C

Dorothy Jansen starts a new business. Before she actually sells anything. She buys a motor vehicle R20 000, and buildings R50 000 and pays by cheque. She also buys inventory R4 000 *(with the intention to sell at a profit)* and still and still owes R1 000 in respect of them. She borrows R30 000 from African Bank. After the events just described and before trading starts, she has R2 000 cash in hand and R35 000 cash at bank.

You are required to calculate the amount of her capital introduced.
Hint use: A = E + L

Part D

Write a short essay *(maximum one page)* on the Accounting Equation Assets = Equity + Liabilities. The essay should provide a detailed description of the definition each of the elements of the Accounting equation, 3 examples of each of the elements and sub elements especially under Equity and a brief description on which side the account increases and decreases. **(no word limit as it's all up to you)**

CHAPTER 2: END OF CHAPTER QUESTIONS

Source: Flynn, D: "Understanding Finance & Accounting"; Revised 3rd edition; LexisNexis; 2009.

2.10 Sun International South Africa Ltd is a company listed on the JSE Securities Exchange in the Cyclical Services: Leisure, Entertainment and Hotels sector.

REQUIRED

List eight categories of different assets and three categories of liabilities that a company such as this may use in pursuit of its business operations.

2.11 The following returns were achieved after the appropriate investment had been held for one year.

(1) R900 interest from a bank for an investment in a fixed deposit of R7 500.
(2) A sole proprietor recorded a profit for the year of R21 000 for the business in which she had invested R100 000.
(3) A member invested R50 000 in a close corporation for a 20% membership share. The corporation reported a profit of R150 000. No dividends *(distributions)* were paid during the period.
(4) A fund manager purchased 200 000 shares for R17.50 each. During the year the company paid a dividend of R1.30 per share. The share was trading at R19.80 at the end of the year.

YOU ARE REQUIRED TO:

Calculate the return achieved on each of the investments as a percentage of the capital sum invested. Where personal tax is applicable, assume a rate of 30%.

2.12 The following is a list of the assets and liabilities of Vertikale Ltd at 30 June, in alphabetical order.

			Please tick		
	20.5	**20.4**	**Assets**	**Equity**	**Liabilities**
	R	**R**			
Cash resources	20,106	24,131			
Creditors	296,690	265,370			
Debtors	260,384	234,053			
Equipment	18,129	17,657			
Inventory	330,417	308,873			
Investment	60,173	44,255			
Motor vehicles	7,685	7,085			
Ordinary share capital	27,035	27,035			
Bank overdrafts	1,250	24,905			
Plant and machinery	44,832	35,343			
Premises	24,225	24,512			
Retained income / earnings	?	?			
Secured loans	8,205	6,540			
Shareholder's dividends	1,263	6,122			
Short term loans	29,294	19,829			
Unsecured loans	183,360	137,177			

YOU ARE REQUIRED TO:

Prepare the properly classified Statement of Financial Position in vertical format showing the comparative figures for the 20.5 and 20.4 years.

(b) Calculate the Retained Income *(earnings)* for each of the two years.

(c) Write down the amounts *(numbers)* for the following:
- Total assets
- Total liabilities
- Shareholder's equity
- Net asset value per share if there are 50 000 Class A shares in issue.

Please present your answer for (a), (b) and (c) as follows:

		20.5	**20.4**

MANAGERIAL FINANCE (FTX1005F)
TUTORIAL 2
SOURCES OF FINANCE *(METHODS OF FINANCING)*
HAND IN DATE: Monday 27 February 2023

1. TRUE / FALSE

For each of the following statements indicate whether they are True or False. Please provide a brief explanation if a statement is false.

1.1 The relationship between debt and equity on a Statement of Financial Position is often referred to as the capital structure.

1.2 There are four sources of long term finance for a firm namely Ordinary shares, Preference shares, Long term loans and Retained earnings.

1.3 When choosing between debt and equity the following factors must be considered, return, risk and control.

1.4 When directors of a public company decides to declare dividends *(distribution of net assets)*, ordinary dividends is normally declared before a preference shares.

1.5 The cost of new shares is normally greater than any other form of long term financing.

1.6 The cost of long term debt is the after tax cost of debt which is calculated as follows,
Cost of debt *(1 – tax rate)*.

1.7 The following is the correct way of ranking the sources of financing in order of one with the highest risk to lowest risk; Loans, preference shares and Equity.

1.8 Issuing new shares to the public increases the existing shareholders' control of the company.

1.9 With regards to the impact on the overall risk profile of a company, a company with a high debt ratio levels bears significant risk.

1.10 Debt has an insignificant impact on the cash flow position of a company.

1.11 Debt is a cheaper source of financing to the investor because it bears lower risk and it is tax deductible.

1.12 The capital market refers to the short-term market for securities whereby entities raise or invest in debt and equity.

1.13 Money market refers to a long-term financial market where borrowers and lenders are brought together by banks and other financial institutions.

1.14 Rights issues refer to capital that is raised by giving potential investors the right to subscribe to new shares in proportion to their potential shareholding.

1.15 The two methods used to obtain a listing are placing and offer for sale.

1.16 Underwriters are financial institutions that agree to sell any securities which are not subscribed for by the investing public at the issue price.

1.17 Retained earnings or past profits which are ploughed back into the company represent a free source of financing.

1.18 One reason for listing is that it gives a company an enhanced public image and more exposure in the media.

1.19 Preference shares form a hybrid instrument with characteristics of both equity and debt.

1.20 One of the reasons why companies issue preference shares instead of debt is that when a company makes a loss in a particular year, dividends do not have to be paid whereas interest on loans has to be paid.

2. MATCHING QUESTIONS

Match each term with the appropriate definition by writing the appropriate letter in the space provided.

		Term		Definition
	2.1	Equity	(a)	Financiers who assist with launching and developing a business.
	2.2	Ordinary shares *(Class A)*	(b)	Deals with the composition of equity and debt in financing a company's assets.
	2.3	Interest expense on borrowed finance	(c)	This form of finance is the most expensive.
	2.4	Statement of Changes in Equity	(d)	Provides a taxation benefit that reduces the nominal interest rate to a lower rate.
	2.5	Preference shares	(e)	Reports on the sources of changes in individual shareholders' equity accounts reported on the Statement of Financial Position.
	2.6	Capital Structure	(f)	A share that is issued by a company that has preferential right to receive a dividend but no voting rights
	2.7	Retained earnings	(g)	The holder of this share is the owner of the company and accepts a higher risk for higher return.
	2.8	Initial Public Offering *(IPO)*	(h)	The company's accumulated *(undistributed)* or reinvested net profit after tax. *Distributions of earned assets are called dividends.*
			(i)	When the company issues Ordinary *(Class A)* shares for the very first time to the general public.

MANAGERIAL FINANCE (FTX1005F)
TUTORIAL 2
COST OF CAPITAL
HAND IN DATE: 27 February 2023

1. TRUE / FALSE

For each of the following statements indicate whether they are True or False. Please provide a brief explanation if a statement is false.

1.1 The cost of debt component is difficult to establish.

1.2 An optimal capital structure is a mix of debt and equity that maximises the value of the company for shareholders and in practice it is easy to know what that proportion of debt and equity should be.

1.3 The weighted average Cost of Capital is the same as the required rate of return on equity. F

1.4 Cost of Capital is the same as Cost of Equity.

1.5 The Weighted Average Cost of Capital is the same as the Cost of Capital.

1.6 Firms prefer to use book value weights of the different forms of finance when calculating a firm's Cost of capital.

1.7 Bank overdraft can be a source of finance when used on a regular basis by a firm.

1.8. Cost of capital is the cost of the firm's pool of capital.

1.9. The cost of preference shares is the ratio of the preferred stock dividend to the firm's net proceeds from sale of preferred shares *(stock)*.

1.10. There is only one way of calculating the cost of equity and that is through using CAPM.

1.11. Since preference shares is a hybrid of equity and debt, the cost of preference shares component in the calculation of cost of capital is adjusted for tax purposes.

1.12. The cost of capital reflects the expected average future cost of capital over the long run.

1.13. Weights used in the calculation of cost of capital represent the proportions of the costs of the sources of financing in the capital structure.

1.14. There are three alternatives ways of calculation of weights namely the use of book value, or market values or the target capital structure.

1.15. The target capital is the most ideal alternative for calculating the weights used in the calculation of cost of capital because it reflects the firm's desired capital structure proportions.

1.16 If a bond is trading at a premium the coupon rate is greater than the Yield to Maturity (YTM).

2. MATCHING QUESTIONS

Match each term with the appropriate definition by writing the appropriate letter in the space provided.

		Term		Definition
	2.1	Flotation cost	(a)	The combination *(percentages)* of debt, preferred equity, or ordinary equity that will maximise the price of the firm's ordinary shares.
	2.2	Cost of retained earnings r_e	(b)	The relevant cost of new debt, taking into account the tax deductibility of interest.
	2.3	Weighted average cost of capital *(WACC)*	(c)	The particular types of capital used by the firm such as debt, preferred equity, or ordinary equity.
	2.4	Yield to maturity *(YTM)* of debt instruments such as a bond or debenture.	(d)	The rate of return required by shareholders on the firm's existing ordinary shares.
	2.5	After tax cost of debt r_d	(e)	The cost of new ordinary shares based on the cost of retained earnings, but increased for the flotation cost.
	2.6	Cost of new ordinary shares	(f)	The average rate of return earned on a bond at a particular market price if it is held to maturity.
	2.7	Capital components	(g)	A weighted average of the component cost of debt, preferred equity, or ordinary equity.
	2.8	Target *(optimal)* capital structure	(h)	The expenses incurred when selling new issues of capital securities.
			(i)	

3. MULTIPLE CHOICE QUESTIONS *(MCQ)*

Select the most correct answer.

3.1 The firm's cost of capital is affected by its:

(a) Business risk
(b) Financial risk
(c) Systematic risk
(d) Unsystematic risk
(e) All of the above

3.2 An increase in the tax rate will

(a) Increase the cost of weighted average cost of capital
(b) Decrease the cost of debt
(c) Have no effect on the cost of equity.
(d) Increase the cost of preference shares.
(e) (b) and (c) are correct.

3.3 On 30 June 2021, Nadeem Ltd has the following capital structure in the equity section of the Statement of Financial Position *(balance sheet)*:

	R
800 000 Ordinary shares of R1	R800 000
Share premium	R200 000
Retained income *(earnings)*	R1 000 000

Nadeem Ltd has a tax rate of 30% and expects to make reasonable profits in the next financial year and has opportunities for sustainable growth. The company expects to pay a dividend of **R4 per ordinary share next year**. The company is expected to maintain a constant and indefinite growth rate in its dividends of 8 %. The shares currently sell for R24 each. The company's **cost of ordinary equity is**:

(a) 18.5 %
(b) 20.5 %
(c) 19.5 %
(d) 24.67 %
(e) 16.7 %

3.4 On 30 June 2021, Nadeem Ltd has the following capital structure in the equity section of the Statement of Financial Position *(balance sheet)*:

	R
800 000 Ordinary shares of R1	R800 000
Share premium	R200 000
Retained income *(earnings)*	R1 000 000

Nadeem Ltd has a tax rate of 30% and expects to make reasonable profits in the next financial year and has opportunities for sustainable growth. The firm has a beta of 1.2. The market risk premium is 13% and the risk-free rate is 6%. **The company's cost of ordinary equity is**:

(a) 8.4%
(b) 13%
(c) 6%
(d) 4.4%
(e) 14.4%

3.5 On 30 June 2021, Nadeem Ltd has the following capital structure in the equity and liabilities section of the Statement of Financial Position *(balance sheet)*:

	R
800 000 Ordinary shares of R1	R800 000
Share premium	R200 000
Retained income *(earnings)*	R1 000 000
Long term loan *(15% p.a.)*	R500 000

Nadeem Ltd has a tax rate of 30% and expects to make reasonable profits in the next financial year and has opportunities for sustainable growth. The firm has a beta of 1.2. The market risk premium is 13% and the risk-free rate is 6%. The company's cost of capital *(WACC)* is:

(a) 13.62%
(b) 11.52%
(c) 2.1%
(d) 9.42%
(e) 14.52%

3.6 On 30 June 2021, Nadeem Ltd has the following capital structure in the equity and liabilities section of the Statement of Financial Position *(balance sheet)*:

	R
800 000 Ordinary shares of R1	R800 000
Share premium	R200 000
Retained income	R1 000 000
14% Preference shares of R2	R500 000
Debentures (*15% p.a.)*	R500 000

Nadeem Ltd has a tax rate of 30% and expects to make reasonable profits in the next financial year and has opportunities for sustainable growth. The firm has a beta of 1.1. The market risk premium is 15% and the risk-free rate is 7%. The company's cost of capital *(WACC)* is:

(a) 10.53%
(b) 1.75%
(c) 12.28%
(d) 14.62%
(e) 15.8%

Question 4	10 marks
Principles of Managerial Finance Lawrence J. Gitman (Problem P11.-8)	

A&B Corporation ordinary shares have a Beta (β) of 1.2. The risk-free rate is 6% and the market return is 11%.

YOU ARE REQUIRED TO:

1. Determine the risk premium on A&B ordinary share.
2. Determine the required return that A&B ordinary share should provide.
3. Determine A&B's cost of ordinary share equity using the Capital Asset Pricing Model *(CAPM)*.

Question 5	10 marks

You are provided with the following information with regards to Share A and B. Share A and B are listed on the JSE and these shares have betas of 0.75 and 1.5 respectively. Furthermore, you are told that the rate on the NCD *(National Certificate of deposit)* Treasury bill is 13*% (Hint: this is the risk free rate)* and that the market return is 22%.

YOU ARE REQUIRED TO:

Calculated the required rate of return for each of the two shares and explain the differences in the required rate of return. Show all your calculations and formulae used for each part of the question.

Question 6	
Principles of Managerial Finance Lawrence J. Gitman (Problem P11-11)	

The effect of the tax rate on WACC.

Equity Lighting Ltd wishes to explore the effect on it cost of capital of the rate of tax at which the company pays taxes. The firm wishes to maintain a capital structure of 30% debt, 10% preference share, and 60% ordinary shares. The cost of financing with retained earnings is 14%, the cost of preference shares financing is 9% and the cost of before tax cost of debt financing is 11%. Calculate the weighted average cost of capital *(WACC)* given the tax rate assumptions in parts 1 to 3.

YOU ARE REQUIRED TO:

1. Tax rate = 30%
2. Tax rate = 35%
3. Tax rate = 25%
4. Describe the relationship between the changes in the rate of taxation and the weighted average cost of capital.

Question 7	
Principles of Managerial Finance Lawrence J. Gitman (Problem P11-13)	

WACC – book weight and market weights

Webster Company has compiled the information shown in the following table:

Source of capital	Book value	Market value	After tax cost
Long–term debt	R4 000 000	R3 840 000	6%
Preference shares	40 000	60 000	13%
Ordinary share equity	1 060 000	3 000 000	17%
Totals	**R5 100 000**	**R6 900 000**	

YOU ARE REQUIRED TO:

1. Calculate the Weighted Average Cost of Capital *(WACC)* using the book value weights.
2. Calculate the Weighted Average Cost of Capital *(WACC)* using the market value weights.
3. Compare the answers obtained in parts 1 and 2. Explain the differences.

Question 8	
Source Managerial Finance (FTX1005F) 2012 June Q5A	

On 30 June 2021, Nadeem Ltd has the following capital structure in the equity and liabilities section of the Statement of Financial Position *(balance sheet)*:

	R
800 000 Ordinary shares of R1	R800 000
Share premium	R200 000
Retained income	R1 000 000
14% Preference shares of R2	R500 000
15% debentures	R300 000

Nadeem Ltd has a tax rate of 30% and expects to make reasonable profits in the next financial year and has opportunities for sustainable growth. Ordinary shareholders require a return of 5% above debenture holders.

YOU ARE REQUIRED TO:

Calculate the Weighted Average Cost of Capital *(WACC)* rate which it must earn on all its funds.
Please present your answer as follows:

Finance Source	Amount	Weight	Cost	

Question 9

12.17

Source: Flynn, D: "Understanding Finance & Accounting"; Revised 3rd edition; LexisNexis; 2009.

Lala Mandi has the following summarised Statement of financial position at the beginning of the year. You know that the required cost of equity is 15%, the tax rate is 30%, and the dividend payout ratio is 40%.

LALA MANDI LTD
STATEMENT OF FINANCIAL POSITION ON 1 JANUARY 2.05

ASSETS			**EQUITY AND LIBILITIES**	
Non-current assets	**400,000**		**Shareholders' equity**	**300,000**
Current assets	**230,000**		**10% Debentures**	**50,000**
Inventory	120,000		**Long-term loan *(16 % p.a.)***	**70,000**
Accounts receivables	85,000			
Cash	25,000		**Current liabilities**	**210,000**
			15% Bank overdraft	150,000
			Accounts payable	60,000
	R630,000			**R630,000**

Limited information for the results of Lala Mandi Ltd for the year is presented in the partially completed Income Statement.

LALA MANDI
INCOME STATEMENT FOR THE YEAR ENDED 31 DECEMBER 2.05

Sales income	?
Less: Cost of sales expense	340,900
Gross profit	219,100
Less: Operating expenses	123,470
Profit before interest and tax	**?**
Interest	**?**
Profit to shareholders	**?**
Dividends	**?**
Retained income	**?**

(Note: Dividends is not normally reported in the Income statement, but in the statement of changes in equity)

YOU ARE REQUIRED TO:

(a) Calculate the Weighted Average Cost of Capital.

(b) Complete the Income Statement for the year.

Question 10

12.14

Source: Flynn, D: "Understanding Finance & Accounting"; Revised 3rd edition; LexisNexis; 2009.

On 30 June 20.5 Swan Industrial Ltd has the following capital structure in the Equity and Liabilities section of the Statement of financial position:

100 000 Ordinary shares of R3	R3,300,000
Share premium	R900,000
Retained income	R3,200,000
14% Preference shares of R5	R5,500,000
12% Debentures	R500,000

Swan Industrial has a tax rate of 30%, expects to make reasonable profits in the next financial year and has opportunities for growth. Ordinary shareholders require a return of 17% on their funds.

YOU ARE REQUIRED TO:

Calculate the weighted average cost of capital *(WACC)*.

Question 11

12.15

Source: Flynn, D: "Understanding Finance & Accounting"; Revised 3rd edition; LexisNexis; 2009.

Valet Ltd has a target capital structure of 70% equity and 30 % debt. The after-tax cost of future debts is 12 % and the cost of new equity is 19%. The financial manager is currently considering a project with an expected return of 16 that will be financed from the issue of ordinary shares as all the retained income is already budgeted for in more profitable projects. The company recently took out a large long-term loan and, as a result, the present capital structure is more heavily weighted towards debt.

YOU ARE REQUIRED TO:

(a) Calculate the weighted average cost of capital *(WACC)*.

(b) State, with reasons, whether the project under consideration should be accepted.

QUESTION 12	(13 MARKS: MINUTES)

Martin is the owner of a small business, Watch Out, which is a producer of custom South African watches. His has been running his business successfully and has been approached by a wealthy investor who is interested in getting a stake in his business to *"take it to new heights"* as he says. Martin is excited about the idea, but is weary of being ripped off by the investor who has a reputation for exploiting small business owners who don't know the value of their business.
Martin is therefore in the process of valuing his business so that he can negotiate with the investor. He is running into trouble with his cost of capital and needs your help.

Here is an extract from Watch Out's Balance Sheet:

EQUITY	
Share Capital *(1 000 shares @ R20)*	20 000
Retained earnings	50 000
Preference share capital *	50 000
NON – CURRENT LIABILITIES	
Long term loan**	50 000
Lease on factory	50 000

***** Preference shares pay a fixed dividend of 10% per annum.
****** The long-term loan was granted at an interest rate of 12% per annum.
***Martin has calculated from past profit growth, that he would require 20% return on his equity to be satisfied going forward.

Martin issued the preference shares to his wealthy brother who wanted to help him out with his business. All interest rates can be assumed to be at the current market rate.

YOU ARE REQUIRED TO:

1. Briefly explain why would Martin issue preference shares and not ordinary shares as a form of raising capital *(finance)*?

(2 marks)

2. Calculate Martin's Weighted Average Cost of Capital *(WACC)*. Assume a tax rate of 28%.

(9 marks)

3. Name two different methods of calculating a firm's the cost of equity.

(2 marks)

MANAGERIAL FINANCE (FTX1005F)
TUTORIAL 3
RECORDING TRANSACTIONS AND REPORTING
HAND IN DATE: Monday 6 March 2023

Mathematics section

This must be attempted by all students and is a compulsory hand in.

Week beginning 6 March 2023

Fractions

A fraction is an expression that appears in the form:

a	=	Numerator
b		Denominator

Where:

- a is the Numerator
- and b is the Denominator *(can never be equal to zero)*

Proper fraction

Proper fraction is one in which the numerator is less than the denominator:

$\frac{1}{2}$ $\frac{5}{10}$

Improper fraction

Improper fraction is one in which the numerator is greater than the denominator:

$\frac{5}{2}$ $\frac{15}{10}$

Addition and subtraction of fractions with the same denominators.

Add and simplify

1. $\frac{1}{4} + \frac{2}{4}$

2. $\frac{3}{8} + \frac{5}{8}$

3. $\frac{3}{15} + \frac{7}{15}$

4. $\frac{5}{10} + \frac{6}{10}$

5. $\frac{5}{12} + \frac{9}{12}$

6. $\frac{6}{9} - \frac{1}{9}$

7. $\frac{12}{18} - \frac{6}{18}$

8. $\frac{24}{48} - \frac{12}{48}$

9. $\frac{13}{17} - \frac{6}{17}$

10. $\frac{8}{32} - \frac{4}{32}$

Addition and subtraction of fractions with different denominators.

1.	1/2	+	1/4	**6.**	6/9	-	2/27
2.	3/8	+	5/16	**7.**	12/25	-	6/15
3.	4/15	+	12/30	**8.**	4/12	-	2/16
4.	12/25	+	2/5	**9.**	3/4	-	6/24
5.	5/24	+	9/72	**10.**	8/13	-	4/52

Lowest common denominator (LCD) - smallest number into which the denominators will divide.

Lowest common multiple (LCM) -

1. TRUE / FALSE

For each of the following statements indicate whether they are True or False. Please provide a brief explanation if a statement is false.

1.1 Every financial transaction will always affect two or more general ledger accounts in a double manual or computerised accounting system.

1.2 The primary function of the general ledger is to summarize and store the effects of financial transactions by account classification and to provide a balance for each account.

1.3. Liabilities are claims outsiders have against the assets of a business and can consist of Creditors and bank overdraft.

1.4 Assets are normally recorded at historical cost for accounting purposes historical costs is subjective and market value is objective.

1.5 Expense accounts have debit balances that decrease owner's equity and it is associated with the production of income in the normal course of business operations.

1.6 A debit to dividend account would indicate an increase in operating expenses.

1.7 The purchase of property *(land)* for cash would cause the total assets to increase by the cost of the property.

1.8 Expenses recognised as a decrease in owner's equity in the statement of Comprehensive Income for the current year may not be matched with an equal amount of decrease in the bank account.

1.9 An asset is an expense controlled from a past transaction from which future economic benefits are expected to flow from the firm.

1.10 Liabilities is an amount owing to outsiders due to a present transaction, the repayment will result in an outflow of non-current assets from the firm.

1.11 Income is earned *(recognised)* when the goods have been delivered and the service provided that is when the risks and rewards of ownership is transferred from seller to purchaser.

1.12 Expenses are recognised when the services or/and assets are used up during the course of normal business operations.

1.13 Income is an increase in equity that will result in either in an increase in assets or an increase in liabilities.

1.14 Expenses increase on the debit side of the account and must therefore decrease on the credit side of the account.

1.15 Income increases on the debit side of the account.

1.16 Non-current assets can be split in to 4 categories, namely Property, plant and equipment, Financial assets, Investment property and Intangibles.

2. MATCHING QUESTIONS

Match each term with the appropriate definition by writing the appropriate letter in the space provided.

		Term		Definition
	2.1	Debit	(a)	A monthly statement listing all the accounts in General ledger with their respective debit and credit balances to verify the accurate posting *(test the equality of debits and credits)*
	2.2	Accounting cycle	(b)	Amount entered on the right side of the account.
	2.3	Books of prime entry	(c)	An amount entered on the left side of an account.
	2.4	Posting *(transfer)*	(d)	Where the order of the digits in a number is changed.
	2.5	General ledger	(e)	The process of transferring information recorded in the Subsidiary Journals to the individual accounts in the General Ledger.
	2.6	Trial balance	(f)	The sequence of accounting processes that has to take place during each accounting period.
	2.7	Credit	(g)	Subsidiary journals: First places where financial transactions are recorded.
	2.8	Transposition	(h)	A collection of or group of accounts with each account appearing on a separate each page. *(a formal summarised records of transactions during a period)*
			(i)	The side of an account on which increases are recorded.

3. MULTIPLE CHOICE QUESTIONS *(MCQ)*

Select the most correct answer.

3.1 The following are some of the procedures in the accounting cycle:

i) Post to the general ledger
ii) Extract a trial balance
iii) Record transaction on a source document
iv) Balance the general ledger accounts
v) Enter data in a special journal

The correct sequence of the procedures in the accounting cycle is:
(a) iii), v), i), iv), ii)
(b) ii), iv), i), v), iii)
(c) v), iii), ii), i), iv)
(d) iii), i), iv), ii), v)
(e) None of the above

3.2 Whenever asset and expense accounts are increased, the following should occur:

(a) Asset account debited, expense account credited.
(b) Asset account credited, expense account debited.
(c) Asset account credited, expense account credited.
(d) Asset account debited, expense account debited.
(e) None of the above are correct.

3.3 When a motor vehicle is purchased by a company on credit the following general journal entry will result:

(a) Debit Bank and Credit Motor Vehicles
(b) Debit Bank and Credit Accounts Payable
(c) Debit Motor Vehicles and Credit Bank
(d) Debit Motor Vehicles and Credit Accounts Payable
(e) None of the above

3.4 The following transactions were incurred by Masoka Traders during January 2021. *(The favourable bank balance at 1 January 2021 amounted to R600)*:

1. Cash sales for the month – R2 600.
2. Merchandise sold on credit to K. Mattheys – R600.
3. Received a cheque for Interest earned on an investment from PDE Bank – R400.
4. Paid creditor T. Moosa – R1 800 by cheque.
5. K. Mattheys returned damaged inventory – selling price R150.
6. Salaries paid by cheque – R2 000.
7. Merchandise purchased on credit from L. Lazarus – R4 000.
8. Masoka drew a business cheque for her own use – R700.

Which one of the following amounts represents the correct balance of the Bank account in the general ledger of Masoka Traders at 31 January 2021?

(a) R500 Dr
(b) R900 Cr
(c) R1 300 Cr
(d) R 1500 Cr
(e) None of the above

3.5 The following transactions occurred during the financial year ended 30 June 2021 in the accounting records of Jupiter CC.

Received a cheque for R4 000 from a debtor.
Paid R3 600 to a creditor by cheque.
Issued a cheque for payment of a machine R12 000.
Paid the month's rent by cheque, R4 000.

Which one of the following amounts represents the total effect of the above transactions on the owner's equity of the firm?

(a) + R4 000
(b) + R8 000
(c) + R3 600
(d) -R4 000
(e) + R4 400

3.6 Categorise the four items below as either Current or Long-term liabilities of a firm as at 31 December 2021, the end of the financial year. Choose an option that best categorises all four items.

Item	
i.	A bank loan repayable by the firm as a single lump sum on 31 March 2022.
ii.	An electricity account relating to November and December 2021 but unpaid at 31 December 2021 as the account was not received by the firm until 10 January 2022.
iii.	A bank loan repayable by the firm in full in 2026.
iv.	The current portion of a long-term loan payable in 2022. The loan was taken out on 1 January 2020 and is payable in 10 equal instalments.

	Item i	**Item ii**	**Item iii**	**Item iv**
(a)	Current	Current	Long term	Current
(b)	Current	Long term	Long term	Current
(c)	Long term	Current	Long term	Long term
(d)	Long term	Current	Long term	Current
(e)	Non-current	Non-current	Non-current	Current

3.7 The following information represents Geoconcepts Traders' assets and liabilities at 31 December:

	2021	2020
Land and buildings	R200 000	R150 000
Current assets	120 000	90 000
Current liabilities	90 000	70 000
Capital	?	?

No withdrawals or additional capital contribution were made by the owner during the year ended 31 December 2021.
The firm made a profit or loss for the year ended 31 December 2021 of:

(a) R60 000 *(loss)*
(b) R230 000 *(profit)*
(c) R60 000 *(profit)*
(d) R170 000 *(loss)*
(e) R170 000 *(profit)*

3.8 The Statement of Comprehensive Income (Income statement) forms a part of the following component of the accounting system:

(a) Process
(b) Source document
(c) Input
(d) Output
(e) Trial balance.

3.9 The Input component of the accounting system comprises the following:

(a) Cheques and receipts
(b) Source documents
(c) Invoices and adjustments
(d) Invoices and the accounting process
(e) The accounting process and the output.

3.10 The following unbalanced Bank account of TP Wholesalers is provided:

Bank account

Dec 1	Balance	16 000	Dec 3	Equipment	25 000
1	Capital	12 000	7	Wages expense	30 000
7	Debtors control	15 000	25	Rent expense	10 000
14	Sales income	20 000	31	Creditors	5 000

The balance in the bank account on 31 December 2020 would be:

(a) R70 000 *(debit balance)*
(b) R70 000 *(credit balance)*
(c) R7 000 *(credit balance)*
(d) R63 000 *(debit balance)*
(e) R7 000 *(debit balance)*

Question 4	**(marks: minutes)**

Part A	**(marks: minutes**

A list describing specific accounting concepts *(principles, terms)* as per Conceptual Framework *(IFRS)* is given below followed by a list of accounting terms:

a) Financial Information reported in the annual financial statements is free of measurement method bias.

b) The amount of cash or cash equivalents paid, or the fair market value of a liability incurred or other resources surrendered, to acquire an asset and place it in a condition and position ready for its intended use.

c) The information can be substantially duplicated by independent measurers using the same measurement methods.

d) When financial information contained in the annual financial statements improves users' ability to predict outcomes of events.

e) When financial information is pertinent or bears on a decision *(affects a decision)*.

f) The characteristics that accounting information should comply with to enhance the usefulness of financial information in economic decision making.

g) When financial information is provided soon enough after the Statement of Financial Position *(Balance sheet)* date, that it may be considered in economic decision-making.

h) When financial information faithfully depicts for users what it purports to represent.

i) Requires a company to use the same accounting principles and reporting practices through time.

j) When reported differences and similarities in information are real and not the result of differing accounting treatments.

1.	Financial reporting objectives	**8.**	Relevance
2.	Qualitative characteristics	**9.**	Feedback value
3.	Predictive value	**10.**	Reliability
4.	Timeliness	**11.**	Verifiability
5.	Representational faithfulness	**12.**	Comparability
6.	Neutrality	**13.**	Materiality
7.	Consistency	**14.**	Historical cost

YOU ARE REQUIRED TO:

Match each of the descriptive terms (a - j) with one of the terms as per Conceptual Framework *(IFRS)* in (1 - 14).

Part B	**(marks: minutes**

Listed below are several statements that relate to financial accounting and reporting. Identify the basic assumption, broad accounting principle or pervasive constraint that applies to each statement.

i) N. Sokopo is the sole owner of Sokopo's Appliances. Nikita borrowed R100 000 to buy a new home to be used as his personal residence. The liability was not recorded in the records of Sokopo's Appliances.
ii) Switchsung Computer distributes annual reports to its shareholders.
iii) FT Ltd depreciates plant and machinery over their estimated useful lives.
iv) The Residential Group Ltd lists land on its Statement of Financial Position *(Balance sheet)* at R320 000, its original purchase price, even though the land has a current market value of R1 340 000.
v) The Honeywell records income when products are delivered to customers, even though the cash has not yet been received.
vi) Liquidation values are not normally reported in the financial statements, even though many companies may go out of business in the future.
vii) GBH Ltd a company with an annual turnover in excess of R40 billion purchased a small set of tools at a cost of R800. Even though the tools will be used for a number of years, the company recorded the purchase as an expense.

QUESTION 5	

Identify the transaction relevant to each of the source documents below *(the transaction must also state the Subsidiary journal and the two accounts that would be affected)*:

	Source document	**Transaction**	**Subsidiary Journal**	**Two accounts**
Ex. 1.	***Cheque counterfoil***	***Payments made by cheque and Electronic Financial Transfer (EFT).***	***Cash Payments Journal (CPJ)***	***Salaries and wages Bank and Stationery expense Bank***
2.	Duplicate receipt			
3.	Duplicate invoice			
4.	Original invoice			
5.	Petty cash voucher			
6.	General journal voucher			
7.	Original credit note			
8.	Duplicate credit note			

QUESTION 6

Classify the following items as either assets, liabilities, income or expenses by placing a tick in the appropriate box:

						Owners' equity	
		Assets		**Liabilities**		***Income***	***Expenses***
		Non-current assets	**Current assets**	**Non-current liabilities**	**Current liabilities**		
1.	Bank *(favourable balance)*						
2.	Bank *(unfavourable balance)*						
3.	Buildings						
4.	Depreciation						
5.	Rent expense						
6.	Trading stock *(inventory)*						
7.	Transport costs *(carriage Inwards)*						
8.	Repairs expense						
9.	Services rendered / income						
10.	Client income						
11.	Sales income						
12.	Salaries and wages						
13.	Water and electricity						
14.	Trade receivables *(Debtors)*						
15.	Interest income						
16.	Mortgage on land and buildings						
17.	Investment						
18.	Interest expense						
19.	Vehicles						
20.	Stationery expense						
21.	Interest on fixed deposit						
22.	Rates and taxes						
23.	Equipment						
24	Trade payables *(Creditors)*						
25.	Bank overdraft						
26.	Bad debts						
27.	Land						
28.	Fixed deposit						

QUESTION 7

Source: Flynn, D: "Understanding Finance & Accounting"; Revised 3rd edition; LexisNexis; 2009.

3.10

Nadia Sereng registered a company investing R500 000 in exchange for 250 000 ordinary *(Class A)* shares of R2 each. The money was deposited into a bank account in the name of the company. The objective of the company was to trade *(buy and sell)* a unique product *"jaks"*.

1. Negotiated a 12% loan of R200 000 from Coronation Bank.
2. Purchased equipment for cash: R126 700.
3. Purchased a vehicle on credit from Orbit Motors for R189 000.
4. Purchased stocks of jaks and paid by cheque: R168 000.
5. Purchased and used stationery, cleaning materials and packaging equipment paid for by cheque for R27 000.
6. Paid rent for premises for the month R9 000 by cheque.
7. Sold jaks with a cost of R78 000 for R110 000 cash.
8. Sold jaks with a cost of R70 000 for R94 000 on credit.
9. Paid general expenses such as electricity and telephone by cheque: R5 200.
10. Paid R14 000 on the account to Orbit Motors.
11. Debtors paid R20 000 off on their accounts.
12. Paid herself and her assistant their salaries for the month: R14 200.

YOU ARE REQUIRED TO:

(a) List the transactions and show the impact of each in the table below.

Number	ASSETS	=	OWNER'S EQUITY	+	LIABILITIES

(b) Record the transactions into only 3 General Ledger accounts using the following format:

Number	ASSETS		=	OWNER'S EQUITY		+	LIABILITIES	
	+ Dr	- Cr		- Dr	+ Cr		-Dr	+ Cr

(c) Using a full set of General ledger accounts to record the amounts in the correct accounts.

(d) Balance the accounts above, and extract a Trial Balance at the end of the month.

Optional: students may attempt this part

(e) Record all the transactions into 3-column ledger accounts, including the dates and details.

Question 8

8.1

1 Mrs X decided to open her own bookshop *(sole proprietorship)*. She contributed a personal cheque R50 000 to the business.
2. Purchased two motorbikes and paid R20 000 by cheque.
3. Purchased a desk, chairs and a computer on credit. They cost R15 000 and has not yet been paid for.
4. Purchased 100 books at R100 each to sell as inventory and paid by cheque.
5. Borrowed R20 000 from AB Bank at an interest rate of 12.5 % per annum.

YOU ARE REQUIRED TO:

a) Enter all the transactions in the general journal.

b) Post all the transactions to the general ledger accounts.

ASSETS		=	OWNER'S EQUITY		+	LIABILITIES	
+ Dr	- Cr		- Dr	+ Cr		-Dr	+ Cr

8.2 Study the documents of Rondebosch Student Wear Traders and answer the questions below.

(1)

Capital contribution

No 1

Rondebosch Student Wear Traders
Receipt

25 March 2021

Received from: Management student *(owner)*
Sum of: Five thousand rand only

R5 000

In payment of Capital contribution

Cash	Cheque
	✓

With Thanks

(2)

Cash sales

Rondebosch Student Wear Traders
Cash Slip

26 March 2021

	R135
	R215
Total	R350
Amount tendered	R400
Change	R 50

With thanks

Tax invoice issued to a customer (3)

Credit sales

003

Rondebosch Student Wear Traders
Invoice

28 March 2021

To: Management student (ACC 1004W)
(Account number: 1000 251 375)

Quantity	Description	Unit price	Trade discount	Total
25	Jackets	R200		R5 000
30	Shirts	R100	25 %	2 250
				R7 250

Tax invoice received from a supplier (4)

Credit purchases

008

AC Abdulla Office Suppliers
Invoice

29 March 2021

To: Rondebosch Student Wear Traders

Quantity	Description	Unit price	Trade discount	Total
2	Desks	R500	20 %	R800
4	Office chairs	R600		2 400
				R3 200

(5)

Cheque counterfoil

DATE:		
TO:		
FOR:		
Balance		
Amount paid in		
Balance		
Other debits		
Balance		
This cheque		
Balance		
0001 026509 073086479		

Cheque issued to Supplier of goods and services

THE FIRST NATIONAL BANK OF SOUTH AFRICA
CAPE TOWN

15 April 2021

Pay PC Mason Office Supplies Or Bearer
Betaal of
Toonder

The sum of: *One thousand five hundred rand only*
Die som van:

R1 500

Owner's signature

.....

0001 026509 073086479

Cheque number	Branch code	Account number		Cheque number	Branch code	Account number

YOU ARE REQUIRED TO:

a) State what the above documents *(1 to 5)* are called?

b) In document 3 *(Invoice issued)* we issued an invoice to a customer. What is the correct accounting term for this customer?

c) In document 4 *(Invoice received)* we received an invoice from a supplier a customer. What is the correct accounting term for this supplier?

d) Analyse the above transactions *(source documents 1 to 5)* in terms of the accounting equation:

ASSETS		=	OWNER'S EQUITY		+	LIABILITIES	
+ Dr	- Cr		- Dr	+ Cr		-Dr	+ Cr

Question 9	Complete solution

Joe Blogg, is the sole owner of a dry-cleaning business called Good 'n Clean which has been in operation since 1 January 2015. The business operates from a shop in Main Road Rondebosch and also provides a *"collect and drop"* service to its clients. It also buys and sells detergents and fabric softeners to customers.

Trial Balance of Good n' Clean as at 30 November 2021.

	Dr	Cr
	R	R
Statement of Financial Position *(Balance sheet)* section		
Bank	6 000	
Share Capital *(1 January 2021)*		29 500
Vehicles	22 000	
Machinery	50 000	
Accounts receivable / debtors	1 400	
Accounts payable / creditors		740
Inventory	2 500	
Nominal account section *(income statement section)*		
Sales income		80 000
Cost of sales expense	40 000	
Service income		15 660
Consumable stores expense	250	
Advertising expense	140	
Rent expense	3 000	
Telephone expense	310	
Stationery expense	300	
	R125 900	**R125 900**

Transactions for December 2021:

1 Joe Blogg increased his capital contribution by depositing a further R2 000 into the firm's bank account.
2 Received a cheque from P. Platt for R165 in full settlement of his account.
3 Bought carbon-tetrachloride and other chemicals from Chemko and issued a cheque for R210.
4 S. Scott, a debtor, sent us a cheque for R235 in settlement of his account.
5 We purchased stationery from paperbacks and paid by cheque, R155.
6 Cash takings from services rendered to a client, R578.
7 Performed services on behalf of the following clients on credit:
   - P. Platt R65
   - S. Scott R47
8 Bought new machinery from Machines R Us, R2 300 and paid by cheque.
9 Paid the telephone account of R120 by cheque.
10 Received a statement of account from Adverts Incorporated for advertising done on our behalf, R355.
11 A debtor, B. Brett, sent us a cheque for R900 in full settlement of his account.
12 Received the bank statement from Usury Bank detailing the following charges:
   - Service fees R250
   - Cash handling fees R126

YOU ARE REQUIRED TO:

a) Open the accounts in the General Ledger with the balances given on 1 December 2021.
b) Record all the transactions in the general journal.
c) Post the general journal to the general ledger.
d) Prepare a trial balance at 31 December 2021.
e) Prepare a Statement of Comprehensive Income *(income statement)* for the year ended 31 December 2021.
f) Prepare a Statement of Financial Position *(Balance sheet)* at 31 December 2021.

Question 9	**Complete solution**

(b) General Journal of Good n' Clean – December 2021

		Name of accounts	Fol.	Dr	Cr
1.	Dr	Bank (+CA)		2 000	
	Cr	Share Capital (+E)			2 000
2.	Dr	Bank (+CA)		165	
	Cr	Debtors/Accounts receivable *(D. Platt)* (-CA)			165
3.	Dr	Consumable stores expense(-E)		210	
	Cr	Bank (-CA)			210
4.	Dr	Bank (+CA)		235	
	Cr	Debtors/Accounts receivable *(S. Scott)* (-CA)			235
5.	Dr	Stationery expense (-E)		155	
	Cr	Bank (-CA)			155
6.	Dr	Bank (+CA)		578	
	Cr	Service income (+E)			578
7.	Dr	Accounts receivable (+CA)		112	
	Cr	Service income (+E)			112
8.	Dr	Machinery (+NCA)		2 300	
	Cr	Bank (-CA)			2 300
9.	Dr	Telephone expense (-E)		120	
	Cr	Bank (-CA)			120
10.	Dr	Advertising expense (-E)		355	
	Cr	Bank (-CA)			355
11.	Dr	Bank (+CA)		900	
	Cr	Debtors/Accounts receivable *(B. Brett)* (-CA)			900
12.	Dr	Bank charges expense (R250+126) (-E)		376	
	Cr	Bank (-CA)			376

Key	Non-current assets	NCA
	Current assets	CA
	Equity	E
	Non-current liabilities	NCL
	Current liabilities	CL

a & c)

General Ledger of Good n' Clean

Dr **Cr**

Date	Name of other account	Fol.	Amount	Date	Name of other account	Fol.	Amount

Balance sheet *(Real)* accounts

Share Capital SOFP1

				Dec 12	Balance		29 500
				1	Bank		2 000
							31 500

Vehicles at cost SOFP2

Dec 1	Balance		**22 000**				

Machinery at cost SOFP3

Dec 1	Balance		50 000				
8	Bank		2 300				
			52 300				

Debtors control/Accounts receivable SOFP4

Dec 1	Balance		1 400	Dec 2	Bank		165
7	Fee income		112	4	Bank		235
				11	Bank		900
				31	Balance	c/d	212
			1 512				**1 512**
Jan 1	Balance	b/d	**212**				

Bank SOFP5

Dec 1	Balance		6 000	Dec 3	Consumables stores		210
1	Capital		2 000	5	Stationery		155
2	Debtors control		165	8	Machinery		2 300
4	Debtors control		235	9	Telephone		120
6	Fees received		578	12	Bank charges		376
11	Debtors control		900	31	Balance	c/d	6 717
			9 878				**9 878**
Jan 1	Balance	b/d	**6 717**				

Pencil totals Increase in bank R9 878 Decrease in bank R3 161

Inventory SOFP6

Dec 1	Balance		**2 500**				

Creditors control / Accounts payable SOFP7

				Dec 1	Balance		740
				10	Advertising		355
							1 095

Dr **Cr**

Date	Name of other account	Fol.	Amount	Date	Name of other account	Fol.	Amount

Nominal accounts *(income statement accounts from business operations)*

Sales income N1

				Dec 1	Balance		**80 000**

Cost of sales expense *(cost of goods sold)* N2

Dec 1	Balance		**40 000**				

Service income N1

				Dec 1	Balance		15 660
				6	Bank		578
				7	Debtors control		112
							16 350

Consumable stores expense N2

Dec 1	Balance	250	
3	Bank	210	
		460	

Advertising expense N3

Dec 1	Balance	140	
10	Creditors control	355	
		495	

Rent expense N4

Dec 1	Balance	**3 000**	

Telephone expense N5

Dec 1	Balance	310	
9	Bank	120	
		430	

Stationery expense N6

Dec 1	Balance	300	
5	Bank	155	
		455	

Bank charges expense N7

Dec 1	Balance	nil	
12	Bank	**376**	

Note: all the bold figures are transferred to the trial balance at 31 December 2021.

d)

Good 'n Clean
Trial Balance at 31 December 2021

Balance sheet accounts		**Dr**	**Cr**
		R	**R**
Share Capital	**SOFP1**		R31 500
Vehicles	**SOFP2**	R22 000	
Machinery	**SOFP3**	52 300	
Accounts receivable	**SOFP4**	212	
Bank	**SOFP5**	6 717	
Inventory	**SOFP6**	2 500	
Accounts payable	**SOFP7**		1 095
Nominal accounts *(Income statement)*			
Sales income	**N1**		80 000
Cost of sales expense	**N2**	40 000	
Service income	**N3**		16 350
Consumable stores expense	**N4**	460	
Advertising expense	**N5**	495	
Rent expense	**N6**	3 000	
Telephone expense	**N7**	430	
Stationery expense	**N8**	455	
Bank charges expense	**N9**	376	
		R128 945	**R128 945**

SOFP = Statement of financial position *(Balance sheet)*

e)

Good n' Clean
Statement of Comprehensive Income (Income statement) for the year ended 31 December 2021

	R	**R**
Sales income		80 000
Cost of sales expense		(40 000)
Gross profit		40 000
Add: Service income		16 350
Gross income		56 350
Less: Operating expenses		**(5 216)**
Consumable stores expense	460	
Advertising expense	495	
Rent expense	3 000	
Telephone expense	430	
Stationery expense	455	
Bank charges expense	376	
Net Profit transferred (added0 to retained earnings		**R51 134**

Statement of changes in equity for the year ended 31 December 2021

	Share Capital	Retained earnings
Opening balance at 1 January 2021	R29 500.00	
Add: Additional capital contribution	2 000.00	
Add: Net profit / (Loss) for the year from (I/S)		51 134.00
Less: Dividends / Drawings for year	(Nil)	
Closing balance at 31 December 2021	**R31 500.00**	**51 134.00**

f)

Good 'n Clean
Statement of financial position *(Balance sheet)* at 31 December 2021

	R	R	R
ASSETS			
Non Current assets *(Fixed assets)*			
Property plant and equipment	**Cost**	**Accumulated depreciation**	**Carrying value**
Vehicles	22 000		
Machinery	52 300		
	74 300		74 300
Current assets			9 429
Inventory		2 500	
Accounts receivable/debtors		212	
Cash at bank		6 717	
Total assets			**R83 729**
EQUITY AND LIABILITIES			
Owner's equity			82 634
Share capital		31 500	
Retained earnings		51 134	
(from statement of changes in equity)			
Non current liabilities			
Current liabilities			1 095
Accounts payables / creditors		1 095	
Total Equity and liabilities			**R83 729**

Students may disclose details of the Property, plant and equipment under non-current assets on the face of the statement of financial position or the details could have been provided in the following format which requires that only the total carrying value of R74 300 be reported on the face of the statement.

Property, plant & equipment

	Cost	Less	Accumulated depreciation	=	Carrying value
Vehicles	22 000				22 000
Machinery	52 300				52 300
	74 300				**74 300**

Question 10	**Check answers**

John Cobra, is the sole owner of a plumbing business called Isca Plumbing Services which he formed on 1 March 2019. The business operates from a shop and store room in Main Road, Bellville and in addition to providing plumbing services he also has a retail outlet that sells plumbing material to small plumbing contractors. The firm's financial year ends annually on 28 February.

Trial Balance of Isca Plumbing Services as at 31 January 2021.

	Dr	**Cr**
	R	**R**
Statement of Financial Position *(Balance sheet)* section		
Share capital *(1 March 2020)*		207 000
Loan		25 000
Vehicles	250 000	
Machinery	150 000	
Inventory	82 000	
Debtors	60 000	
Bank	56 000	
Creditors		38 000
Nominal account section *(income statement section)*		
Sales income		580 000
Cost of sales expense	290 000	
Service income		350 000
Consumable stores expense	16 000	
Salaries and wages expense	214 000	
Rent expense	27 500	
Telephone expense	16 500	
Water and electricity expense	22 000	
Stationery expense	16 000	
	R1 200 000	**R1 200 000**

Note:

The mark-up on cost on all goods sold is 100% on cost price and the business uses the perpetual inventory method. The business is not registered for Value Added Taxation (VAT).

Transactions for February 2021:

3. Paid Trafalgar Properties, the landlord, the sum of R2 300 for rental of the premises.
4. Bought computer equipment from Makro for R6 000 and paid by cheque.
6. Bought inventory from Cash and Carry to the value of R70 000 and paid by cheque.
10. Bought inventory on account from MM Wholesalers for R15 000.
    Sold goods on credit to a new client, M. Barends for R3 000 *(cost price ?)*.
11. Paid wages of R5 000 and R500 of stationery from CAN stationers and paid by two different cheques.
12. Returned unsatisfactory inventory *(not per original order)* to MM Wholesalers, R600 and received a credit note.
14. Cash sales for the two weeks ending 14 February 2021, R36 000 *(cost price ?)*.
15. Purchased stationery on account from Office Suppliers R700.
    Issued a business cheque for R1 600 to Telkom to pay the business telephone account.
18. M. Barends paid part of his account with a cheque of R2 000.

19. The owner took a business cheque for R600 for his own use.
20. M. Barends returned damaged goods, R500 *(cost price ?)* and we issued a credit note.
24. Issued a cheque to pay 40 % of the invoice received from MM Wholesalers on 10 February 2020.
25. Paid PG Glass for repairs to the shop window R900.
    Paid wages R5 500 by cheque.
28. Cash sales for two weeks ending 28 February 2020, R42 000 *(cost price ?)*.

YOU ARE REQUIRED TO:

a) Open the accounts in the General Ledger with the balances given on 1 February 2021.
b) Record all the transactions in the general journal.
c) Post the general journal to the general ledger.
d) Prepare a trial balance at 28 February 2021.
e) Prepare a Statement of Comprehensive Income (Income Statement) for the year ended 28 February 2021.
f) Prepare a Statement of Financial Position *(Balance sheet)* at 28 February 2021.

Question 10	**Check answers**

c and d

General ledger accounts	
▪ Balance of Inventory account at 28 February 2021	R126 150
▪ Balance of Bank account at 28 February 2021	R37 600
▪ Balance of Sales income account at 28 February 2021	R660 500
▪ Balance of Cost of sales expense account at 28 February 2021	R330 250
▪ Balance of Salaries and wages expense account at 28 February 2021	R224 500
▪ Balance of Rent expense account at 28 February 2021	R29 800

d) Trial balance

Trial balance balancing totals at 28 February 2021	R1 289 600

e) Income statement

Income statement	
Gross profit	R330 250
Total operating expenses	R328 500
Net profit	R351 750

f) Statement of financial position *(balance sheet)*

Statement of financial position	
Total assets	R630 250
Non-current liabilities	R25 000
Current liabilities	R47 100

Question 11

(Fundamental Accounting 7-7 : Page 131)

The following balances and totals appeared in the books of Young Beauty Salon on 30 November 2021 and relate to the trading activities of the firm for the period 1 January 2021 to 30 November 2021:

	Dr	Cr
	R	R
Share capital (*1 January 2021)*		46 450.90
Land and buildings	85 000.00	
Equipment	20 144.50	
Inventory		
Bank	898.60	
Creditors		19 600
Sales income		250 000
Cost of sales expense	200 000	
Service income		19 506.50
Consumable stores expense	1 480.70	
Salaries expense	8 433.60	
Water and electricity expense	18 500.00	
Telephone expense	1 100.00	
	R335 557.40	**R335 557.40**

The business's financial year ends annually on 31 December. **For the month of December 2021 Young Beauty Salon entered into the following transactions:**

1 Drew a cheque no. 125 to pay the rent for December 2021 to Kindo Properties, R500.
Received a cheque for R10 000 from the owner as additional capital. Issued receipt 06.
4 Bought new equipment for the office from Manzini Shopfitters and paid by cheque, R4 720.80.
6 Service income earned according to the cash register roll, R4 010.35.
7 Purchased consumable stores on credit from Tait Ltd for R1 210.24.
12 Fees for services rendered, according to cash register roll, R5 860.44.
14 The owner increased his share capital with a cheque of R7 000. Issued receipt 07.
15 Issued a cheque to pay for consumable stores bought from Tait Ltd R640.89.
18 Cash banked *(service fees)* R3 215.13.
22 Bought a vehicle from Park Motors and paid by cheque, R18 700.
23 Services rendered, R4 000 and received cash from the clients.
27 Paid the following by cheque:

Salaries:	J Long	R3 685.85
	P Koen	R3 715.05
Water and electricity		R 312.90
Telephone		R 279.58

31 Cash received for services rendered, R6 300.23.

YOU ARE REQUIRED TO:

a) Open the accounts in the General Ledger with the balances given on the 1 December 2021.
b) Record all the transactions in the GENERAL JOURNAL AND POST TO THE GENERAL LEDGER.
c) Prepare a Trial balance at 31 December 2021.
d) Prepare a Statement of Comprehensive Income *(Income Statement)* for the year ended 31 December 2021.
e) Prepare a Statement of Financial Position *(Balance sheet)* at 31 December 2021.

MANAGERIAL FINANCE (FTX1005F)
TUTORIAL 4
END OF PERIOD ADJUSTMENTS AND ANNUAL FINANCIAL STATEMENTS
HAND IN DATE: Monday 13 March 2023

Mathematics section
This must be attempted by all students and is a compulsory hand in.
Week beginning 13 March 2023
Fractions

Multiplication and division of fractions:

Multiplication
We simply multiply the numerators to obtain a new numerator and multiply the denominator to obtain a new denominator.

Subtraction
When dividing one fraction with a second fraction simply invert the second fraction and multiply by the first.

1. $\frac{1}{2} \times \frac{1}{4}$

2. $\frac{3}{8} \times \frac{5}{16}$

3. $\frac{4}{15} \times \frac{12}{30}$

4. $\frac{12}{25} \times \frac{2}{5}$

5. $\frac{5}{24} \times \frac{9}{72}$

6. $\frac{6}{9} \div \frac{2}{27}$

7. $\frac{12}{25} \div \frac{6}{15}$

8. $\frac{4}{12} \div \frac{2}{16}$

9. $\frac{3}{4} \div \frac{6}{24}$

10. $\frac{8}{13} \div \frac{4}{52}$

1. TRUE / FALSE

For each of the following statements indicate whether they are True or False. Please provide a brief explanation if a statement is false.

1.1 Adjusting general journal entries are usually prepared prior to the preparation of annual financial reports.

1.2 Transactions overlap financial reporting periods.

1.3 An expense may only be recognised and recorded if a cash payment has been made.

1.4 All year-end adjustments have an effect on the Bank account.

1.5 Total assets minus total liabilities equals to net income.

1.6 Under the cash basis of accounting, revenue is recognized in the period in which cash is received and not in the period in which the services were performed.

1.7 Costs that have been incurred for the purpose of generating revenue during the current period are sometimes called expired costs.

1.8 The underlying accounting assumption that states that the financial statements will be prepared as if the firm will continue to operate in the future is called the going-concern assumption *(concept)*.

1.9 The accounts called interest revenue, interest expense, and interest payable are examples of temporary *(or nominal)* accounts.

1.10 Prepaid insurance is an example of accrued revenue.

1.11 Wages paid in advance on 31 December 2021 for January 2022 would be classified by the employer as an Accrued wages expense a current liability.

1.12 Sometimes prepaid items are initially recorded in an expense account, and sometimes they are initially recorded in an asset account. In either event, the same adjusting entry is required at year-end.

1.13 Determination of depreciation expense is an inexact process because the accountant must estimate the expected useful economic life of the non-current asset.

1.14 Unearned income *(deferred income/income received in advance)* is shown on the statement of financial position *(balance sheet)* at year-end as an asset.

1.15 A current asset is cash or other asset likely to be converted to cash, sold, or used upon within one year of the Statement of Financial Position *(Balance sheet)* date or the operating cycle of the business, whichever is shorter.

1.16 A general ledger account called Accumulated depreciation is often found on the Statement of Financial Position *(balance sheet)*. This account is an example of a <u>negative asset</u> account.

1.17 The following are all examples of Operating expenses recognised in year-end adjusting entries: advertising, salaries, interest, insurance and dividends declared.

1.18 The effect on net profit would be overstated if the adjusting entry for interest income earned but not yet received at the year-end was omitted.

2. MATCHING QUESTIONS

Match each term with the appropriate definition by writing the appropriate letter in the space provided.

		Term		Definition
	2.1	Matching principle	(a)	A trial balance prepared from the General ledger after all adjusting entries have been recorded and posted.
	2.2	Adjusting entries	(b)	An expense that was paid in cash in the current year but only used in the following financial year.
	2.3	Accruals	(c)	Portion of a non-current asset's cost that is allocated as an annual expense.
	2.4	Liquidity	(d)	The total amount of depreciation that has been recorded since acquisition.
	2.5	Depreciation	(e)	Cash received in the current year but will only be recognised as income in the following financial year when the service or goods are provided.
	2.6	Accumulated depreciation	(f)	The ability of a business to repay its short term obligations in cash.
	2.7	Prepaid expense	(g)	An expense that has been incurred not yet recorded or income that has been earned not yet recorded.
	2.8	Income received in advance	(h)	The process of pairing income earned with all the expenses incurred to earn that income.
			(i)	General Journal entries recorded at the end of the financial year to record and update account balances in the Pre-adjustment trial balance.

3. MULTIPLE CHOICE QUESTIONS *(MCQ)*

Select the most correct answer.

3.1 The end-of period adjusting entries for revenues and expense accounts do not affect:

(a) The current asset accounts
(b) The cash account
(c) The current liability accounts
(d) The retained income account
(e) None of the above

3.2 On 1st January 2021 a firm whose financial year ends on 31 December each year, rented premises from Landtrust Ltd at a cost of R20 000 per annum, payable quarterly in arrears. Four payments, each of R5 000 were made on 1 April 2021, 2 July 2021, 3 October 2021 and on 5 January 2022.

The rent expense figure in the pre-adjustment trial balance at 31 December 2021 should be;

(a) R20 000
(b) R25 000
(c) R15 000
(d) R60 000
(e) Some other amount *(specify)*

3.3 Assets would be overstated if the required end-of-period adjusting entry was omitted for:

(a) Salaries payable
(b) Depreciation expense
(c) Unearned subscription income
(d) Accrued income
(e) None of the above

3.4 The end of period adjustment for accrued salaries:

(a) Decrease assets and increase owner's equity
(b) Increase owner's equity and decrease liabilities
(c) Decrease owner's equity and increase liabilities
(d) Increase assets and increase liabilities
(e) None of the above

3.5 What is the purpose of the following General journal entry?

Dr	Supplies on hand	XXXX	
Cr	Supplies expense		XXXX

(a) To recognise supplies used, if purchases of supplies are recorded in supplies.
(b) To recognise supplies on hand a current asset *(unused at the end of the financial year)*, if purchases of supplies are recorded in supplies expense at the time of purchase.
(c) To record the purchase of supplies during or at the end of the period.
(d) To close the supplies expense account for supplies at the end of the period.
(e) None of the above

3.6 The following information was extracted from the pre-adjustment trial balance and post-adjustment trial balance of Varsity Stores:

	Pre-adjustment trial balance		***Post adjustment trial balance***	
	Dr	***Cr***	***Dr***	***Cr***
Rent expense	R12 000		R11 500	
Wages accrued				3 000
Consumable stores expense	3 500		1 600	

The adjusting general journal entries must have included these items:

(a) A R500 debit to rent expense, a R3 000 debit to wages expense and a R 1 900 debit to consumable stores expense.

(b) A R500 debit to rent expense, a R3 000 credit to wages accrued and a R 1 900 debit to consumable stores on hand account (asset account).

(c) A R500 debit to rent prepaid, a R3 000 credit to wages accrued and a R1 900 debit to consumable stores on hand account *(asset account)*.

(d) A R500 credit to rent expense, a R3 000 debit to wages accrued and a R 1 900 credit to consumable stores expense.

(e) None of the above

3.7 HRS Ltd acquired a machine for R2 750 000. The company policy is to depreciate all machinery at a rate of 10% per annum on the reducing balance method. At the end of year 3 the carrying value of the machine is:

(a) R1 925 000
(b) R2 004 750
(c) R2 227 500
(d) R2 475 000
(e) R2 750 000

3.8 A motor vehicle purchased for R64 000 is depreciated using the reducing balance method at 20% per annum. The amount that will be credited to the Accumulated depreciation on vehicles account at the end of the second year is:

(a) R0, as there is no entry to this account
(b) R12 800
(c) R25 600
(d) R23 040
(e) R10 240.

3.9 On 31 December 2021 earned by employees but unpaid amounted to R15 000. What general journal entry should be recorded on 31 December 2021?

(a)	Dr	Wages expense	R15 000	
	Cr	Wages payable		R15 000
(b)	Dr	Prepaid wages	R15 000	
	Cr	Wages expense		R15 000
(c)	Dr	Wages expense	R15 000	
	Cr	Prepaid wages		R15 000
(d)	Dr	Wages payable	R15 000	
	Cr	Wages expense		R15 000

3.10 A 2-year insurance policy was purchased on 1 July 2021 for R9 000 and insurance expense was debited and bank credited. Assuming a 31 December financial year-end, what is the general journal entry at 31 December 2021 to bring into account the insurance amount used up for the year?

(a)		None is required		
(b)	Dr	Bank	R2 250	
	Cr	Prepaid insurance		R2 250
(c)	Dr	Insurance expense	R2 250	
	Cr	Insurance expense		R2 250
(d)	Dr	Prepaid insurance	R6 750	
	Cr	Insurance expenses		R6 750

Question 4	Complete solution

Helen Broadsack, started "Helen's Movie Productions" a small video production company and video retail outlet some years ago. The organisation has recently had a year-end and she is at a loss as to what adjustments should be made, and how to complete the income statement and Statement of Financial Position *(Balance sheet)*.

The Pre – adjustment trial balance for the year ended 31 March 2021 is as follows:

	Dr	Cr
	R	R
Capital account *(1 April 2020)*		83 400
Drawings	18 000	
Long term liabilities		450 000
Camera equipment at cost	200 000	
Vehicle at cost	240 000	
Accumulated depreciation: camera equipment		60 000
motor vehicles		96 000
Trade receivables (Debtors) *(Accounts receivable)*	30 000	
Trade payables (Creditors) *(Accounts payable)*		114 500
Cash in bank	3 500	
Investment: fixed deposit	50 000	
Production fees income		19 150
Video sales income		40 000
Interest income *(on fixed deposit)*		2 500
Purchases	37 000	
Inventory *(1 April 2020)*	22 000	
Salaries expense	120 000	
Interest expense	13 500	
Office expense	60 000	
Motor vehicle expense	32 000	
Insurance expense	32 400	
Telephone expense	7 150	
	R865 550	**R865 550**

Note that this business uses the periodic inventory method.

You are given the following additional information:

1. The loan is at 12% per annum. Interest has been paid for the period from 1 April 2019 to 30 June 2020. The balance is still due. The capital *(principal)* value of the loan has not changed during the year.

2. A physical stock *(inventory)* count on 31 March 2021 revealed a closing inventory of R21 000.

3. R2 000 of the production fees received is a down-payment on work that will only start in late April 2021.

4. The Motor vehicles must be depreciated for the year at 20% p.a. on cost and the Equipment at 15% p.a. on the reducing balance method.

5. The credit manager felt that debtor who owed R1 500 account should be written off as bad.

6. R10 000 of the motor vehicle expense is for the repair of Alain, Helen's husband's vehicle.

7. The firm had not yet paid the telephone account for March 2021 and decided to estimate the amount used for March 2021 using the previous 11 months payments.

8. Insurance premiums are paid in one lump sum on 30 September each year and are in respect of the period 1 October 2020 to 30 September 2021.

9. The fixed deposit was made on 1 April 2020 and earns an interest of 10 % per annum.
   Provide for the interest outstanding at 31 March 2021.

YOU ARE REQUIRED TO:

a) Prepare the general journal entries that are necessary to bring into account the adjustments for the above points 1 to 9.

(16 marks)

b) Post the general journal entries in (a) above to the general ledger.

c) Complete the Statement of Comprehensive Income *(Income statement) (after taking into account all the adjustments above)* for the year ended 31 March 2021.

(19 marks)

d) Statement of Financial Position *(Balance sheet)* at 31 March 2021 of *"Helen's Productions".*

(18 marks)

Question 4	Complete solution

a)

General Journal of Helen's Movie Productions – March 2021

		Name of account	Fol.		
1.	Dr	Interest expense (–E)		40 500	
	Cr	Accrued expense (+CL)			40 500
		(*R450 000 x 12%) – 13 500 = R40 500 or* *(R450 000 x 12% x 9/12) = R40 500*			
2.	Dr	No entry			
	Cr				
3.	Dr	Production fees income (-E)		2 000	
	Cr	Income received in advance (+CL)			2 000
4.	Dr	Depreciation expense (-E)		48 000	
	Cr	Accumulated depreciation: vehicles (-A)			48 000
		(R240 000 x 20%)			
	Dr	Depreciation expense (-E)		21 000	
	Cr	Accumulated depreciation: camera equipment (-A)			21 000
		(R200 000 – 60 000) x 15%			
5.	Dr	Bad debts expense (-E)		1 500	
	Cr	Accounts receivable (-CA)			1 500
6.	Dr	Drawings (-E)		10 000	
	Cr	Motor vehicle expenses (+E)			10 000
7.	Dr	Telephone expense (-E)		650	
	Cr	Accrued expenses (+CL)			650
`		*(R7 150/11)*			
8.	Dr	Prepaid insurance (+CA)		16 200	
	Cr	Insurance expense (+E)			16 200
		(R32 400/2)			
9.	Dr	Accrued income (+CA)		2 500	
	Cr	Interest income (+E)			2 500
		(R50 000 x 10 % x 6/12)			

b) General ledger of Helen's Movie Productions

We have only provided the new general ledger accounts that have been opened as a result of the end of year adjustments and those *(appearing in the Pre-adjustment trial balance)* that were affected by the end of year adjustments.

1 & 7.

Interest expense N (E)

Mar 31	Balance **(Pre- Adj TB)**	13 500	Mar 31	*Profit & loss **(IS)***	*54 000*
	Accrued expense	40 500			
		54 000			**54 000**

Accrued expense SOFP B (CL)

			Mar 31	Interest expense	40 500
				Telephone expense	650
					41 150

2. No entry

3.

Production fee income N (E)

Mar 31	Income received in advance	2 000	Mar 31	Balance **(Pre- Adj TB)**	19 150
	*Profit & loss **(IS)***	*17 150*			
		19 150			**19 150**

Income received in advance *(Unearned income)* SOFP B (CL)

			Mar 31	Production fee income	2 000

4.

Depreciation expense N (E)

Mar 31	Accumulated depreciation: Vehicles	48 000	Mar 31	*Profit & loss **(IS)***	*69 000*
	Camera equipment	21 000			
		69 000			**69 000**

Accumulated depreciation: Vehicles SOFP B (negative asset)

			Mar 31	Balance **(Pre- Adj TB)**	96 000
				Depreciation expense	48 000
					144 000

Accumulated depreciation: Camera equipment SOFP B (negative asset)

			Mar 31	Balance **(Pre- Adj TB)**	60 000
				Depreciation expense	21 000
					81 000

5.

Accounts receivable SOFP B (CA)

Mar 31	Balance **(Pre- Adj TB)**	30 000	Mar 31	*Bad debts expense*	*1 500*
					28 500
		30 000			**30 000**

Bad debts expense N (E)

Mar 31	Balance **(Pre- Adj TB)**	0	Mar 31	*Profit & loss **(IS)***	*1 500*
	Accounts receivable	1 500			
		1 500			**1 500**

6.

Drawings SOFP B (E)

Mar 31	Balance **(Pre- Adj TB)**	18 000
	Motor vehicle expense	10 000
		28 000

Motor vehicle expense N (E)

Mar 31	Balance **(Pre- Adj TB)**	32 000	Mar 31	Drawings	10 000
				*Profit & loss **(IS)***	*22 000*
		32 000			**32 000**

7.

Telephone expense N (E)

Mar 31	Balance **(Pre- Adj TB)**	7 150	Mar 31		
	Accrued expense	650		*Profit & loss **(IS)***	*7 800*
		7 800			**7 800**

8.

Prepaid insurance SOFP B (CA)

Mar 31	Insurance expense	16 200

Insurance expense N (E)

Mar 31	Balance **(Pre- Adj TB)**	32 400	Mar 31	Prepaid insurance	16 200
				*Profit & loss **(IS)***	*16 200*
		32 400			**32 400**

9.

Accrued income SOFP B (CA)

Mar 31	Interest income	2 500			

Interest income N (E)

Mar 31			Balance **(Pre- Adj TB)**		2 500
	*Profit & loss **(IS)***	*5 000*	*Accrued income*		*2 500*
		5 000			**5 000**

Key

CA	Current asset	E	Equity *(owner's net worth)*
CL	Current liability	N	Nominal accounts *(Income statement accounts)*
SOFP / B	Statement of Financial Position *(Balance sheet)* accounts		

The Post – adjustment trial balance for the year ended 31 March 2021 is as follows:

	Dr	**Dr**
Capital account *(1 April 2020)*		83 400
Drawings (R18 000 + 10 000)	28 000	
Camera equipment at cost	200 000	
Vehicle at cost	240 000	
Long term liabilities		450 000
Inventory *(1 April 2019)*	22 000	
Trade receivables (Debtors)	28 500	
Trade payables (Creditors)		114 500
Cash in bank	3 500	
Investment: Fixed deposit	50 000	
Accumulated Depreciation:		
Camera equipment (R60 000 + 21 000)		81 000
Motor vehicles (R96 000 + 48 000)		144 000
Accrued expenses: Interest		*40 500*
Telephone		*650*
Income received in advance		*2 000*
Prepaid insurance	*16 200*	
Accrued income	*2 500*	
Sales income		40 000
Purchases	37 000	
Carriage inwards	xxxxx	
Production fees (R19 150 – 2 000)		17 150
Interest income (R2 500 + 2 500)		5 000
Interest expense (R13 500 + 40 500)	54 000	
Depreciation: Vehicles (R240 000 x 20%)	48 000	
Camera equipment (R200 000 – 60 000) x 15%	21 000	
Bad debts expense	1 500	
Motor vehicle expenses (R32 000 – 10 000)	22 000	
Telephone expense (R7 150 + 650)	7 800	
Insurance expense (R32 400 – 16 200)	16 200	
Salaries expense	120 000	
Office expense	60 000	
	R978 200	**R978 200**

c)

Helen's Movie Productions

Statement of Comprehensive Income *(Income statement)* for the year ended 31 March 2021

	R	R
Sales		40 000
Less: Cost of sales		38 000
Opening inventory at 1 April 2020	22 000	
Add: Purchases	37 000	
Carriage inwards	Xxxxx	
Cost of goods available for sale	59 000	
Less: Closing inventory at 31 March 2021	(21 000)	
Gross profit		2 000
Add: Other income		
Production fees (R19 150 – 2 000)		17 150
Interest income (R2 500 + 2 500)		5 000
Gross income		24 150
Less; Operating expenses		350 500
Interest expense (R13 500 + 40 500)		54 000
Depreciation: Vehicles (R240 000 x 20%)		48 000
(R200 000 – 60 000) x 15%		21 000
Motor vehicle expenses (R32 000 – 10 000)		22 000
Bad debts expense (R1 500)		1 500
Telephone expense (R7 150 + 650)		7 800
Insurance expense (R32 400 – 16 200)		16 200
Salaries expense		120 000
Office expense		60 000
Net loss		**(R326 350)**

d)

Helen's Movie Productions

Statement of Financial Position *(Balance sheet)* at 31 March 2021

ASSETS			
Non-current assets (Fixed assets)	**Cost**	**Acc depn**	**Carrying value (NBV)**
Vehicles	240 000	144 000	96 000
Camera equipment	200 000	81 000	119 000
	440 000	225 000	215 000
Investments : Fixed deposit			50 000
Current Assets			71 700
Inventory			21 000
Trade receivables (Debtors) (R30 000 – 1 500)			28 500
Prepaid expense			16 200
Accrued income			2 500
Bank			3 500
			R336 700
EQUITY AND LIABILITIES			
Owner' equity			
Capital			(270 950)
Opening balance			83 400
Add: Net loss			(326 350)
			(242 950)
Less: Drawings			(28 000)
Non-current liabilities (Long term liabilities)			450 000
Current liabilities			157 650
Trade payables (Creditors)			114 500
Income received in advance			2 000
Accrued expenses: *(R40 500 + 650)*			41 150
			R336 700

Question 5	Check answers
	(Fundamental Accounting: 15.15: Page 423: Adapted)

The following information was extracted from the accounting records of Palooka Industries at 30 June 2021:

	Dr	Cr
	R	R
Capital		171 480
Mortgage loan (12% p.a.)		25 000
Accounts payable		45 750
Land and buildings	109 000	
Fixtures and fittings	7 000	
Vehicles	60 000	
Accumulated depreciation: vehicles		15 000
Accumulated depreciation: Fixtures and fittings		2 520
Inventory *(1 July 2020)*	50 000	
Investment: Fixed deposit	18 600	
Trade receivables (Debtors) Accounts receivable	41 000	
Cash at bank	7 000	
Sales income		270 000
Rental income		1 200
Interest income		400
Purchases	161 500	
Carriage inwards	3 000	
Advertising expense	4 900	
Insurance expense	2 500	
Administration expense	17 300	
Water and electricity expense	4 000	
Rates expense	4 800	
Wages expense	38 500	
Interest expense	2 250	
	R531 350	**R531 350**

Note that this business uses the periodic inventory method.

Information relating to year-end adjustments is as follows*:*

i) Interest earned on the fixed deposit but not yet received is R620.
ii) Advertising includes a payment of R3 120 made to the Athlone Tribune for a series of 52 weekly advertisements to be published from 1 January 2021. At 30 June 2021, 30 advertisements had been placed in the magazine.
iii) The insurance expense accounts reflect payments in respect of the following:

Policy Number	Annual premium	Period of Policy
Policy X for motor vehicles	R1 500	1.3.2021 to 28.2.2022
Policy Y *(comprehensive)*	R1 000	1.7.2020 to 30.6.2021

iv) Wages earned by employees but unpaid by 30 June 2020 totalled R700.

v) On 1 September 2020, Palooka Industries let a portion of its premises for 12 months and received a cheque for R1 200 representing the entire year's rent.

vi) Interest on the mortgage loan is payable quarterly in arrears on the first day of January, April, July and October. The loan was negotiated on 1 December 2021 and there have been no repayments of the capital sum.

vii) Depreciation must be provided as follows:
- Vehicles 10% p.a. on the cost price method; and
- Fixtures and fittings at 15% p.a. on the reducing balance method

viii) Inventory on hand according to a physical count at 30 June 2021 was R39 200.

ix) A debtor who owed Palooka Industries R1 640 was untraceable and his debt must be written off as bad.

x) Taxation must be provided at 30%.
(Hint: You first have to calculate the net profit in the income statement)

YOU ARE REQUIRED TO:

a) Prepare general journal entries for the adjustments above.

b) Prepare the Statement of Comprehensive Income *(Income Statement)* for the year ended 30 June 2021.

c) Prepare the Statement of Financial Position *(Balance sheet)* at 30 June 2021.

Question 5	Check answers

a) General Journal of Palooka Industries – June 2021

No.		Name of accounts	Fol.		
ii)	Dr	Prepaid advertising (+ CA)		1 320	
	Cr	Advertising expense (+ e)			1 320
		(R3 120 X 22/52)			
iii)	Dr	Prepaid insurance (+ CA)		1 000	
	Cr	Insurance expense (+ E)			1 000
		(R1 500 X 8/12)			
vi)	Dr	Interest expense (- E)		750	
	Cr	Accrued expense (+ CL)			750
		(R25 000 x 12% x 3/12)			
x)	Dr	Income tax expense (- E)		4 508.40	
	Cr	South African Revenue Services (SARS) (Income tax) (+ CL)			4 508.40
		(R15 028 X 30%)			

b) Statement of Comprehensive Income (Income statement)

Cost of sales expense	R175 300
Gross Profit	R ?
Total operating expenses	R81 692
Net profit after tax	R10 519.60

c) Statement of Financial Position *(Balance sheet)*

Non-current assets at carrying value *(including investments)*	R171 408
Accumulated depreciation on vehicles: Opening balance at beginning of the year plus depreciation for the current year = R15 000 + 6 000	R21 000
Current assets	R88 500
Retained earnings	R10 519.60
Non-current liabilities	R25 000
Current liabilities	R51 908.40

QUESTION 6

The following list of balances were extracted from Cotton Knitters Ltd at 31 March 2021 prior to taking year-end adjusting entries into account.

Pre–adjustment Trial Balance of Cotton Knitters Ltd at 31 March 2021:

	Dr	Cr
	R	R
Ordinary shares of R1		150 000
Retained income (*earnings)*		429 230
12% Debentures *(long term loan)*		50 000
Vehicles	236 000	
Accumulated depreciation on vehicles		54 600
Bank	35 770	
Trade payables (Creditors)		267 830
Trade receivables (Debtors)	548 900	
Investment in associate company	165 000	
Inventory	542 900	
Sales income		1 674 340
Cost of sales expense	674 200	
Salaries expense	237 820	
Administrative expenses	98 650	
Operating expenses	34 500	
Bad debts expense	2 560	
Interest on debentures *(finance costs)*	3 000	
Taxation expense	46 700	.
	R2 626 000	**R2 626 000**

Note that this business uses the perpetual inventory method.

Additional information which must be taken into account as at 31 March 2021:

(1) Interest on the debentures must be provided for the full year.
(2) An additional R900 must be written off as irrecoverable from debtors.
(3) Included in administrative expenses is an amount of R1 750 for stock of stationery on hand.
(4) Salaries totalling R1 800 are still in arrears.
(5) Vehicles must be depreciated by 20% p.a. using the straight-line method based on cost
(6) Taxation for the year is estimated to be R98 600.

YOU ARE REQUIRED TO:

(a) Record the General journal entries for each of the adjustments 1 to 6.
(Narrations are not required).

(b) Draft the Post-adjustment trial balance at 31 March 2021.

(c) Draft the Statement of Comprehensive Income *(Income Statement)* and the Statement of Financial Position as at 31 March 2021.

Question 7

[an adjusted version of question 5.28 from your textbook]

Pre–adjustment Trial Balance of Galactic Limited at 31 March 2021.

	Dr	Cr
	R	R
Ordinary shares of R5		100 000
Retained income *(earnings)*		325 000
Long term loan		60 000
Equipment	510 000	
Accumulated depreciation on equipment		310 000
Bank		127 700
Trade payables		216 000
Trade receivables	421 000	
Investment in Wonder Limited	100 000	
Inventory	302 500	
Sales income		995 000
Cost of sales expense	454 700	
Salaries expense	202 500	
Administrative expenses	92 300	
Operating expenses	29 100	
Bad debts expense	1 300	
Interest expense	8 100	
Taxation expense	12 200	
	R2 133 700	**R2 133 700**

Note that this business uses the perpetual inventory method.

Additional information which must be taken into account as at 31 March 2021:

(1) Salaries totalling R3,200 have been paid in advance
(2) Interest on the long-term loan must be provided for the full year. The loan has an interest rate of 18% and the outstanding balance has not changed since the beginning of the year.
(3) An additional R400 must be written off as irrecoverable from debtors.
(4) Included in Administrative expenses is an amount of R3,400 for stock of stationery on hand.
(5) Equipment must be depreciated by 15% pa using the reducing balance method based on year-end figures.
(6) Taxation for the year is estimated to be R23,400.
(7) A dividend of R3.50 per share has been declared and must be provided for *(Ignore STC and DWT)*.

YOU ARE REQUIRED TO:

(a) Draft the General journal entries for each of the adjustments 1 to 7 listed above.

(b) Draft the Post-adjustment trial balance at 31 March 2021.

(c) Draft the Statement of Comprehensive Income *(Income Statement)* and the Statement of Financial Position *(or Balance Sheet)* as at 31 March 2021.

QUESTION 8	(25 MARKS : 30 MINUTES)
6 June 2012 Q2	

The following information was extracted from the accounting records of Nqiwa Ltd for the year ended 29 February 2021:

Pre-adjustment Trial balance of Nqiwa Ltd as at 29 February 2021.

	Dr	Cr
	R	R
Share capital *(R2 each)*		100 000
Retained earnings		433 000
Long term loan (*interest at 10.5% p.a.)*		86 000
Equipment	450 000	
Accumulated depreciation: Equipment		90 000
Motor vehicles	171 000	
Accumulated depreciation: Motor vehicles		Nil
Bank	318 335	
Trade payables	s	216 000
Trade receivables	421 000	
Inventory	302 500	
Tax expense	12 200	
Net profit before tax, adjustments and corrections below		**750 035**
	R1 675 035	**R1 675 035**

The bookkeeper, A. Robson, of Nqiwa (Pty) Ltd has been a little distracted with the preparation of the Winter Olympics and has forgotten to record certain transactions or has incorrectly recorded a few transactions. You have managed to ascertain the following from an examination of the accounting records:

Additional information:

1. The financial year runs from 1 March to 29 February. On 1 May 2020, Nqiwa (Pty) Limited purchased a motor vehicle for R171 000. Neither the motor vehicle, nor the equipment has been depreciated in this financial year. It is the company's policy to depreciate Motor vehicles at 25% using the reducing balance method and equipment at 20% straight line.

2. The account for utilities *(rates/water/electricity)* for February 2021 consumption only arrived on 5 March 2022, and has not been recorded in the accounting records. The account totalled R2 500.

3. The bookkeeper incorrectly allocated petrol expenditure of R1 500 to Repairs and Maintenance.

4. An analysis of the debtor position indicates that a further R3 300 must be written off as bad debt.

5. Taxation of R26 500 is still owing to SARS at the end of the financial year. This is in addition to the payment that was made during the year to SARS.

6. A dividend of R0.50 per share was declared on 28 February 2021 and must be provided for *(Ignore STC/DWT)*. The dividend will only be paid in cash on 25 April 2021.

YOU ARE REQUIRED TO:

1. Prepare general journal entries only for adjustments *(corrections)* **numbered 3 and 6.**
   Ignore dates and narrations.

(5 marks)

2. Calculate the correct net profit after tax of Nqiwa Ltd for the year ended 29 February 2021 using the adjustments and corrections 1 to 6 above.
   Ignore dates.
   Present your answer as follows:

Net profit before tax, adjustments and corrections below	**R750 035**
Adjustments:	

(7 marks)

3. Prepare a Statement of Financial Position as at 29 February 2021 after all the adjustments and corrections *(1 to 6 had been taken into account)*.

(13 marks)

QUESTION 9	(15 MARKS : 18 MINUTES)

The Bob Marley Co. commenced business on 1 January 2019. The Pre-adjustment trial balance and the Post-adjustment trial balance at 31 March 2021 are shown below:

	Pre-adjustment trial balance		Post-adjustment trial balance	
	Dr	Cr	Dr	Cr
	R	R	R	R
Bank	13 400		13 400	
Trade receivables	s800		1 600	
Prepaid rent	Nil		1 800	
Stationery *(supplies)* on hand	Nil		2 000	
Equipment at cost	30 000		30 000	
Accumulated depreciation: Equipment				700
Bank loan		10 000		10 000
Trade payables		3 020		3 020
Salaries payable				1 200
Interest payable				100
Unearned rent income		Nil		1 200
Capital: Bob Marley		28 000		28 000
Drawings	1 200		1 200	
Commission income		28 000		28 800
Rent income		2 600		1 400
Salaries expense	18 000		19 200	
Rent expense	4 800		3 000	
Depreciation expense	Nil		700	
Stationery *(supplies)* expense	2 400		400	
General expense	1 020		1 020	
Interest expense	Nil		100	
	R71 620	**R71 620**	**R74 420**	**R74 420**

YOU ARE REQUIRED TO:

a) Prepare General journal entries for the adjusting entries that were recorded at the end of the financial year.
(Narrations are not required)

(14)

b) If the bank loan bears interest at 12% per year, how many months has it been outstanding?

(1)

QUESTION 10 (21 MARKS: 25 MINUTES)

Source: Managerial Finance (FTX1005F) - 2014 June Q2

At 30 June 2021, the end of the current financial year, the accountant prepared the following incorrect Statement of Financial Position *(Balance sheet)* of Kiki Ltd:

Statement of Financial Position *(Balance sheet)* for the year ended 30 June 2021.

Assets	**R**	**R**	**R**
Current assets	**Cost**	**Acc Depn**	**Carrying value**
Land and buildings *(cost)*			352 500
Inventory	37 000		37 000
Vehicles	82 000	36 000	118 000
			507 500
Non-current assets			
Trade receivables		38 000	
Equipment *(cost)*		154 000	
Bank overdraft		(32 000)	
Income received in advance		(12 000)	148 000
Total assets			**R655 500**
Equity and liabilities			
Share capital *(200 000 Class A (ordinary) shares at R1 each)*			200 000
Retained earnings			*40 000*
Current liabilities			*194 500*
Accumulated depreciation: Equipment		52 000	
Accrued income		12 400	
South African Income Services: Income tax *(Dr Balance)*		20 800	
Trade payables	s	109 300	
Non-current liabilities			
Mortgage loan			36 000
Net profit <u>after</u> tax for the year			185 000
Total Equity and liabilities			**R655 500**

Additional information that must be taken into account:

1. The correct cost price of the vehicles is R87 600. ***You may assume that all the other amounts are correct.***
2. On 30 June 2021 the firm declared a final dividend of 40 cents per share.
3. On 30 June 2021 the firm had not yet recorded and paid the water and electricity account of R6 000 for June 2021.

YOU ARE REQUIRED TO:

Prepare a correct Statement of Financial Position *(Balance sheet)* for Kiki Ltd at 30 June 2021.

(21 marks)

MANAGERIAL FINANCE (FTX1005F)
TUTORIAL 5
RISK AND RETURN
HAND IN DATE: Monday 20 March 2023

When attempting numerical questions relating to risk and return it is useful to remember the following: You are also required to know and explain the different terms relevant to the section on Risk and Return.

Example:

	1	2	3	4	5	6
State of the economy	**Probability**	**Return (R)**	**Expected return R_e (1x2)**	**Deviation $(R - R_e)$ (2-3)**	**Deviation squared $(R - R_e)^2$**	**Variance (1 x 5)**
Superboom	12 %	40 %	4.8 %	29 %	8.41 %	1.0092 %
Boom	20 %	30 %	6 %	19 %	3.61 %	0.7220 %
Normal	40 %	10 %	4 %	-1 %	0.01 %	0.0040 %
Recession	18 %	-10 %	-1.8 %	-21 %	4.41 %	0.7938 %
Severe recession	10 %	- 20 %	-2 %	-31 %	9.61 %	0.961 %
Expected return : R_e			**11 %**			
Variance = σ^2						**3.49 %**

Standard deviation	**=**	**σ**
Variance	**=**	**σ^2**

1. TRUE / FALSE

For each of the following statements indicate whether they are True or False. Please provide a brief explanation if a statement is false.

1.1 Unsystematic risk is referred to as asset specific risk and is normally non-diversifiable.

1.2 The beta coefficient, B, is a relative measure of non-diversifiable risk.

1.3 The most common statistical indicator of an asset' risk is the standard deviation which measures the dispersion around the expected value.

1.4 The Coefficient of Variation is a measure of relative dispersion that is used to compare the risks of assets with different expected returns.

1.5 An asset with a high Coefficient of Variation has lower risk.

1.6 Correlation provides a measure of the relationship between two series of numbers.

1.7 The returns of two assets that have correlation coefficient of 0 mean that the returns are perfectly correlated.

1.8 An investor purchased a share on 1 January 2019 for R135. During the 2019 year the share paid a dividend of R20. At 31 December 2019 the firm sold the share for R150. The rate of return earned by the firm is 35.92 %.

1.9 A statistical measure of the variability of a distribution around its mean is referred to as Coefficient of variation.

1.10 The ratio of the standard deviation of a distribution to the mean of the distribution is referred to as probability distribution.

1.11 Beta describes an index measure of systematic risk.

1.12 The Capital Asset Pricing Model (CAPM) is a model that explains the relationship between risk and expected return *(expected return is equal to the risk free return plus a premium based on systematic risk of the share).*

1.13 The Beta for an ordinary share listed on the Johannesburg Securities Exchange (JSE) = 1, while the Beta for a Government Bond equals 0.

1.14 The strong form of the market efficiency indicates that share prices reflect all public and private information.

1.15 Diversification is most effective when securities' returns are negatively correlated.

2. MATCHING QUESTIONS

Match each term with the appropriate definition by writing the appropriate letter in the space provided.

		Term		Definition
	2.1	Probability	(a)	Shares move in the same direction.
	2.2	Risk	(b)	Statistical measure of linear relationship between two shares *(assets).*
	2.3	Deviation	(c)	Measures the amount of risk for each unit of return.
	2.4	Standard deviation	(d)	The size of the expected difference between actual outcomes and expected outcomes. *The chance of financial loss.*
	2.5	Co-variance	(e)	The square root of the variance and is a statistical indicator of risk. *Dispersion around expected value.*
	2.6	Correlation co-efficient	(f)	Quantitative measure that a given result will be attained.
	2.7	Negative co-variance	(g)	It's the difference between the expected overall return *(R_e)* and a predetermined return for particular outcome or probability.
	2.8	Coefficient of Variation	(h)	An indication of how the shares *(assets)* move together.
			(i)	Shares move in opposite direction.

3. MULTIPLE CHOICE QUESTIONS *(MCQ)*

Select the most correct answer.

3.1 Which of the following statement about risk is false?

(a) Risk requires an outcome less favourable than the expected value.
(b) Risk requires the possibility of more than one outcome.
(c) Risk is one of the determinants of the required return.
(d) Risk aversion is assumed to be the dominant behavioural characteristic.
(e) All of the above statements are true.

3.2 Which is the best measure of risk for an asset held in isolation? Which is the best measure for an asset held in a diversified portfolio?

(a) Variance; Correlation coefficient
(b) Standard deviation; Correlation coefficient
(c) Beta; variance
(d) Standard deviation; beta
(e) Beta; beta

3.3 If the returns of an individual investments changes by exactly the same degree as the returns on the market as a whole, the beta for the investment must be:

(a) 1.25
(b) 0.25
(c) 0.75
(d) 1
(e) 1.26

3.4 Share A has a beta of 1.5 and share B has a beta of 0.75. Which of the following statements must be true about these shares *(assume market equilibrium)*

(a) Share B has greater risk than share A.
(b) Share B would be a more desirable addition to a portfolio than Share B.
(c) Share A would be a more desirable addition to a portfolio than Share B.
(d) The expected return of Share B will be higher than that of share A.
(e) The expected return of Share A will be higher than that of share B.

The following information relates to questions 3.5 and 3.6:

You are attempting to gauge the probability of earning lower than the expected return of 20% on a share that you are analysing using the properties of the normal distribution. The following table relates to the past returns of two shares X and Y:

	X (%)	Y (%)
1	12	22
2	11	19
3	18	18
4	9	14
5	20	22

3.5 The mean return for each share is:

(a) X = 12% and Y = 15%
(b) X = 14% and Y = 19%
(c) X = 8% and Y = 9%
(d) X = 12% and Y = 19%
(e) X = 10% and Y = 14%

3.6 The standard deviation for each share is:

(a) X = 4.243% and Y = 2.967%
(b) X = 6% and Y = 4%
(c) X = 3% and Y = 5%
(d) X = 2.53% and Y = 3.5%
(e) X = 4% and Y = 6%

The following information relates to questions 7 and 8:

Returns for the Draton Limited Company over the last 3 years are shown below.

Year	Return
2009	21.00%
2010	-12.50%
2011	25.00%

3.7 What is the expected return?

(a) 19.5%
(b) 29.25%
(c) 16.75%
(d) 6.56%
(e) 11.17%

3.8 What is the standard deviation of the firm's returns?

(a) 20.08%
(b) 20.59%
(c) 21.11%
(d) 21.64%
(e) 22.18%

Question 4	(15 MARKS : 18 MINUTES)
Complete solution	**Complete solution**

After graduating from UCT you launched a successful business and have become wealthy in your own right. You are constantly reviewing your share portfolio and changing your investments. Recently you have investigated Hargary Limited, a small manufacturing company.

You have read the annual financial statements, thoroughly calculated all the ratios which turned out to be favourable and now you are busy examining the historical returns. You have been training your assistants to do some of the work for you and they have completed following accurate but incomplete schedule. You are now going to show them how to finish off the schedule and explain to them what these calculations reflect.

	Hargary Limited		
	Return H	**Dev H**	**Dev Sq H**
2012	22.0%	3.67%	0.13%
2013	-3.5%	-21.83%	4.77%
2014	36.5%	18.17%	3.30%

YOU ARE REQUIRED TO:

For parts 1 and 2 use the information already calculated in the question. It is not necessary for you to copy the information in the question to your answer books.

1. Calculate the expected return for Hargary Limited.

(2 marks)

2. Calculate the variance and standard deviation for Hargary Limited.

(3 marks)

3. Explain the meaning of the expected return and standard deviation for Hargary Limited in the context of how much the actual return might differ from the expected return.

(4 marks)

4. Calculate the Coefficient of Variation of Hargary Limited.

(2 marks)

5. Briefly explain what the Coefficient of Variation indicates about Hargary Limited.

(2 marks)

6. A firm of share analysts has given you the following information: "the risk free rate is 9%, the return for the market as a whole is 15% and Hargary Limited has a beta of 1.4".
   Calculate the expected return using the Capital Asset Pricing Model *(CAPM).*

(2 marks)

The following formulae might be useful:

$$\sigma = \sqrt{\sigma^2} \qquad CV = \frac{\sigma}{R_e} \qquad R_s = R_f + \beta(R_m - R_f)$$

Question 4	(15 MARKS: 18 MINUTES)
	Complete solution

		Return H	Dev H	Dev Sq H
2012		22.0	3.7	13.4
2013		-3.5	-21.8	476.7
2014		36.5	18.2	330.0
?		55.0		820.2
n		3		
n-1				2
Expected Return $_H$		18.3		
Var H	σ^2_H			410.1
Std Dev H	σ_H			20.3

1. Expected return = 55/3 **(1**)= 18.3% **(1)**

(2 marks)

2. Variance 820.2 /2 **(1)**= 410.1 **(1)** Standard deviation √410.1 = 20.3 **(1)**

(3 marks)

3. The share has an expected return of 18.3 % **(1*)*** with a standard deviation of 20.3%**(1)** which means the actual outcome at -1std deviation could be 18.3 -20.3 = -2% **(1)** and at +1 std deviation 18.3+20.3 =38.6% **(1)**

(4 marks)

4. CV = 20.3/18.3 **(1)** = 1.1 **(1)**

(2 marks)

5. For every one percent of return **(1)** Hargary Limited has 1.1% of risk **(1)**

(2 marks)

6. R_S = 9% + 1.4 (15%-9%) **(1)** = 9% +8.4% = 17.4% **(1)**

(2 marks)

Question 5	Check answers (MARKS: MINUTES)

Still to be typed

Question 6	(MARKS: MINUTES)

1. You have identified a share in which you are considering an investment. You are prepared to purchase the share if you can expect to receive a return for the year of 20%. The expected income *(dividends and capital gain)* from the share for the year is R3.20. Calculate the highest price that you would be prepared to pay for that share.

2. On the 1st of January 2012 an investor purchased 1500 shares in Zimplats Ltd when the share price was R8.80. During the year, an 80 cents dividend per share was paid. The market share at the end of the year was R9.76. Calculate the return on the investment that the shareholder achieved over the one year period.

3. An investor places R12000 into an annuity at 12% per annum compound interest at the end of year for 5 years. Find the future value of this investment after 5 years.

4. An investor has collected the following information regarding an investment in the shares of Padua Ltd:

Year	1	2	3	4
Expected dividends	40cents	45cents	56cents	52cents
Expected selling price				1250cents

If 15% is the appropriate required rate of return from this investment, calculate the highest price the investor would be prepared to pay for the share. If the amount required for investment was 900 cents should the investor take up the investment?

5. Use the table below to calculate, the expected return, variance and the standard deviation.

State of the economy	Probability	Return
Super boom	15%	60%
Boom	20%	40%
Normal	40%	20%
Recession	10%	-20%
Super recession	15%	-40%

QUESTION 7 (18 MARKS : 22 MINUTES)

Source Managerial Finance (FTX105F) January 2015 Supplementary Q7

After graduating from UCT you launched a successful business and have become wealthy in your own right. You are constantly reviewing your share portfolio and changing your investments. Recently you have investigated Adonis Limited, a small manufacturing company. The following projected information was obtained your junior clerk:

State	Probability	Return
Recession	0.20	10%
Normal	0.60	15%
Boom	0.20	20%

YOU ARE REQUIRED TO:

1. Calculate the Expected Return *(R_e)* and standard deviation *(SD)* for Adonis Limited.

(11 marks)

2. Calculate the Co-efficient of Variation *(CV)* and briefly explain what it indicates about Adonis Limited.

(4 marks)

The following formulae might be useful:

$$\sigma = \sqrt{\sigma^2} \qquad CV = \frac{\sigma}{R_e} \qquad R_S = R_f + \beta(R_m - R_f)$$

3. Name any three risks that a potential investor faces in the market.

(3 marks)

MANAGERIAL FINANCE (FTX1005F)
TUTORIAL 6
FINANCIAL RATIO ANALYSIS
HAND IN DATE: Monday 3 April 2023

Mathematics section
This must be attempted by all students and is a compulsory hand in.
Week beginning 3 April 2023

DECIMALS

A decimal is a fraction in which the numerator has been divided by the denominator.

Decimal consists of three components as follows:

- An integer followed by;
- Decimal point followed;
- by another integer

Position of digit	Value	Name
First	0.1	Tenths
Second	0.01	Hundredths
Third	0.001	Thousands
Fourth	0.0001	Ten- thousands
Fifth	0.00001	Hundred-thousands
Sixth	0.000001	Millionths

Express the following first as percentages and then as decimals:
(present your answers as follows):

Example:

	Fraction	Percentage	Decimal
Example	$\frac{3}{5}$	60%	0.60

1. $\frac{3}{10}$

2. $\frac{2}{5}$

3. $\frac{6}{8}$

4. $\frac{25}{100}$

5. $\frac{12}{36}$

6. $\frac{7}{21}$

7. $\frac{32}{64}$

8. $\frac{6}{13}$

9. $\frac{5}{14}$

10. $\frac{8}{19}$

Express the following as fractions

1. 0.3

2. 0.47

3. 0.66

4. 0.25

5. 0.458

1. TRUE / FALSE

For each of the following statements indicate whether they are True or False. Please provide a brief explanation if a statement is false.

11. Industry averages place a company's financial ratios in more meaningful perspective.

1.2 A very high current ratio may be an indication that a firm has a huge investment in accounts receivables and inventories.

1.3 A firm may be very profitable and may find it difficult to pay short term creditors.

1.4 A firm with an Accounts receivable turnover of four *(4)* will have 90 days of credit sales that are uncollected.

1.5 Earnings per share *(EPS)* is calculated for both ordinary (Class A) and Preference (Class B) shares.

1.6 Book value per ordinary share is useful to evaluate a firm's ability to repay short term debts in the ordinary course of business.

1.7 The earnings per share *(EPS)* would increase if a company uses more debt in its capital structure.

1.8 If a firm's ordinary share capital was R400 000, retained earnings R600 000 and long term liabilities was R300 000 its debt to equity ratio would be 1.5 : 1.

1.9 Winkelman Company has a policy of reinvesting the maximum amount of earnings possible in the business; that is, few dividends are distributed. The ratio that would best reveal this policy is the dividend yield ratio.

1.10 In order for a financial ratio to be meaningful it must compare an item from one financial statement to an item from another financial report. Intra-statement *(same statement)* comparisons are not of any use.

1.11 The ability of the firm to meet its long-term obligations is referred to liquidity.

1.12 Prepaid expenses and accrued expenses are included in the calculation of the acid test ratio *(quick ratio).*

1.13 Common size financial statements provide useful information so that users can evaluate the rand amounts of increases and decreases.

1.14 A high debt to equity ratio is preferred by creditors as it provides them protection in the event of liquidation / bankruptcy.

1.15 Vertical analysis and the use of common size financial statements are really similar *(the same)* processes.

2. MATCHING QUESTIONS

Match each term with the appropriate definition by writing the appropriate letter in the space provided.

		Term		Definition
	2.1	Horizontal analysis	(a)	Calculates the net profit each ordinary *(Class A)* share has earned.
	2.2	Vertical analysis	(b)	Time period between when the risk and rewards of ownership of goods is transferred from supplier to buyer and when the supplier is paid in cash.
	2.3	Current ratio	(c)	Evaluates what investors are paying for each R1 of profits earned by the firm.
	2.4	Creditors payment period	(d)	Ability of business to repay short-term obligations when they become due.
	2.5	Net margin	(e)	Calculate the return earned by owners on assets they invested in firm.
	2.6	Return on equity	(f)	Analysis which the individual items are expressed as a percentage of a specific item reported in the same statement.
	2.7	Price earnings ratio	(g)	Comparison of amounts reported in two consecutive financial statements with a view to evaluate the change from year to year.
	2.8	Earnings per share	(h)	The amount of net profit attributable to ordinary *(Class A)* shareholders.
			(i)	Measures the time period when a credit sale is made and when the debtor pays the amount owing.

3. MULTIPLE CHOICE QUESTIONS *(MCQ)*

Select the most correct answer.

Select the most correct answer.

3.1 Ordinary shareholders would be least concerned with which of the following ratios:

(a) Earnings per share of the ordinary shares
(b) Dividend yield ratio
(c) Price Earnings Ratio
(d) Acid test ratio
(e) Dividend pay-out ratio

3.2 A company has R39 000 of current assets and a current ratio of 1.5. Compute the amount of working capital:

(a) R26 000
(b) R13 000
(c) R58 500
(d) R30 000
(e) R97 500

3.3 Which of the following transactions will increase a company's current ratio of 1.7 : 1;

(a) The sale of equipment for cash at carrying value
(b) Cash payments to short term creditors.
(c) The sale of equipment for cash at a loss.
(d) (a), (b) and (c) are all correct
(e) None of the above is correct

3.4 Which of the following should be <u>not</u> be included in the calculation of the quick ratio:

(a) Inventory
(b) Current liabilities
(c) Trade creditors
(d) Accrued expenses
(e) None of the above

3.5 A company has R60 000 of current assets and a current ratio of 3 : 1. The amount of its current liabilities is:

(a) R80 000
(b) R20 000
(c) R45 000
(d) R25 000
(e) R30 000

3.6 Nasdaq Limited average debtor's collection period was 25 days in 2019, but increased to 42 days in 2020. Which of the following statements would cause this increase in debtors' collection period?

(a) A decrease in accounts receivable relative to sales in 2016
(b) A decrease in sales in 2020 relative to 2019.
(c) An increase in sales in 2020 relative to 2019.
(d) A relaxation of credit policies in 2020.
(e) None of the above.

3.7 Angelface Ltd has accounts receivable of R40 m and cash sales of R182.5m. Credit sales are 80% of total sales. The accounts receivable collection period is:

(a) 80 days
(b) 30 days
(c) 20 days
(d) 16 days
(e) 40 days

3.8 Listless Ltd has a net asset value R4.2 million. Net profit is R1 200 000 and earnings per share is R2.40. The price to book ratio *(i.e. market price to NAV per share)* of the company's shares is 3. There are 500 000 shares in issue. What is the PE ratio?

(a) 3.5 times
(b) 10.5 times
(c) 11.0 times
(d) 12.0 times
(e) 13.0 times

R4 200 000 /500 000 = R8.40 NAV
NAV per share
Price = 3 x 8.40 = R25.20
P/E = 25.20/2.40 = 10.5 times

3.9 The EPS of Freer Ltd for the year ended 30 November 20x5 is 200 cents. Its earnings yield is currently 16% and it maintains a dividend cover of 2.5 times. The current share price and dividend yield of Freer Ltd as reported in the financial press is:

(a) R12.50 and 9.6%
(b) R5 and 16%
(c) R7 and 5%
(d) R12.50 and 6.4%
(e) None of the above.

3.10 Kapa Fashions Limited is listed on the JSE. Its shareholders equity per the latest annual financial statements is R200m, and it had 25m shares in issue. The headline EPS was 200 cents per share, and the price/earnings ratio was 10 times. What is the company's price to book ratio (i.e. price to NAV per share)?

(a) 8.0 times
(b) 3.5 times
(c) 2.5 times
(d) 4.5 times
(e) 20.0 times

10	(d) (R12.50 and 6.4%)
12	(c)Price = PE x EPS = R20; NAV per share = R200m/25m=R8. 20/8 =2.5

3.11 The following information relates to Ltd at 31 December 2020 the end of its financial year

Quick assets	R416 000
Acid test ratio	2.6 : 1
Current ratio	3.5 : 1
Net sales 2019	R3 600 000
Cost of sales expense	R2 000 000

The value of Ltd's current liabilities at 31 December 2020 is:

(a) R180 000
(b) R320 000
(c) R118 000
(d) 750 000
(e) None of the above

3.12 If a company A has a higher rate of return on assets than Company B the reason for this may be that A has a higher profit margin on sales or a higher asset turnover ratio or both

	List A	**List B**
(a)	Higher	Higher
(b)	Higher	Lower
(c)	Higher	Higher
(d)	Lower	Lower
(e)		

3.13 BEE Ltd has total debt of R420 000 and shareholders' equity of R700 000. BEE Ltd is looking for capital to fund its expansion plans and wants to raise an additional R300 000 from the issue of ordinary shares and is in negotiations to borrow additional funds. The bank requires that Ltd maintain a debt to equity ratio of 0.75. What is the maximum amount BEE Ltd will be able to borrow?

(a) R225 000
(b) R330 000
(c) R525 000
(d) 750 000
(e) None of the above

3.14 A company has 100 000 issued ordinary shares with a current market value of R20 per share. The company declared a dividend of R2 per share and the company has a dividend pay-out ratio of 40%. The company's price to earnings ratio (PE) is:

(a) 2.5 times
(b) 4 times
(c) 10 times
(d) 50 times
(e) None of the above

3.15 Company wrote off obsolete inventory at the end of its financial year. The effect of the inventory write off would be:

(a) Decrease current ratio and not affect the acid test ratio
(b) Decrease in acid test ratio and no change in the current ratio
(c) Increase in current ratio and no change in acid test ratio
(d) Increase in acid test ratio and current ratio
(e) Decrease in current and acid test ratio

3.16 What would the effect be on book value per ordinary share and earnings per share (EPS) if a company purchased its own shares in the open market at a price greater than its it book value per share

(a) No effect on book value per share and earnings per share increases
(b) Increase both book value per share and earnings per share
(c) Decrease book value per share and increase earnings per share
(d) Decrease book value per share and earnings per share
(e) None of the above

Question 4	**Complete solution**

The Loan Shark Finance Company is attempting to evaluate an applicant *(A Ltd)* for a short-term loan. The following table presents some information concerning the 'average' company in the industry in which A operates, and the corresponding information for A Ltd. It is normal in the industry for goods to be supplied on a 30 days basis.

	A Ltd 31/12/2020	**Industry average 31/12/2020**
	R'000	**R'000**
Cash	3 000	10 000
Short-term investments	4 500	7 000
Trade receivables	60 000	70 000
Prepaid expenses	8 000	12 000
Closing inventory	70 000	98 000
Opening inventory	64 000	90 000
Non-current assets	1 200 000	1 500 000
Trade payables	54 000	48 000
Other current liabilities	20 000	32 000
Non-current liabilities	600 000	400 000
Sales income *(all credit)*	400 000	650 000
Cost of sales expense	300 000	480 000
Operating profit	278 000	390 0000
Interest expense	90 000	60 000

YOU ARE REQUIRED TO:

a) Calculate the following ratios for A Ltd and the Industry average:

(i) Current ratio

(ii) Acid test ratio

(iii) Debtors period collection

(iv) Inventory turnover

(v) Creditors payment period

b) Calculate the firm's debt ratio and interest coverage ratio.

c) In light of the information provided, outline those factors which might be useful to the loan officer in making her/his decision.

Question 4	Complete solution

a)

(i)		Odious Limited		Industry Average
	Current ratio			
		(R3 000 + 4 500 + 60 000		(R10 000 + 7 000 + 70 000
	Current assets (SOFP)	8 000 + 70 000)		+ 12 000 + 98 000)
	Current liabilities (SOFP)	(54 000 + 20 000)		(48 000 + 32 000)
		= R145 500		= R197 000
		74 000		80 000
		= 1,97 : 1 (2)		= 2,46 : 1 (2)
(ii)	**Acid test ratio**			
	Current assets **less** inventory (SOFP)	= R145 500 - 70 000		= R197 000 - 98 000
	Current liabilities (SOFP)	74 000		80 000
		= 1,02 : 1 (1)		= 1,24 : 1 (1)
(iii)	**Debtors collection period**			
	Debtors (SOFP) x 365	R60 000 x 365		R70 000 x 365
	Sales *(credit)* 1	400 000 1		650 000 1
		= 54,75 days (1)		= 39,31 days (1)
(iv)	**Inventory turnover**			
	Cost of sales expense (I/S)	R300 000		R480 000
	Average inventory (SOFP)	(64 000 + 70 000) /2		(98 000 + 90 000) /2
		= 4,48 times (1½)		= 5,106 times (1 ½)
(v)	**Creditors payment period (W2)**			
	Creditors (SOFP) x 365	= R54 000 x 365		= R48 000 x 365
	Purchases (credit) 1	(W3) 306 000 1		(W3) 488 000 1
	(Some use cost of sales expense in place of credit purchases)	= 64,4 days (1)		= 35,90 days (1)
b)	**Debt ratio**			
	Total debt (SOFP) x 100	R600 000 + 74 000		R400 000 + R80 000
	Total assets (SOFP)	1 200 000 + 145 500		1 200 000 + 197 000
		R674 000 X 100		R480 000 X 100
		1 345 500		1 397 000
		= 50 %		= 34.36 %

		Odious Limited		Industry Average
	Interest coverage			
	Operating profit (I/S)	R278 000		R390 000
	Interest expense (I/S)	90 000		60 000
		= 3.08 times		= 6.5 times

Workings.

W1	**Debtors turnover**			
	Credit sales	R400 000		R650 000
	Debtors	60 000		70 000
		= 6.66 times		= 9.28 times
	Debtors collection period	365		365
		6.66		9.28
		= 54.75 days		= 39.33 days
W2	**Creditors turnover**			
	Credit purchases	R306 000		R488 000
	Creditors	54 000		48 000
		= 5.66 times		= 10.166 times
	Creditors payment period	365		365
		5.66		10.166
		= 64.48 days		= 35.90 days

W3	**Purchases**			
	Cost of sales	R300 000		R480 000
	Add: Closing inventory	70 000		98 000
		370 000		578 000
	Less: Opening inventory	(64 000)		(90 000)
	Purchases	**R306 000**		**R488 000**

(c)
The above ratios are liquidity and working capital management ratios which are concerned with the cash availability of the business.

- It is clear from the analysis that, in the care of all the above ratios the company is worse than the industry norms, thus indicating a possible shortfall of cash.

- The debtors' collection period and inventory turnover ratios are particularly bad, and the company is taking nearly double the time of its competitors to settle creditors.
- In view of the above, it would appear as if this company would be at significantly higher risk prospect than the average industry company and the bank may well consider calling for additional security or charging a higher interest rate.

Question 5	**Check answers**

The following are extracts from the income statements and Statements of financial position *(balance sheets)* of AAA Limited in respect of the financial years 2021 and 2020:

	R000's	**R000's**
	2021	**2020**
Sales income	230 000	165 000
Cost of sales expense	140 000	90 000
Interest expense *(finance charges)*	6 000	3 000
Other operating expenses	45 000	40 000
Share capital	96 000	25 000
Long term debt *(loan bearing interest at 10 % p.a.)*	60 000	60 000
Inventory	50 000	30 000
Trade receivables *(Debtors control)*	102 000	88 000
Bank	2 000	4 000
Trade payables *(Creditors control)*	75 000	60 000
Bank overdraft	5 000	-0-
Non-current assets	87 100	27 400

YOU ARE REQUIRED:

a) To calculate the following ratios in respect of **both 2021 and 2020** financial years:

i) Gross profit percentage on sales
ii) Net profit percentage on sales
iii) Interest cover / Times interest earned ratio
iv) Long-term debt to total assets
v) Current ratio
vi) Acid test ratio
vii) Debtors collection period

(16 marks)

Do not comment on the above ratios.

b) Upon examining the above table, the managing director comments: *"Our gross profit percentage has declined from 2020 to 2021 immediate action must be taken to restore profitability as this is a very dangerous situation indeed".*
You are required to list three possible causes of a decline in gross profit percentage from one year to the next and to state, with reasons, whether you agree with the managing director that a decline in gross profit percentage is necessarily a dangerous situation.

(6 marks)

c) Briefly comment on the change in the liquidity position of AAA Limited from the 2020 to the 2021 financial years and make recommendations on how to improve it.

(5 marks)

Question 5	Check answers

a)

		2021	2020
i)	Gross profit percentage on sales	39.13 %	45.5 %
ii)	Net profit percentage on sales	17.0 %	19.4 %
iii)	Interest cover	7.5 times	11.67 times
iv)	Long term debt to total assets	24.88 %	40.16 %
v)	Current ratio	1.92 : 1	1.96 : 1
vi)	Acid test ratio	1.3 : 1	1.53 : 1
vii)	Debtors collection period	162 days	194.7 days

b) Causes of decline in GP % could be attributable to the following*:*

- Increased competition leading to lower prices
- Increased cost price without a corresponding increase in selling price
- Change in composition of sales mix
- Not obtaining favourable trade discounts
- Reduced selling prices without a corresponding decrease in costs
- Closing inventory understated
- Opening inventory overstated
- Purchases overstated

Any three will suffice

A decline in Gross Profit percentage on sales is not necessarily dangerous, it may simply be the result of change in sales mix to a lower mark-up range of products. Where total gross profit increases, as has happened in this example, the shift may be favourable as total gross profit was R 75 000 in 2020 and increased to R 90 000 in 2021.

c) The two ratios which are relevant for assessing liquidity are the current ratio and acid test ratio. Both ratios show a decrease from 2020 to 2021, although the amount of the decrease is slight. A more meaningful comparison could be done by incorporating the industry averages into the analysis.

Question 6

Supertex Ltd and Qualitex Ltd operate stores selling textile goods. The financial statements of the two companies for the year ended 30 September 2021 are given below.

Statement of Financial Position *(Balance sheet)* as at 30 September 2021

	Supertex Ltd	**Qualitex Ltd**
	R	**R**
EQUITY AND LIABILITIES		
Capital and Reserves		
Ordinary shares *(R1 each)*	300 000	420 000
Share premium	120 000	250 000
Revaluation reserve	100 000	220 000
Accumulated profits	488 000	646 000
Total shareholders' interest	1 008 000	1 536 000
Non current liabilities		
Long-term loans	*270 000*	*600 000*
Current liabilities	*342 000*	*606 000*
Accounts payable	342 000	606 000
	R1 620 000	**R2 742 000**
ASSETS		
Non-current assets	*900 000*	*1 440 000*
Land and buildings	560 000	980 000
Plant and equipment	340 000	460 000
Current assets	*720 000*	*1 302 000*
Inventory	330 000	702 000
Accounts receivable	350 000	570 000
Bank	40 000	30 000
	R1 620 000	**R2 742 000**

Statement of Comprehensive Income *(Income Statement)* for the year ended 30 September 2021

	Supertex Ltd	**Qualitex Ltd**
	R	**R**
Sales income *(all on credit)*	3 200 000	4 200 000
Cost of sales expense	(2 150 000)	(2 730 000)
Gross profit	1 050 000	1 470 000
Other income	32 000	42 000
	1 082 000	1 512 000
Operating expenses	(680 000)	(1 122 000)
Net profit before interest *(operating profit)*	402 000	390 000
Interest expense	(42 000)	(90 000)
Profit before tax	360 000	300 000
Tax	(108 000)	(90 000)
Net profit after tax	**R252 000**	**R210 000**
Market price per share	R5.50	R4.00
Earnings per share	84 cents	50 cents
Dividend per share	25 cents	18 cents

YOU ARE REQUIRED TO:

(a) Calculate the following ratios for each company:
- (i) current ratio
- (ii) acid test ratio

Using these ratios, justify the company that is in a better position to receive short – term credit from a supplier.

(7 marks)

(b) Calculate the following ratios for each company:
- (i) average debtors' collection period in days
- (ii) inventory turnover ratio in days

Using these ratios, justify the company whose asset management is better.

(7 marks)

(c) Calculate the following ratios for each company:
- (i) debt ratio
- (ii) interest cover ratio

Using these ratios, justify the company that is in a better position to take on more long- term debt.

(7 marks)

(d) Calculate the following ratios for each company:
- (i) Dividend yield
- (ii) Price earnings ratio

(4 marks)

QUESTION 7

[an adjusted version of question 6.19 in text book]

The new managing director of Organic Foods Ltd, a company in the food industry, has asked you, as financial adviser, to analyse and give your views on the relative profitability and liquidity of its two wholly-owned subsidiaries, Canned Ltd and Frozen Ltd, whose activities are the processing of fruit and vegetables. She further anticipates receiving an offer from a large corporation in the Frozen Foods industry to shortly make an offer to purchase 100% of the shares of Frozen Ltd.
The information has been extracted from the financial statements of each company for the two years ended 31 December 20.9 *(all in R'000)*:

	Canned Ltd		Frozen Ltd	
Financial Performance data	**20.8**	**20.9**	**20.8**	**20.9**
	R	**R**	**R**	**R**
Sales income	45 200	38 100	17 000	14 000
Cost of sales expense	38 400	30 500	11 200	9 400
Gross profit	6 800	7 600	5 800	4 600
Depreciation	500	400	500	300
Other costs	4 200	5 800	3 400	2 000
Net profit	**2 100**	**1 400**	**1 900**	**2 300**
Financial Position data				
Shareholders' equity	10 500	9 900	7 500	6 800
Long term liabilities	2 100	1 800	200	0
Current liabilities	11 900	14 900	7 800	4 300
Trade payables (Creditors)	8 500	8 200	3 200	2 200
Bank overdraft	3 400	6 700	4 600	2 100
	R24 500	**R26 600**	**R15 500**	**R11 100**
Non-current assets	8 300	9 200	3 500	2 500
Current assets	16 200	17 400	12 000	8 600
Inventory	9 300	10 200	1 800	2 300
Trade receivables (Debtors)	6 900	7 200	10 200	6 300
	R24 500	**R26 600**	**R15 500**	**R11 100**

YOU ARE REQUIRED TO:

1. Write a concise/brief report to the CEO analysing the results of each company and commenting on any significant trends using the following ratios:

	Profitability	Liquidity	Debt
	Return on equity (ROE)	Current ratio	Debt to equity ratio
	Gross profit margin	Acid Test ratio	Interest coverage
	Net profit margin	Operating Cash Flow	
	Total asset turnover		

(20 marks)

QUESTION 8

PART A

Calculate four ratios that would measure the ability of the Company to earn profits. Use the information to prepare a written report to the directors whether the company's operating performance has increased or decreased during 2021. The comparative Statements of Comprehensive Income and additional data is provided below:

	2021	2020
	Rm	Rm
Net sales	174 000	158 000
Cost of goods sold	93 000	86 000
Gross profit	81 000	72 000
Selling and administration	50 000	41 000
Operating profit	31 000	31 000
Interest expense	5 000	10 00
Net profit before tax	26 000	21 000
Tax	8 000	8 000
Net profit after tax	**18 000**	**13 000**

Additional information:

	2021	2020
	Rm	Rm
Total assets	204 000	191 000
Shareholders' equity	96 000	89 000
Number of ordinary shares issued	20 000	20 000

PART B

Evaluate the ordinary shares of Intendo Manufacturers as an investment. Use any three financial market ratios to determine whether the ordinary shares have increased or decreased as an investment during the past year:

	2021	2020
	R	R
Net profit before tax	75 000	75 000
Income tax	17 000	20 000
Dividends	20 000	20 000
Shareholders equity (*80 000 shares)*	580 000	500 000
Market price of share at year end	R11.50	R7.75

PART C	(15 MARKS: 18 MINUTES)

You are currently working in a Financial Investment firm and your manager requires you to evaluate the ordinary shares of two Companies A and B as a potential investment. According to the local economist magazine future economic conditions are expected to improve. In your analysis *(from the information provided below)* use any three financial market ratios to determine which company is a better investment opportunity. Please submit your analysis of the results in a properly constructed written report.

	A	**B**
	R	**R**
Net profit before tax	75 000	75 000
Income tax	17 000	20 000
Dividends	20 000	20 000
Shareholders' equity	580 000 *(80 000 shares)*	500 000 *(50 000 shares)*
Market price of share at year end	R11.50	R7.75

QUESTION 9	

You are required to download the Annual Reports of two (2) listed companies on the Johannesburg Securities Exchange *(JSE)* allocated to you below from the web:

YOU ARE REQUIRED TO:

1. Calculate the following financial ratios for the financial year ended 2021:

Acid test ratio	Return on assets after tax *(ROA)*
Gross profit on sales	Return on equity *(ROE) (3 Key drivers)*
Price earnings ratio	Debt to equity

Note:

- ***Use Group figures***
- ***Use Revenue***
- ***Use Total shareholder's equity***

2. Briefly explain which company is performing better?

(maximum 50 words)

3. You are required to submit a copy of the firms' Statement of Comprehensive income and Statement of Financial Position, Statement of Cash flows and Statement of Equity with your answer.

Your answer must be presented as follows:

	Financial Ratio	**Company A**		**Company B**

The following tutorials groups are required to calculate financial ratios for the following companies:

Tutorial group number	Companies	Sector
1.	Aveng and M&R Holdings	Construction
2.	Barlow world and Bidvest	General industrials
3.	Crookes and Illovo	Food producers
4.	AVI and Astral	Food producers
5.	Pick n Pay and Spar	Food and drug retailers
6.	Mr Price and Truworths	General retailers
7.	Vodacom and MTN	Mobile telecommunications
8.	Sibanye and Harmony	Gold mining
9.	ACI and Omnia	Chemicals
10.	Mondi Ltd and Sappi	Forestry and paper
11.	Keaton and Wescoal	Coal mining
12.		

Source Business Times (Cape Times)

MANAGERIAL FINANCE (FTX1005F)
TUTORIAL 7
WORKING CAPITAL MANAGEMENT
HAND IN DATE: Monday 10 April 2023

1. TRUE / FALSE

For each of the following statements indicate whether they are True or False. Please provide a brief explanation if a statement is false.

1.1 The sale of a non-current asset on credit will result in an increase in working capital.

1.2 The payment of creditors will result in decrease in working capital.

1.3 A financial transaction that affects only current assets and current liabilities will have no effect on working capital.

1.4 The net working capital is not affected by annual depreciation expense.

1.5 The sale of inventory for R7 500 *(cost price, R5 000)* will result in decrease of working capital.

1.6 The cash sale of shares to the general public will have no effect on working capital.

1.7 The payment of operating expenses for the month will result in a decrease in working capital.

1.8 Gross working capital is current assets less all liabilities.

1.9 Most retails firms use an aggressive working capital management policy.

1.10 A firm with a conservative working capital management policy will use more current liabilities as a source of finance.

1.11 The purchase of land for cash will have no effect on a firm's net working capital.

1.12 Debtors' collection period is calculated using total sales.

1.13 A firm's working capital cycle is calculated operating cycle plus creditors' payment period.

1.14 A high or positive working capital cycle is preferred to a low or negative one in terms of days.

1.15 The cash received from debtors will result in an increase in working capital.

2. MATCHING QUESTIONS

Match each term with the appropriate definition by writing the appropriate letter in the space provided.

		Term		Definition
	2.1	Gross working capital	(a)	The cash is received from debtors before payment is made to creditors *(suppliers).*
	2.2	Net working capital	(b)	This working policy employs large amounts of short-term interest bearing loans to finance current assets.
	2.3	Conservative working capital policy	(c)	The time period between when the cash Is received from debtors and when the cash is paid to creditors *(suppliers)*.
	2.4	Aggressive working capital policy	(d)	The amount of inventory a firm should order to minimise its carrying and ordering costs of inventory.
	2.5	Operating cycle	(e)	Current assets less current liabilities.
	2.6	Cash conversion cycle	(f)	The time period between when the goods have been delivered and when the cash is collected from credit customers.
	2.7	Negative Cash conversion cycle *(working capital cycle)*	(g)	This working policy employs large amounts of long term financing to finance current assets
	2.8	Economic order quantity *(EOQ)*	(h)	The additional amount of inventory a firm should order to take into account unusual demand *(sales and production requirements)*
			(i)	The amount of cash invested in current assets

3. MULTIPLE CHOICE QUESTIONS *(MCQ)*

Select the most correct answer.

3.1 Which one of the following transactions would result in a decrease in a company's working capital:

(a) The collection of cash from debtors
(b) A cash payment made to a creditor
(c) The purchase of inventory on credit *(account)*
(d) The sale of equipment for cash at a loss
(e) None of the above.

3.2 A firm must find short term funds to pay its salaries and wages. These cash funds could come from:

(a) Bank loans
(b) Trade credit
(c) Stretching accounts payable
(d) Speeding up the collection of cash from debtors
(e) All of the above

3.3 The operating cycle is best explained by:

(a) Debtors collection period less Inventory turnover
(b) Inventory days on hand plus Debtors collection period
(c) Creditors payment period + Inventory turnover
(d) Inventory days on hand plus debtors collection period
(e) None of the above.

3.4 The Cash cycle is best described by:

(a) Operating cycle plus Creditors payment period
(b) Operating cycle less Inventory days on hand
(c) Operating cycle less Creditors payment period
(d) Inventory days on hand plus debtors' collection period less Creditors payment period
(e) (c) and (d) are correct

3.5 A relatively aggressive working capital policy has the following characteristics

(a) A high ratio of long-term debt to non-current assets
(b) A low ratio of short-term debt to total debt
(c) A high ratio of current assets to non-current assets
(d) A low current ratio
(e) All of the above

3.6 An aggressive working capital policy by a firm will most likely lead to

(a) Decrease in profitability and decrease in liquidity
(b) Decrease in profitability and an increase in liquidity
(c) Increase in profitability and decrease in liquidity
(d) Increase in profitability and an increase in liquidity
(e) None of the above

3.7 In order to lower financial uncertainty:

(a) Long term debt should be used to finance short term *(current)* assets
(b) Short term debt should be used to finance short term *(current)* assets
(c) Short term debt should be used to finance all the firm's assets
(d) Long term debt should be used to finance all the firm's assets
(e) (a), (c) and (d) are correct

3.8 Increased sales will spontaneously result in an:

(a) Increases in number of employees
(b) Decreases in accounts receivable
(c) Increases in inventories
(d) Decreases in accounts payable
(e) Increases in accounts receivable

3.9 The following accounts were extracted from the Statement of Financial position of Dynamic Ltd:

	R
Cash and cash equivalents	34 000
Land	100 000
Furniture & equipment	150 000
Inventories	24 000
Prepaid expense	5 000
Creditors	16 000
Mortgage loan	80 000
Share capital	120 000
Accrued expense	2 000

The amount of Dynamic Ltd's Working capital is:

(a) R47 000
(b) R45 000
(c) R42 000
(d) R40 000
(e) None of the above

3.10 What effect does the following general journal entry have on Working capital?

Dr		Property plant & equipment	50 000	
	Cr	Loans		45 000
	Cr	Bank		5 000

(a) Increases working capital
(b) Decreases working capital
(c) Has no effect on working capital
(d) Rarely changes working capital
(e) None of the above

3.11. The declaration and payment of a scrip dividend by a public company will result in:

(a) Increase of working capital
(b) Decrease in working capital
(c) An inflow of cash
(d) An outflow of cash
(e) No effect on the Statement of Financial Position

3.12 The following information relating to working capital cycle of three retailers operating in Khayelitsha in the Western Cape are presented to you.

	Working Capital Cycle	**Debtors collection period**	**Creditors payment period**	**Days inventory on hand**
	Days	Days	Days	Days
Company Chetty	?	60	35	20
Company Beal	?	70	30	30
Company Tao	?	25	55	15

Which company has the best Working Capital Cycle?

(a) Company Chetty
(b) Company Beal
(c) Company Tao
(d) None of the above
(e) All of the above

QUESTION 4	COMPLETE SOLUTION

Source: Flynn, D: "Understanding Finance & Accounting"; Revised 3rd edition; LexisNexis; 2009.
13.19 (adapted)

Ideke Ltd is considering introducing a more aggressive policy approach to working capital management. The budgeted financial statements are currently under review in order to assess the impact which some suggested changes in working capital policies will have on the various balance sheet items, before finalising the budget. The summarised budgeted financial statements follow:

Statement of Comprehensive Income *(Income statement)* for the year ended 31 December 2021

	R
Revenue from sales	345 260
Less: Cost of sales expense	(168 730)
Gross profit	176 530
Less: Operating expenses	(135 890)
Net Operating profit	40 640
Less: Interest expense *(financing costs)*	(9 000)
Net profit before tax	31 640
Less: Taxation	(9 492)
Net profit attributable to share holders / Net profit after tax	**22 148**

Statement of Financial Position *(balance sheet)* as at 31 December 2021

	R
ASSETS	
Non-current assets	**101 280**
Current assets	110 170
Inventory	41 500
Trade receivables	57 190
Cash and cash equivalents	11 480
Total assets	**211 450**
EQUITY AND LIABILITIES	
Shareholders' equity	**130 000**
Non-current liabilities	**60 000**
15 %Long term loans	60 000
Current liabilities	**21 450**
Trade payables	14 000
Other current liabilities	7 450
	211 450

The following changes in working capital policy targets have been suggested. Should the changes be implemented, the saving in financing requirements, if any, will be used to reduce the long-term loan.

- Days' inventory on hand – 50 days
- Accounts receivable collection period to - 30 days
- Accounts payable payment period to – 60 days

YOU ARE REQUIRED TO:

1. Calculate the present number of days for each of the items under consideration.

Present your answer as follows:

	Current	Proposed	Changes
Days inventory on hand			
Debtors collection period			
Creditors payment period			

2. Calculate the return on assets *(after interest but before tax)* and the return on equity *(ROE)* under the current budget.

3. Using the information available, determine the impact the changes will have on each of the three net working capital items.

4. Redraft the Income Statement and Statement of Financial Position *(balance sheet)* under the new policies, assuming that the operating profits remain unchanged.

Present your answer as follows:

	Current	Proposed	Changes

5. Discuss the issues which management would have to address when considering the changes in working capital policy such as those under review by Ideke Ltd.

QUESTION 4	COMPLETE SOLUTION

13.19

1, 2, 3 and 4

	Current	Proposed	Changes
Days inventory on hand	89.77 days	50 days	-40 days
Debtors collection period	60.46 days	30 days	-30 days
Creditors payment period	30.29 days	60 days	30 days

	Current	Proposed	Changes
	R	R	R
Revenue from sales	345 260	346 260	0
Less: Cost of sales expense	(168 730)	(168 730)	0
Gross profit	176 530	176 530	0
Less: Operating expenses	(135 890)	135 890	
Net Operating profit	40 640	40 640	
Less: Interest expense *(financing costs)*	(9 000)	-140	-9 140
Net profit before tax	31 640	40 780	-9 140
Less: Taxation	(9 492)	12 234	-2 742
Net profit attributable to share holders / Net profit after tax	**22 148**	**28 546**	**-6 398**

Statement of Financial Position *(balance sheet)* as at 31 December 2020

	Current	Proposed	Changes
	R	R	R
ASSETS			
Non-current assets	**101 280**	**101 280**	**0**
Current assets	**110 170**	**62 971**	**47 199**
Inventory	41 500	**23 114**	18 386
Accounts receivable	57 190	**28 378**	28 812
Cash and cash equivalents	11 480	11 480	
Total assets	**211 450**	**164 251**	**47 199**
EQUITY AND LIABILITIES			
Shareholders' equity	**130 000**	**130 000**	**0**
15 %Long term loans ***(BALANCING FIGURE)***	**60 000**	**-935**	**60 935**
Current liabilities	**21 450**	**35 186**	**13 736**
Accounts payable	14 000	**27 736**	13 736
Other current liabilities	7 450	7 450	0
	211 450	**164 251**	**47 199**

Return on assets after interest before tax	14.96 %	24.74 %	
Return on Equity *(ROE)*	17.0 %	22.00 %	
Tax rate	30.0 %	30.00 %	

5.

- For each of the changes recommended discussion must focus on the practical issues of implementation *(monitoring and control)*.
  - *Reducing inventory by 40 days implies that either less inventory will be kept on the shelves or warehouse or that sales will increase quickly. Holding less inventory increases the risk of less choice for customers, and more stock outs resulting in loss of sales.*
  - *Reducing the debtors collection period by 30 days is likely to result in a decrease in customers (go to competitors).*
  - *Increasing creditor payment period could damage in relationships and / or lead to loss of discounts or interest on late payments.*
  - *All of these must be considered on a cost benefit analysis.*

QUESTION 5	**(16 MARKS : 19 MINUTES)**
Source: Managerial Finance (FTX1005F) - 2015 May T2 Q3	

1. Indicate the level of the elements *(1.1 to 1.4)* of Working Capital under the Aggressive and Conservative Working capital policies.

Please present your answer as follows:

		Aggressive		**Conservative**
Example	***Inventory***	***Low***		***High***
1.1	Current ratio			
1.2	Short term debt			
1.3	Long term debt			
1.4	Risk & return			

(4 marks)

2. Name and briefly explain the three key financial ratios that would allow you to calculate the Working Capital Cycle *(Cash Conversion Cycle)?*

(3 marks)

3. Briefly discuss how management of retail companies might be able to reduce the Working Capital Cycle *(Cash Conversion Cycle).*

(3 marks)

4. Khomo Industries has a 125-day Operating cycle. If the Days Inventory on hand is 50 days, what is the duration of the Debtors' Collection Period? If the Creditors' Payment period is 30 days, what is its Working Capital Cycle *(Cash Conversion Cycle)*?

(2 marks)

5. A creditor, Felix Suppliers, offers Sefu Partners the following payment terms for an amount that they owe, 5/10 NET 60. The bank offers a short-term loan facility at an interest rate of 27%.

Should Sefu Partners apply for a loan from the bank and pay Felix Suppliers by the discount date stated on the invoice?

(4 marks)

Bonus question

What impact would the following action have on the Operating Cycle and the Working Capital Cycle *(Cash Conversion Cycle). Would the cycles increase, decrease or remain unchanged?*

All else remaining the same, an improvement in the production process resulted in a decrease in the cost of goods sold.

QUESTION 6

Source: Flynn, D: "Understanding Finance & Accounting"; Revised 3rd edition; LexisNexis; 2009.

13.14

Dung Ltd is considering a working capital plan that will reduce the cash to cash cycle *(Working Capital Cycle)* by 10 days.

YOU ARE REQUIRED TO:

(a) List three ways in which this could be achieved.

(b) List three possible negative results that could flow from the plan.

QUESTION 7

13.15

Source: Flynn, D: "Understanding Finance & Accounting"; Revised 3rd edition; LexisNexis; 2009.

The statement of financial positions of three companies, Alpha, Beta and Gamma are presented as follows:

Statement of financial positions:

		Alpha	**Beta**	**Gamma**
EQUITY AND LIABILITIES		**R**	**R**	***R***
Shareholders' equity		400 000	400 000	400 000
Non-current liabilities *(Long term liabilities)*		150 000	150 000	40 000
		R550 000	**R550 000**	**R440 000**
NET ASSETS				
Non Current assets (*Fixed assets)*		300 000	300 000	300 000
Net working capital	**A-B**	**250 000**	**250 000**	**140 000**
Current assets	**A**	***420 000***	***700 000***	***420 000***
Inventory		220 000	350 000	220 000
Accounts receivable / debtors		170 000	280 000	170 000
Cash resources		30 000	70 000	30 000
Current liabilities	***B***	***170 000***	***450 000***	***280 000***
Accounts payable / creditors		150 000	430 000	260 000
Bank overdrafts		20 000	20 000	20 000
		R550 000	**R550 000**	**R440 000**

YOU ARE REQUIRED TO:

Discuss the working capital policy of each company and draw comparisons between them.

QUESTION 8

13.16

Source: Flynn, D: "Understanding Finance & Accounting"; Revised 3rd edition; LexisNexis; 2009.

The following information is extracted from the financial statements of Nirla Fashions for the past four years. All purchases and sales take place on a credit basis.

		20.1	20.2	20.3	20.4
		R	R	R	R
Sales income		1 123 631	1 237 959	1 706 390	1 986 500
Cost of sales expense		821 082	967 159	1 250 349	1 376 840
Net current assets	**A-B**	***76 916***	***80 206***	***80 703***	***78 631***
Current assets	**A**	*127 512*	*139 258*	*173 222*	*207 802*
Inventory		26 649	84 098	105 518	120 568
Debtors		57 281	39 298	62 573	79 842
Cash resources		43 582	15 862	5 131	7 392
Current liabilities	**B**	*50 596*	*59 052*	*92 519*	*129 171*
Creditors		29 722	33 789	62 902	89 670
Other		20 874	25 263	29 617	39 501

YOU ARE REQUIRED TO:

(a) Calculate the number of days in the working capital cycle and the cash to cash cycle period for each of the four years.

(b) Comment on your findings.

MANAGERIAL FINANCE (FTX1005F)
TUTORIAL 8
COST VOLUME PROFIT ANALYSIS (CVP)
HAND IN DATE: Monday 17 April 2023

1. TRUE / FALSE

For each of the following statements indicate whether they are True or False. Please provide a brief explanation if a statement is false.

1.1 A change in the sales mix towards less profitable products will lower the break –even point *(in units)*.

1.2 The product with the highest contribution margin per unit will have the highest contribution margin ratio.

1.3 One the break-even point has been reached, increases in contribution margin will result in an increase in net profit.

1.4 An increase in fixed costs will not affect the break-even point while the Contribution margin ratio remains unchanged.

1.5 The break-even point can be calculated using only variable and fixed costs.

1.6 At the break-even point the following occurs: Contribution margin equals fixed costs, profit equals zero and Total income equals total costs.

1.7 The margin of safety is defined as the amount by which sales can drop before the firm starts incurring losses.

1.8 In order to perform a cost volume analysis a firm must split its costs into fixed and variable costs.

1.9 Variable costs per unit are affected by changes in production activity *(no of units produced)*.

1.10 A decrease in the number of units produced will result in an increase in fixed production costs per unit and total product costs per unit.

1.11 A decrease in the number of units sold will increase the breakeven point.

1.12 At the breakeven point: Sales less variable costs = Fixed costs.

1.13 The break-even point can be determined by using Fixed costs / variable cost per unit / selling price per unit.

1.14 Sales commissions paid to sales persons are a variable production expense.

1.15 Operating leverage is high in companies that have low fixed costs and high variable costs per unit.

1.16 A firm with an operating leverage of 3 would expect net profit to increase by 150 % if sales increased from R200 000 to R250 000.

2. MATCHING QUESTIONS

Match each term with the appropriate definition by writing the appropriate letter in the space provided.

		Term		Definition
	2.1	Cost volume profit analysis	(a)	Fixed costs that are required even if production is shut down temporarily.
	2.2	Contribution margin ratio	(b)	The level of activity which the firm expects to operate.
	2.3	Contribution margin per unit	(c)	Contribution margin expressed as a percentage of sales.
	2.4	Break-even point	(d)	A managerial accounting technique used to evaluate how profits are affected by changes in the level of costs and quantity sold.
	2.5	Relevant range	(e)	A manufacturing cost that has both variable and fixed cost component.
	2.6	Variable costs	(f)	Sales per unit less variable costs per unit
	2.7	Mixed cost	(g)	The sales volume at which the fixed costs equals the contribution margin.
	2.8	Margin of safety	(h)	The cost per unit remains the same but varies in total.
			(i)	The amount by which sales *(in units and rands)* can decrease before the firm will experience losses.

3. MULTIPLE CHOICE QUESTIONS *(MCQ)*

Select the most correct answer.

3.1 Which one of the following costs should NOT be considered an indirect cost of serving a particular customer at a Dairy Queen fast food outlet?

(a) The cost of the hamburger patty in the burger they ordered.
(b) The wages of the employee who takes the customer's order.
(c) The cost of heating and lighting the kitchen.
(d) The salary of the outlet's manager.
(e) Water and electricity.

3.2 When a decision is made among a number of alternatives, the benefit that is lost by choosing one alternative over another is the:

(a) Realized cost.
(b) Opportunity cost.
(c) Conversion cost.
(d) Accrued cost.
(e) Sunk cost.

3.3 Conversion cost consists of which of the following?

(a) Manufacturing overhead cost and direct material.
(b) Direct materials and direct labour cost.
(c) Direct labour cost.
(d) Direct labour and manufacturing overhead cost.
(e) Manufacturing overhead and indirect labour

3.4 Prime cost consists of direct materials combined with:

(a) direct labour.
(b) manufacturing overhead.
(c) indirect materials.
(d) cost of goods manufactured.
(e) Selling and marketing expenses.

3.5 An example of a period cost for a manufacturing firm is:

(a) fire insurance on a factory building.
(b) salary of a factory supervisor.
(c) direct materials.
(d) rent on a head office building.
(e) Factory electricity

3.6 Manufacturing overhead includes:

(a) all direct material, direct labour and administrative costs.
(b) all manufacturing costs except direct labour.
(c) all manufacturing costs except direct labour and direct materials.
(d) all selling and administrative costs.
(e) All head office expenses

3.7 Materials used in the operation of a factory, such as cleaning supplies that are not an integral part of the final product should be classified as:

(a) Direct materials.
(b) A period cost.
(c) Administrative expense.
(d) Manufacturing overhead.
(e) None of the above

3.8 The three basic elements of manufacturing cost are direct materials, direct labour, and:

(a) Work in process.
(b) Cost of goods sold.
(c) Manufacturing overhead.
(d) Cost of goods manufactured.
(e) None of the above

3.9 When fixed costs are present in a manufacturing organisation, an increase in the activity level within the relevant range results in:

(a) An increase in fixed cost per unit.
(b) A proportionate increase in total fixed costs.
(c) An unchanged fixed cost per unit.
(d) A decrease in fixed cost per unit.
(e) None of the above

3.10 To obtain the sales volume *(in rands)* necessary to attain a given target net profit, which of the following formulas should be used?

(a) (Fixed expenses + Target net profit)/Total contribution margin
(b) (Fixed expenses + Target net profit)/Contribution margin ratio
(c) Fixed expenses/Contribution margin per unit
(d) Target net profit/Contribution margin ratio
(e) Fixed costs + Target net profit / Sales

The following information refer to questions 11, 12, 13 and 14:

	Rm
Work in process inventory, beginning	R100
Work in process inventory, ending	R150
Finished goods inventory, beginning	R180
Finished goods inventory, ending	R200
Direct labour cost	R300
Direct materials cost	R500
Variable manufacturing overhead cost	R400
Fixed manufacturing overhead cost	R500
Variable selling and administration cost	R200
Fixed selling and administration cost	150

3.11 The prime cost is:

(a) R900m.
(b) R800m.
(c) R500m.
(d) R700m.
(e) Some other amount *(specify)*

3.12 The conversion cost is:

(a) R700m.
(b) R800m.
(c) R900m.
(d) R500m.
(e) R1 200m

3.13 The cost of goods manufactured is:

(a) R1 350m.
(b) R1 250m.
(c) R1 220m.
(d) R1 650m.
(e) R1 850m

3.14 The total variable cost is:

(a) R700m.
(b) R1 400m.
(c) R900m.
(d) R500m.
(e) R1 200m

Question 4	

Part A	**(marks: minutes)**

A company manufactures and retails clothing. You are required to group the costs, which are listed below and numbered into the following classifications *(each cost is intended to belong to only one classification)*:

i) direct materials
ii) direct labour
iii) direct expenses
iv) indirect production overhead
v) research and development costs
vi) selling and distribution costs
vii) administration costs
viii) finance costs

1.	Lubricant for sewing machines.	
2.	Floppy disks for general office administration	
3.	Maintenance contracts for general office photocopying machine.	
4.	Telephone rental plus metered calls.	
5.	Interest on bank overdraft.	
6.	Performing Rights Society charge for music broadcast throughout the factory.	
7.	Market research undertaken prior to a new product launch.	
8.	Wages for security guards for the factory.	
9.	Carriage on purchase of basis raw material.	
10.	Royalty payable on number of units of product XY produced.	
11.	Road fund licences for delivery vehicle.	
12.	Parcels sent to customers.	
13.	Cost of advertising products on television.	
14.	Audit fees.	
15.	Chief accountant's salary.	
16.	Wages of operatives in the cutting department.	
17.	Cost of painting advertising slogans.	
18.	Wages of storekeepers.	
19.	Wages of fork lift truck drivers who handle raw materials.	
20.	Development of a new product in the laboratory.	

Part B

Various costs associated with manufacturing operations are given below:

YOU ARE REQUIRED TO:

Classify each cost as being either variable or fixed with respect to volume or level of activity. Also indicate whether each cost would typically be treated as a direct or an indirect cost with respect to units of product. Prepare your answer on the answer sheet below:

	Cost item	Cost behaviour		To units of product	
		Variable	Fixed	Direct	Indirect
	Example: Factory insurance		**X**		**X**
1.	Plastic washers used in auto production.				
2.	Production supervisor's salary.				
3.	Labourers assembling a product.				
4.	Electricity for operation of a machine.				
5.	Janitorial salaries.				
6.	Clay used in brick production.				
7.	Rent on a factory building.				
8.	Wood used in ski production.				
9.	Screws used in furniture production.				
10.	A supervisor's salary.				
11.	Cloth used in suit production.				
12.	Depreciation of cafeteria equipment.				
13.	Glue used in textbook production.				
14.	Lubricants for machines.				
15.	Paper used in textbook production.				

Part C P2-14 (marks: minutes)

Heritage Company manufactures a beautiful bookcase that enjoys widespread popularity. The company has a backlog of orders that is large enough to, keep production going indefinitely at the plant's full capacity of 4 000 bookcases per year. Annual cost data at full capacity follow:

Materials used *(wood and glass)*	R430 000
General office salaries	110 000
Factory supervision	70 000
Sales commissions	60 000
Depreciation, factory building	105 000
Depreciation, office equipment	2 000
Indirect materials, factory	18 000
Factory labour *(cutting and assembly)*	90 000
Advertising	100 000
Insurance, factory	6 000
General office supplies *(billing)*	4 000
Property taxes, factory	20 000
Utilities, factory	45 000

YOU ARE REQUIRED TO:

a) Prepare an answer sheet with the column headings shown below. Enter each cost item on your answer sheet, placing the rand amount under the appropriate headings. As examples, this has been done already for the first two items in the list above.

Note that each cost item is classified in two ways: **first,** as being **either variable or fixed;** and **second,** as being either a **selling and administrative cost** or a product cost. (*If the item is a product cost, it should be classified as being either direct or indirect as shown.)*

	Cost Behaviour		**Selling or Administrative cost**	**Product Cost**	
Cost Item	**Variable**	**Fixed**		**Direct**	**Indirect**
Material used	430 000			430 000	
General office salaries		110 000	110 000		

b) Total the rand amounts in each of the columns in (a) above. Compute the cost to produce one bookcase.

c) Due to a recession, assume that production drops to only 2 000 bookcases per year. Would you expect the cost per bookcase to increase, decrease; or remain unchanged? Explain. No computations are necessary.

Part D

The following information is provided for 4 companies. Calculate the correct amount for each question mark.

	A	**B**	**C**	**D**
Sales	R5 000	**?**	**?**	R9 000
Variable costs	R4 000	R11 700	R9 750	**?**
Contribution margin	R1 000	R3 900	**?**	**?**
Fixed costs	**?**	4 000	**?**	750
Operating profit / (loss)	R500	**?**	R400	R2 850
Units sold	**?**	1 300	125	90
Price per unit	R5	**?**	R130	**?**
Variable cost per unit	**?**	R9	**?**	**?**
Contribution margin per unit	**?**	R3	**?**	**?**
Contribution margin ratio	**?**	**?**	40 %	**?**
Break even in units	**?**	**?**	**?**	**?**

Question 5	**Complete solution**

Withit (Pty) Ltd manufactures "Lacrosse" style shirts, which it sells for R25 per shirt. At present they are manufactured in a small plant that relies heavily on direct labour. Variable costs are therefore high, amounting to R15 per shirt.

During 2021 the company sold 30 000 shirts with the following operating results reported in its condensed contribution margin income statement:

	Total	**Per shirt**
Sales *(30 000 shirts)*	R750 000	
Less: ALL Variable expenses	R450 000	
Contribution margin	300 000	
Less: ALL Fixed expenses	(210 000)	
Net income	R90 000	

YOU ARE REQUIRED TO:

a) Define the contribution margin.

b) Compute the contribution margin ratio *(CMR)* and the break-even point in shirts.

c) Due to an increase in labour rates, the company estimates that variable costs will increase by R3 per shirt in 2022. If this change takes place and the selling per shirt remains constant at R25, what will be the new C/M ratio and break-even point in shirts?

d) **Refer to the data in (b) above.** If the expected change in variable costs takes place, how many shirts will have to be sold during 2022 to earn the same net income as 2021?

e) **Refer to the data in (b) above.** The managing director feels that the company must raise the selling price per shirt. If Withit (Pty) Ltd wants to maintain the same C/M ratio as 2021, what selling price per shirt must be charged to cover the increased labour cost?

f) **Refer to the original data.** The company is considering the construction of a new, automated plant, which would reduce variable costs per shirt to 60% of the current variable cost, but it would cause fixed costs to double in amount per year. If the new plant is built, what would be the company's new C/M ratio and break-even point in shirts? How many shirts will have to be sold to earn the same net income as 2021?

g) Assume that the firm estimates that it will sell 36 000 shirts in 2022, calculate the firm's margin of safety in units and margin of safety in percentage.

h) Calculate the firm's degree of operating leverage.

Question 5	Complete solution

a)

The contribution margin is the:
rand amount left over from the selling price after deducting the variable costs that is used to contribute firstly to fixed costs and thereafter to profits.

b)

	Contribution margin	**Contribution margin ratio** *Contribution margin per unit x 100 / Selling price per unit*
Selling price *(R750 000/30 000)*	R25	100%
Variable cost *(R450 000/30 000)*	15	60%
Contribution margin per shirt	R10	40%
Break-even point		
Fixed costs	R210 000	
Contribution margin	10	
	= 21 000 shirts	

c) New C/M ratio

	Contribution margin	**Contribution margin ratio** *Contribution margin per unit x 100 / Selling price per unit*
Selling price	R25	100%
Variable cost *(R15 + 3)*	18	72%
Contribution margin	R7	28%
New Break-even point		
Fixed costs	R210 000	
Contribution margin	7	
	= 30 000 shirts	

d) Required volume

Fixed costs + required profit	R210 000 + R90 000
Contribution margin	R7
	= 42 857 shirts

e) Let P = the new selling price

C/M ratio	40%
Therefore, variable costs *(see a)*	60%

S	**=**	**CM**	**+**	**VC**
1P	=	0.4P	+	0.6P
1P	=	0.4P	+	R18

0.6 P	=	R18
P	=	R30 (R18/0.6)

f) New C/M ratio

Selling price	R25	100%
Variable cost *(R15 X 60%)*	9	36%
Contribution margin	R16	64%
New Break-even point	R210 000 x 2	
	16	
	= 26 250 shirts	

* Required sales volume	Fixed costs + required profit	R420 000 + R90 000
	Contribution margin	16
		= 31 875 shirts

g) Margin of safety *(in units)*

Total budgeted sales in units – breakeven sales in units	36 000 – 30 000
	= 6 000 shirts

Margin of safety percentage (%)

Total sales – breakeven sales in units	Total budgeted sales in rands– Breakeven sales in rands x 100
	Total budgeted sales in rands
	(36 000 x R25) – (30 000 x R25) x 100
	(36 000 x R25)
	R900 000 – 750 000 X 100
	900 000
	= 16.67%

h) Degree of operating leverage (DOL)

"The degree of operating leverage is a measure at a given level of sales of how a percentage in sales volume will affect net profits."

Degree of operating leverage (DOL)	Total Contribution margin	Sales (36 000 x R25)	900 000
	Net operating income	Variable costs (36 000 x R15)	540 000
		Contribution margin	360 000
	360 000	Less: Fixed costs	(210 000)
	150 000	**Net profit**	**150 000**
R			
	= 2.4 times		

Implications of degree of operating leverage (DOL):

Say if annual sales were to increase by x %, then the firm's overall net profit will increase by:
= 2.4 (DOL) x % change in sales volume
This is applicable to firms that have high fixed costs relative to their variable costs.

Question 6 — Check answers

Source: BUS 1005 *(20 marks)* June 2009 Q3

After having been to Europe on a Contiki Tour you have decided to start a similar company in South Africa. You will start off with one tour offering, The SAFA Experience, which will be gradually expanded as the company becomes better known.

Costs are as follows: Cost Item	***Cost***
City lodge accommodation per person per night	R 200
Imperial bus hire	R 25 000
Diesel for the Bus	R 4 000
Tour guide salary	R 5 000
Ticket Fees Per Person for Activities	R 3 000
Bookings Administration for the Tour	R 3 500
Welcome Pack per Person	R 100
Bus driver	R 3 000
Passenger Liability Insurance for the Tour Group	R 1 000
Cold drinks per person per day	R 30

The Tour will require accommodation for 10 nights and will last for 10 days. The Bus Driver has noticed that Diesel consumption remains constant no matter how many passengers and luggage are on the bus. The cost per person for the tour is worked out on 20 people being on the tour. This is the minimum amount for the company to proceed with the tour. This is not from a financial breakeven point of view, but from your experience the *"vibe"* is better with this number of people. You have decided to use the number of people on the tour as a base for allocation of fixed overheads. You have decided to charge R 8 000 per person for the tour.

YOU ARE REQUIRED TO:

a) Calculate the total fixed cost for the tour.

(4)

b) Calculate the fixed cost per person for the tour to be allocated.

(2)

c) Calculate the variable costs per person for the tour to be allocated.

(7)

d) Calculate the total costs per person for the tour to be allocated.

(2)

e) Calculate the number of people on the tour that will be needed to break even.

(3)

f) Calculate the margin of safety using the minimum amount of people the company requires in order for a tour to proceed.

(2)

Bonus Marks:

Calculate the profit for the tour if 30 people booked.

Question 6	**Check answers**

a)	Total fixed costs = R41 500
b)	Fixed costs per person = R2 075
c)	Variable costs per person = R5 400
d)	Total cost per person = R7 475
e)	Break even number of people = 16 people
f)	Margin of safety ratio = 0.2 (20 %) *[4 people will also be accepted]*
	Bonus Marks:
	Profit for the tour if 30 people booked = R36 500.

Question 7	(19 Marks : 23 Minutes)

Source: Managerial Finance (FTX1005F) 2016 2nd Supp Q4

Choco-O-Lot Ltd produces a rich praline fudge. Each box of fudge sells for R50. Variable costs per fudge box are as follows:

	R
Pecans	7.00
Sugar	2.00
Butter	18.00
Other ingredients	2.50
Box packaging material	6.00
Selling commission	4.00

Fixed manufacturing overhead costs are R45 000 per year. The fixed selling and administrative costs are R60 000 per year. Choc-O-Lot Ltd estimates it will sell 8 000 boxes.

YOU ARE REQUIRED TO:

1. Calculate the Contribution Margin per Unit for a box of Fudge.

(4 marks)

2. How many boxes of Fudge must Choco-O-Lot Ltd sell to Break Even.

(3 marks)

3. Calculate the firm's Margin of Safety.

(2 marks)

4. Suppose Choco-O-Lot Ltd raises the selling price to R55 per box. What will the new Break-Even Point in units *(boxes)* be?

(4 marks)

5. Choco-O-Lot Ltd has an opportunity to purchase a new packaging machine that will reduce costs and wastage. The Fixed costs will increase by R30 000 per year. What would the new Break-Even Point be in units?

(3 marks)

6. How many boxes of fudge must Choco-O-Lot Ltd sell if it wants to make a Net Profit of R50 000.

(3 marks)

Question 8 (16 marks : 19 minutes)

Source: Managerial Finance (FTX1005F) 2017 Final Q3

Cupid Chocolates produces special Valentine's Day chocolates and packs them in red boxes that sells for R100 per box. The total and per unit budgeted costs to manufacture and sell 40 000 boxes of chocolates for 2023 are as follows:

	Total	Per unit
	R	R
Manufacturing:		
Direct material *(Ingredients)*	960 000	24
Direct labour	320 000	8
Variable manufacturing overheads	240 000	6
Fixed manufacturing overheads	640 000	16
Selling, Distribution and Administration		
Sales commission (*27% of the selling price)*	80 000	?
Salaries and other operating fixed costs	760 000	19

YOU ARE REQUIRED TO:

1. Calculate the total Manufacturing Cost of producing one box of chocolates. Your answer should clearly indicate what the Prime costs are.

(5 marks)

2. Provide two examples of Variable Manufacturing Costs.

(1 mark)

3. Calculate the number of chocolate boxes that Cupid must sell to Breakeven.

(5 marks)

4. Calculate the number of boxes of chocolates that Cupid must sell to make a Profit of R560 000.

(3 marks)

5. Using your answer in 4 above to calculate the Total Sales Income that the firm must earn to earn the Net Profit of R560 000.

(2 marks)

QUESTION 9 (13 MARKS: 15 MINUTES)

Source: Managerial Finance (FTX1005F) 2017 Supp Q4

The Teddy Bear Care Centre provides day care for children from Mondays to Fridays. The monthly variable costs per child are:

Lunch and snacks	R150
Educational supplies	R75
Other supplies *(paper products, toiletries)*	R25
	R250

Monthly Fixed costs consist of:

Rent	R3 000
Salaries	4 200
Miscellaneous costs	900
	R8 100

The day care centre charges each parent R700 per child.

YOU ARE REQUIRED TO:

1. Calculate the number of children Teddy Bear should accept to Break-even per month.

(4 marks)

2. Calculate the Break-even value per month.

(3 marks)

3. Teddy Bear wants to earn a Net profit of R4 500 per month. How many children must they accept to achieve this targeted Net Profit.

(3 marks)

4. Calculate the new Break-even quantity if the fixed costs increase by 20% per month and the charge per child increases to R730.

(3 marks)

Bonus question

Briefly explain the difference between Variable and Fixed costs.

Question 10

Firesafe (Pty) Ltd ("FL") manufactures a single product called "Firesafe", which is a standard size fire-proof safe. The Firesafe product is manufactured in factory using a machine that originally cost the company R50,000. It is estimated that the machine has a useful life of 5 years. The machine is depreciated on a straight-line basis. FL pay a commission on every Firesafe sold to their agents. The table below represents the anticipated operating costs for the next year:

Cost of material for Firesafe:	R60
Commission paid to each agent:	R25
Fixed Costs:	R30 000
Variable costs per Firesafe:	R30

Management would like you to assess the total cost of producing Firesafes at varying levels of production: 500 units, 1 000 units, 3 000 units, 3 500 units.

YOU ARE REQUIRED TO:

1. Draft a table which shows the total costs at each level of production and the resulting unit cost per Firesafe.

2. If the Firesafe retails at R150.00 per unit, determine what the profit or loss would be at each level of production.

3. Calculate the number of Firesafes to be produced in order for FL to breakeven.

[13 marks]

Question 11 (2005)

Inter-travel Airlines Ltd operates a scheduled airline service on the Cape Town to Munich route. The company believes that the route will become more popular in 2020 when the Soccer World Cup takes place. The following data has been extracted from the 2019 budget:

	Amount per passenger
	R
Price per ticket	4 500
Crew costs	2 000
Catering costs	200
Terminal staff	400

The budget assumes that, on average, 220 passengers will travel on each flight. You should assume that crew costs, catering costs and terminal staff are variable.
A number of costs are charged to each flight irrespective of the number of passengers on board. These are estimated to be as follows:

	R
Fuel	150 000
Aircraft maintenance	70 000
Aircraft depreciation	100 000
Landing charges	70 000

YOU ARE REQUIRED TO:

a) Prepare a contribution income statement to calculate the profit or loss earned per flight.

(7 marks)

b) Define the contribution margin.

(2 marks)

c) Calculate the contribution margin and contribution margin ratio.

(3 marks)

d) Calculate the breakeven point in number of passengers.

(2 marks)

e) If Inter-travel Airlines Ltd decided to reduce the ticket price by 10%, it is estimated that this would result in an increase of 20% in passenger numbers per flight. ***Using the 2014 budget data***, calculate the passenger numbers per flight required to reach the break-even point.

(4 marks)

f) ***Refer to the 2019 budget data***. The management at Inter-travel Airlines Ltd are concerned about the financial performance of this route. The company would embark on a programme to improve customer service, at a cost of R30 000 per flight. It is anticipated that this programme would enable the company to increase revenue per passenger without any reduction in passenger volume. Calculate the revenue per passenger, which would be required in order for each flight to show a profit of R90 000.

(5 marks)

Question 12

Source: Flynn, D: "Understanding Finance & Accounting"; Revised 3rd edition; LexisNexis; 2009.

8.12

Creative Concepts (Pty) Ltd is in a bit of mess. Their creative bent has left the more practical aspects of the business in some disarray. They manufacture highly artistic and specialised statuettes, which are used by hotels and municipalities in sophisticated public spaces. The company is financed by a long-term loan from a large investment bank and by shareholders. A consultant bas been called in to try and bring some order into the management accounts. The operations manager has been keeping records, which are incomplete, but is convinced that with the sale of 450 units a year, the volume for last year that the company is doing ok. However, both the bank and the shareholders are not at all happy with the latest set of financial accounts, and are insisting on having more detail presented to them for the planning of the next financial year.

The consultant, after considerable difficulty has gathered the following information, which will be used for the planning of production:

Selling price per unit:	R1,750
Variable costs per unit	R750
Fixed costs	R500,000

In order for the bank to be satisfied, they are insisting on an attainable profit of R300 000, while the shareholder lobby group has indicated that the target should be closer to R500 000.

(Hint: Net profit = Contribution margin less fixed costs)

YOU ARE REQUIRED TO:

(a) Using the appropriate logic and/or formulae, determine the volume of production which will be required to meet the two profit targets that are under consideration.

(b) Draft the budgeted Income Statement at the volume for last year and at the two volumes calculated above. Ensure that the net profit does equal the required target.

(c) For each of the three volume levels, calculate the following:

- Contribution per unit
- Profit per unit
- Contribution margin ratio
- Break-even volume
- Margin of Safety *(units)*

Please present your answer for (b) and (c) as follows:

	Selling price /cost Per Statuette	**450**	**750**	**800**	**1 000**
Sales revenue					
Less: Variable costs					
Contribution margin					
Less: Fixed costs *(given)*					
Net profit					
Contribution per unit					
Profit per unit					
Contribution margin ratio (CMR)					
% Net profit to Sales					
Breakeven volume					
Breakeven sales					
Margin of safety units					

(d) Advise management on the target for which they should aim, indicating some strategies which may be necessary to achieve the required result.

Question 13

Mini Case Study

Comm Inc. manufactures and sells cell phones. The company's contribution format income statement for the most recent year is given below:

	Total (R)	Per Unit (R)	Percent of Sales
Sales *(20,000 units)*	1,200,000		100%
Less: Variable costs	900,000		?
Contribution margin	300,000		?
Less: Fixed costs	240,000		
Net income	60,000		

Management wants to improve company performance drastically and has asked for several items of information.

1. Calculate the company's CM ratio and variable expense ratio.
2. Calculate the break-even point in both units and sales rands.
3. Assume that sales increased by R400,000 next year. If cost behavior patterns remain unchanged, by how much will net income increase? Use the CM ratio to determine your answer.
4. Refer to original data. If the company wanted to earn a minimum profit of R90,000 how many units would they have to sell?
5. Refer to original data. Calculate the margin of safety in rand and percentage form.
6. Calculate the degree of operating leverage at the current level of sales. If sales were to increase by 8% in the following year, by what percentage would you expect net income to increase?

MANAGERIAL FINANCE (FTX1005F)
TUTORIAL 9
BUDGETING
HAND IN DATE: Monday 24 April 2023

1. TRUE / FALSE

For each of the following statements indicate whether they are True or False. Please provide a brief explanation if a statement is false.

1.1. A budget can be defined as a future financial plan highlighting the acquisition and use of resources expressed in forma quantitative terms.

1.2 Budgets are primarily designed as planning tools as opposed to control.

1.3 A sales budget and sales forecast are referring to the same concept.

1.4 The starting point for the preparation of a master budget is a statement of Cash inflows *(receipts)* and cash outflows *(payments)*.

1.5 A self-imposed budget is one that is prepared by top management and imposed on middle and lower levels of management.

1.6 Operating budgets consists of sales, production and capital budgets.

1.7 Operating budgets have short planning horizons as they cover only one year period.

1.8 The master budget has two main components namely the operating budget and the financial budget each having their own budgets.

1.9 The capital budget and cash budget are independent of each other, in other words any one can be prepared first.

1.10 It would be practical and procedurally correct to first prepare a sales budget before preparing a production or purchases budget.

1.11 At the end of a budget period large unfavourable variances are investigated whereas favourable variances are not.

1.12 If a budgeted income statement shows a net profit for the coming period then the cash budget will show a net surplus.

1.13 When preparing the manufacturing overhead budget, depreciation on property, plant and equipment is excluded as it does not require a cash payment during a budgeted period.

1.14 In zero based budgeting departmental managers are required to justify all future expenditures as if they are incurred for the first time.

1.15 When preparing a cash budget a dividend declared to shareholders should be recorded as a cash payment.

2. MATCHING QUESTIONS

Match each term with the appropriate definition by writing the appropriate letter in the space provided.

		Term		Definition
	2.1	Budget	(a)	A future sales forecast detailing the amount of units and price to be sold.
	2.2	Master budget	(b)	Part of Master budget summarising expected future income and expenses to achieve the desired future financial performance.
	2.3	Financial budget	(c)	The acquisition of noncurrent assets planned for the future.
	2.4	Capital expenditures budget	(d)	The expected cash receipts and disbursements *(payments)* during the future budget period.
	2.5	Operating budget	(e)	A set of interrelated budgets representing a comprehensive plan of action for a specified future time period
	2.6	Sales budget	(f)	An estimated number of units that must be produced during a future budget period.
	2.7	Production budget	(g)	Process of preparing a budget for financial planning and control.
	2.8	Cash budget	(h)	Part of Master budget summarising the funding and financial position required for future financial operations.
			(i)	The reconciliation of individual managers' goals with that of the organisation.

3. MULTIPLE CHOICE QUESTIONS *(MCQ)*

Select the most correct answer.

3.1 The Budget Committee:

(a) Is responsible for preparing detailed operating budgets
(b) Is responsible for overall policy matters relating to the budget programme
(c) Generally consists of two persons the president and the controller.
(d) (a), (b) and are correct
(e) None of the above are correct.

3.2 A significant factor which should be considered in making a sales forecast would be:

(a) Past experience in terms of sales volume
(b) Unfiled order backlogs
(c) General and industry economic conditions
(d) Movement of various economic indicators
(e) (a), (b), (c), (d) and (e) are correct

3.3 The sales budget is:

(a) Is prepared after preparing the cash budget
(b) Is prepared from the production budget
(c) Is largely dependent of other budgets in an organisation
(d) Is generally the first budget prepared in an organisation
(e) None of the above

3.4 In preparing a master budget, top management is generally best able to:

(a) prepare detailed departmental level budget figures
(b) Provide a perspective on the company as a whole that is vital in making broad policy decisions in budget matters
(c) Point out the particular persons who are to “blame” for inability to meet budget goals
(d) Reponses (a), (b) and (c) are all correct
(e) None of the above

3.5 Advantages or benefits from budgeting:

(a) The providing of definite goals or benchmarks from which to measure subsequent performance
(b) The uncovering of potential bottlenecks before they occur
(c) The coordination of the activities throughout the organisation
(d) Reponses (a), (b) and (c) are all correct
(e) None of these

3.6 Delta Limited collects 20% of a month's sales in the month of sale, 70% in the month after the sale and 6% in the second month following the sale and the remainder is uncollectible Budgeted sales for the next four months ending July 2023:

Month	April	May	June	July
Budgeted sales	R400 000	R600 000	R700 000	R500 000

Expected cash collections in July 2023 are:

(a) R642 000
(b) R626 000
(c) R640 000
(d) R584 000
(e) None of the above

3.7 Expected budgeted sales for Thando Limited over the next four months are given below:

Month	July	August	September	October
Budgeted sales	R200 000	R320 000	R360 000	R240 000

Twenty five percent of the company's sales are for cash and the remainder are on account *(on credit).* Collections from credit sales follow a stable pattern as follows: 50 percent of the month's credit sales are collected in the month of sale, 30 percent on the month after sale and 15 percent in the second month after sale: The amount of cash to be collected in October 2023 is:

(a) R306 000
(b) R276 000
(c) R240 000
(d) R267 000
(e) None of the above

3.8 Batho Limited has budgeted production for the 2023 year as follows:

Quarter	1	2	3	4
Production in units	120 000	160 000	180 000	140 000

Two kilograms of Material A are required for each unit produced. The company has a policy of maintaining inventory of material A on hand at end of each quarter equal to 25 percent of next quarter's production needs. A total of 60 000 kilograms of material A are on hand to start the year. Budgeted purchases for material A for the second quarter would be *(in kilograms)*:

(a) 165 000
(b) 330 000
(c) 400 000
(d) 410 000
(e) None of the above

3.9 Buster Limited has budgeted sales and production for the next quarter as follows:

Month	July	August	September	October
Sales in units	200 000	240 000	?	280 000
Production in units	208 000	256 000	312 000	--

The company has 40 000 units of product on hand at 1 July 2023. A minimum of 20 percent of the following month's sales needs in units must be on hand at the end of each month. Budgeted sales for September 2023 would be *(in units)*:

(a) 376 000
(b) 320 000
(c) 256 000
(d) 368 000
(e) None of the above

3.10. When preparing a Production budget for a manufacturing firm, the required production equals:

(a) Budgeted sales + beginning inventory + desired closing *(ending)* inventory.
(b) Budgeted sales + desired closing *(ending)* inventory - beginning inventory.
(c) Budgeted sales - beginning inventory - desired closing *(ending)* inventory.
(d) Budgeted sales - desired closing *(ending)* inventory + beginning inventory.
(e) None of the above

Question 4	Complete solution

Mr Lex Luther, a hard-working and ambitious entrepreneur, started Capes Ltd, a company that manufactures Spiderman suits, four years ago. Mr Clark recently went to a management accounting and finance seminar where he heard some rather alarming statistics considering business failures. As he now realises how important the management of cash flow is to ensure the company's success, he has decided to institute a formal budgeting process.

Your friend, John, who works in the accounting department, is a little bit rusty when it comes to budgeting as he was writing a Finance test when budgeting was lectured. He has asked you to assist him with a few of the more difficult areas.

You have been given the following information relevant to the next quarter:

- Demand *(budgeted sales)* for the suits will be the following:

	April	May	June	July	August
Units *(suits)*	1,600	2,080	2,016	1,440	1,760

- 25% of all sales are on cash and the balance is on credit. Luther's credit policy allows a 5% discount if the customers pay within the month of the sale. 40% of all customers *(both cash and credit)* take the discount whereas the rest pay within the next month *(in other words the month after the month of the sale)*.

- John has already prepared the sales budget for the quarter ending 31 July:

	May	June	July	Quarter
Units sold *(cash and credit)*	2,080	2,016	1,440	5,536
Selling price per unit	R120	R120	R120	R120
Sales income	R 249,600	R 241,920	R 172,800	R 664,320

- To avoid any stock-outs at the beginning of each month, Kent maintains closing inventory at 25% of the following month's expected sales. The closing inventory for March was 400 units.

- Each suit requires 2 metres of suit fabric. The suit fabric can be purchased at R30 per metre from Lex's preferred supplier, Viyella Fabrics, who can only supply 3,600 metres of suit fabric each month.

- If more than this is required, Lex will have to go to another supplier, Nylon Spinners that charges R35 per metre. Viyella Fabrics allows for Lex to have two months interest free credit. In other words Lex pays Viyella Fabrics in the month after the month in which the fabric was purchased. Nylon Spinners requires Lex to pay in cash.

- Each suit requires 0.5 hours labour time at R10 per hour. The company has 20 employees that get paid per hour worked. The employees can work a total of 160 hours each per month.

- John has already prepared the Manufacturing overhead budget and Selling and administrative expenses budget. All expenses are paid immediately, unless otherwise stated.

	May	June	July	Quarter
	R	R	R	R
Manufacturing overhead	24,600	26,100	21,000	71,700
Selling and administrative	15,560	18,100	11,700	45,360
Total	40,160	44,200	32,700	117,060

- The opening cash balance for May is R35,600.

YOU ARE REQUIRED TO:

Prepare the Cash Budget for the quarter *(May to July)* in a schedule format. Your schedule should reflect the cash budget for each month and the quarter in total.

All workings must be shown in appropriate schedules / budgets *(production, direct materials, direct labour, cash collections and cash disbursements to suppliers)* supporting the Cash Budget.

Question 4	Complete solution

1. Production Budget

	April	**May**	**June**	**July**	**Quarter**
Budgeted sales units	*1,600*	2,080	2,016	1,440	5,536
Add: Desired closing inventory	*520 (2 080 x 25%)*	504 *(2 016 x 25%)*	360 *(1 440 x 25%)*	440	440
	2 150	2 584	2 376	1 880	5 976
Less: Opening inventory	*-400*	-520	-504	-360	-520
Suit production required	***1,720***	**2,064**	**1,872**	**1,520**	**5,456**

2. Direct Materials Budget

	April	**May**	**June**	**July**	**Quarter**
Required production	*1,720*	2,064	1,872	1,520	5,456
Fabric required per suit	*2*	2	2	2	2
Total metres	*3,440*	4,128	3,744	3,040	10,912
Viyella Fabrics	*3,440*	3,600	3,600	3,040	
Price per metre	*30*	30	30	30	
	R103,200	R108,000	R108,000	R91,200	
Nylon Spinners	*0*	528	144	0	
Price per metre	*35*	35	35	35	
	0	R18,480	R5,040	0	

3. Direct Labour Budget

	May	**June**	**July**	**Quarter**
	R	**R**	**R**	**R**
Required production *(from 1)*	2,064	1,872	1,520	5,456
Hours per suit	0.5	0.5	0.5	0.5
Total hours	1,032	936	760	2,728
Rate per hour	10	10	10	10
	10,320	**9,360**	**7,600**	**27,280**

4. Cash Collections Schedule

	May	**June**	**July**	**Quarter**
April credit sales *(1,600 x R120 x 60%)*	115,200			115,200
May: cash sales *R249,600 x 40% x 95%*	94,848			94,848
May: credit sales *R249,600 x 60%*		149,760		149,760
June: cash sales *R241,920 x 40% x 95%*		91,930		91,930
June: credit sales *R241,920 x 60%*			145,152	145,152
July: cash sales *R172,800 X 40 % x 95 %*			65,664	65,664
	R210,048	**R241,690**	**R210,816**	**R662,554**

5. Cash Disbursement Schedule

	May	June	July	Quarter
April	103,200			103,200
May	18,480	108,000		126,480
June		5,040	108,000	113,040
July			0	0
	121,680	**113,040**	**108,000**	**342,720**

6. Cash Budget

	May	June	July	Quarter
Cash collected from sales *(from 4)*	**R210,048**	**R241,690**	**R210,816**	**R662,554**
Cash Outflows	**(172,160)**	**(166,600)**	**(148,300)**	**(487,060)**
Raw material suppliers *(from 5)*	121,680	113,040	108,000	342,720
Labour	10,320	9,360	7,600	27,280
Manufacturing overheads	24,600	26,100	21,000	71,700
Selling and administrative	15,560	18,100	11,700	45,360
Net Cash inflow	37,888	75,090	62,516	175,494
Opening balance	35,600	73,488	148,578	35,600
Closing balance as at 31 July	**73,488**	**148,578**	**211,094**	**211,094**
				Total

Question 5	**(18 marks: 22 minutes)**
Source : Managerial Finance (FTX1005F) - 2012 Supp Q5	**Check answers**

The following is a summary of Gridrod Ltd's expected transactions for June to September 2023.

	June	July	August	September
	R	R	R	R
Sales	220 000	180 000	150 000	120 000
Commission received	45 000	50 000	35 000	20 000
Inventory purchases	54 000	48 000	36 000	30 000
Salaries & wages	84 000	66 000	60 000	48 000
Monthly rent	1 200	1 200	1 200	1 200
Bad debts written off	1 800	1 000	3 600	3 520
General operating expenses	24 000	22 000	24 000	20 000
Repayment of loan			10 000	10 000

Additional information:

(i) On 1 September 2023 the firm expects to have a bank overdraft of R19 200.

(ii) Interest on an investment of R60 000 invested in a fixed deposit for a period of two years at 15% per annum is paid every six months in March and September.

(iii) All of the sales are on a credit basis and the firm collects cash from its credit customers as follows:

- *40% in the month of sale*
- *35% in the second month*
- *% in the third month*
- *Bad debts are negligible*

(iv) 40% of inventory is purchased on a cash basis while the remainder is paid for one month after purchase. In addition to the company has a standing contract with a transport company to deliver inventory to its warehouse. According to the contract, Gridrod Ltd must make minimum monthly cash payments of R4 500 to the transport company.

(v) Included in general operating expenses is depreciation expense of R6 000.

YOU ARE REQUIRED TO:

1. List any three *(3)* factors that must be considered when preparing a Sales budget.

(3 marks)

2. Prepare a detailed Cash budget for September 2023.

(13 marks)

3. Why is it advantageous for a business to prepare a Cash budget.

(2 marks)

Question 5	**Check answers**

1.	Theory	
2.	Cash receipts	R170 000
	Interest received	R4 500
	Cash payments	R111 300
	General operating expenses	R14 000
3.	Theory	

QUESTION 6 (19 MARKS : 23 MINUTES)

Source: Managerial Finance (FTX1005F) - 2014 Class test 2 Q5

Bailey Traders has been experiencing cash flow problems and has decided to prepare cash budgets so that it may anticipate cash surplus and cash shortages so that it can make timeous arrangements with the banks. The following information for the following months has been estimated:

On 1 August 2023 the firm expects to have a favourable current bank account balance of R120 000. The firm adopted a cash management policy that the current bank account should have a minimum favourable balance of R100 000 at the end of each month.

1. Cash and credit sales

	May 2023	**June 2023**	**July 2023**	**August 2023**	**September 2023**
Cash sales *(before trade discount)*	R300 000	R200 000	R300 000	R250 000	R450 000
Credit sales	R200 000	R600 000	R400 000	R300 000	R800 000
Total sales	*R500 000*	*R800 000*	*R700 000*	*R550 000*	*R1 250 000*

- The firm decided that as from 1 July 2023 that 10% trade discount will be given to all cash customers.
- Debtors *(that is cash collected from credit sales)* usually settle their accounts in the following pattern:

  - *75% in the month after credit sales*
  - *20% two months after credit sales*
  - *The balance is regarded as irrecoverable*

2. Purchases of inventory equals 60% of the total monthly sales value *(before trade discount)*. All purchases are on credit are paid by cheque in the following month.

3. Salaries and wages are R60 000 per month and is expected to increase by 10% in August 2023.

4. Administration and other operating expenses are R150 000 per month and includes annual depreciation of R40 000 on office equipment.

5. Equipment with a cost of R100 000 is expected to be purchased on 1 August 2023. A deposit of 15% will be paid on 2 August 2023. The balance plus finance charges and other administration costs of R10 000 will be paid in 10 equal instalments starting on 31 August 2023.

6. It is expected that cash receipts will be in excess of cash payments requirements during August 2023. 20% of August 2023 cash sales *(before trade discount)* must be invested on 31 August 2023 in a fixed deposit investment at PDM Bank. The investment will earn interest of 10% per annum which will be paid together with the fixed deposit at maturity on February 2024.

YOU ARE REQUIRED TO:

1. Name and briefly discuss the two most important purposes *(goals)* of budgeting.
   (maximum 40 words)

   (3 marks)

2. Prepare the Cash budget of Bailey Traders ONLY for August 2023.
   Mark will be awarded for presentation

   (16 marks)

Question 7

a) List the three principal components of the Master Budget.

(3 marks)

a) Which budget serves as the key to the budgeting process? List four factors you would consider in preparing this budget. On which other budgets do this budget impact?

(7 marks)

c) Ziggie Incorporated is a retailer of widgets which it purchases directly from the manufacturer. It has prepared the following budgeted income statement for the month ended June 2023:

i) Budgeted Income Statement - 30 June 2023.

	R m
Sales	448
Less: Cost of sales expense	(248)
Gross profit	200
Less: Other expenses	(150)
Administrative expenses	9
Depreciation expense	50
Selling expenses	22
Accrued advertising expenses	17
Wages expense	50
Prepaid insurance premiums	2
Net Profit	**R50**

ii) **Expected account balances at 30 June:**

Bank - 31/5/2023	R 2 000 000
Inventory / Stock - 31/5/2022	R100 000 000
Inventory / Stock - 30/6/2023	R 52 000 000
Accounts receivable - 31/5/2023	R400 000 000
Accounts payable - 31/5/2023	R380 000 000

iii) A quarter of all sales are on a cash basis, with the balance payable within 30 days of statement date. Bad debts consistently approximate 5% of credit sales.

iv) Forty-five percent of all inventory *(stock)* are acquired on credit. Creditors are paid within 30 days of statement date. All cash-based expenses are paid for as they are incurred.

YOU ARE REQUIRED TO:

Prepare a Cash budget for the month of June 2023.

(15 marks)

Question 8

Flynn, D: "Understanding Finance & Accounting"; Revised 3rd edition; LexisNexis; 2009.

9.18

Hua Lien supplies equipment to Chinese restaurants. A recent concern is the amount of cash available in the bank account. In order to launch a cash budgeting exercise, the following estimates have been provided on 30 June 2023:

	July	August	September
	R	R	R
Credit sales	2,112,000	2,178,000	2 ,302,000
Cash sales	528,000	544,500	575,500
Credit purchases	1,620,000	1,700,000	1,930,000
Operating expenses	450,000	600,000	780,000
Wages	270,000	270,000	270,000
Equipment *(purchased for cash)*		650,000	
Depreciation	50,000	50,000	50,000

The following information relating to cash transactions may also be relevant:

- Bad debts are considered to amount to 5% of all credit sales in a month
- Credit sales *(after the provision for bad debts)* are collected as follows:
  - 50% in the month of sale
  - 30% in the month following the sale
  - 20% two months following the sale

- All credit purchases are paid in the month following the purchase.

- Credit Sales and Credit Purchases for May and June were as follows:

	May	June
Credit sales	1,500 000	1,980,000
Credit purchases	860,000	1,200,000

YOU ARE REQUIRED TO:

Draft a cash budget for each month of the three-month period using the available information. Include the amount of short-term financing required, if applicable. Assume that the cash available in the bank account on 30 June 2023 will be R100,000 and that the business requires at least R90,000 is available at any one time.

Question 9	(24 MARKS: 29 MINUTES)6
Source Managerial Finance (FTX1005F) - 2013 June Q6	

The following information relates to Kelly Ltd. The firm has been experiencing some cash flow problems due to the absence of any proper planning and control of its cash. The financial director approaches you to assist him in the prediction of cash inflows *(cash receipts)* and cash outflows *(cash payments)* for the month of September 2023:

The following information is obtained in your investigation:

1. Expected sales:

July 2023	August 2023	September 2023
R20 000	R30 000	R45 000

20% of the sales is sold on a cash basis while the remaining 80 % is sold on credit.

The firm collects cash from the credit sales customers as follows:

- 50% in the month of sale
  (these customers normally pay before the month end and receive a discount of 10 % on the amounts they pay)
- *30% in the month after sale*
- *20% two months after the sale*
- *Bad debts are negligible*

2. Sales commission expenses are 5% of monthly sales. 50% of the sales commission is paid in the month of sales and the balance in the following month.

3. On 1 April 2023 the firm invested R50 000 on a fixed deposit for six months *(maturing on 30 September 2023)* at Maema Bank earning an interest rate of 12% per annum.

4. The firm rents a premise from Manning Properties at a monthly rental of R1 200. The lease agreement states that the rental shall increase every year by 10% on 1 August.

5. The average salaries and wages account per month is R40 000.

5. The firm's administration overheads expenses are approximately R20 000 per month which includes depreciation on office equipment and furniture and delivery vehicles R3 000.

7. Budgeted purchases of inventory are expected as follow:

July 2023	August 2023	September 2023
R15 000	R25 000	R40 000

All inventory is purchased on credit and 60% is paid in the month after purchase and the balance in the following month.

8. The firm expects to re-furnish the office and reception areas at a total cost of R20 000. The interior design company will agree to receiving a cash deposit of 20% on 1 September 2023 and the balance to be paid in six equal monthly instalments starting on 30 September 2023.

9. The firm expects the opening cash balance on 1 September 2023 to be R45 000 *(favourable)*.

YOU ARE REQUIRED TO:

1. Briefly explain any two advantages of preparing budgets.

(2 marks)

2. Identify any two factors that you would you take into account when preparing a sales budget.

(2 marks)

3. Prepare a Cash Budget for the month of September 2023.

(20 marks)

Question 10

Ignore VAT and Income Tax.

Unless indicated below or by the nature of the expense, assume that all expenses are paid for on a cash basis *(ie. during the month incurred)*.

Woodheads Leather Ltd is a wholesaler of leather, crocodile and ostrich skin belts, bags, wallets and various other baggage items. It sells mainly to exclusive stores and selected flea market operators around Cape Town. The junior bookkeeper was instructed by the chief financial director to prepare a cash budget for March 2023 to evaluate its cash flow position, in case they needed to apply for an overdraft to bolster their cash position when required.

Budgeted income statement for the month of March 2023.

	R
Sales	650 000
Less: Cost of sales	220 000
Gross Profit	430 000
Less: Total operating expenses	*(471 250)*
Staff costs	175 000
Rent	20 000
Selling expenses	107 500
Administrative costs	115 000
Insurance	1 750
Sales commissions	52 000
Net loss before tax	(R41 250)

Other information:

i) A quarter of all sales are on a cash basis. The credit sales are normally collected as follows:

- 50% of the balance payable after 30 days of statement date.
- 45% of the balance is collected two months after the credit sale.
- the remaining 5% of credit sales is considered to be irrecoverable.
- Statements are posted to credit customers within one week after the credit sale was made.

ii) All inventory purchases are on credit. The company was fortunate enough to re-negotiate its credit terms with most of its suppliers and is now required to pay 20% of the credit purchases on the last day of the month in which the goods are bought. The balance must be paid during the second month after the first payment was made.

iii) Expected Account balances at:

	31 March 2023	**28 February 2023**	**31 January 2023**
Bank		R145 500	
Inventory	R36 000	R30 000	R22 000
Accounts receivable	R487 500		
Accounts payable	R305 800 *(including R125 000 from February)*	R285 000 *(including R160 000 from January)*	R160 000 *(all from January's purchases)*

- The Accounts payable balances relate only to amounts owing to suppliers of inventory.

iv) Total sales during the previous months were:

January 2023	R350 000
February 2023	R200 000

v) Included in selling expenses is an amount of R14 000 for advertising of which only R12 000 has been paid by 31 March 2023.

vi) The annual insurance premium of R21 000 was paid on 1 February 2023 and is apportioned to expenses evenly over the year.

vii) Sales commissions amount to 8% of total sales of which one-half is paid during the month of sale and the balance at the end of the month thereafter.

viii) Administration expenses include depreciation on office equipment and furniture of R6 500.

YOU ARE REQUIRED TO:

Prepare a detailed cash budget for the month of March 2023.

MANAGERIAL FINANCE (FTX1005F)
TUTORIAL 10
TIME VALUE OF MONEY
HAND IN DATE: Monday 1 May 2023

1. TRUE / FALSE

For each of the following statements indicate whether they are True or False. Please provide a brief explanation if a statement is false.

1.1 Present value is a current rand value that must be invested today at a given interest rate over a specified predetermined period, to equal of a future amount.

1.2 Present value tables are based on compound interest and not on simple interest.

1.3 Amounts discounted a high interest rate will have a higher net present value than amounts discounted with a low interest rate.

1.4 An amount compounded 12 times a year at an annual interest rate of 12% will result in a bigger future value than the same amount compounded quarterly at an annual interest rate of 12%.

1.5 An annuity is a stream of equal periodic cash flows over a specified future time period.

1.6 A perpetuity is an annuity that's provides a continual annual cash flow for an infinite time period.

1.7 Nominal rate is the same as the effective annual rate.

1.8 Interest paid *(earned)* on both the original principal borrowed *(lent)* and previous interest earned is often referred to as simple interest.

1.9 The rate of interest is used to express the time value of money.

1.10 For a given nominal interest rate, the more numerous the compounding periods, the less the effective annual interest rate.

1.11 In 2 years you are to receive R10,000. If the interest rate were to suddenly decrease, the present value of that future amount to you would increase.

1.12 Assume that the interest rate is greater than zero. Would you prefer R600, R1 000 and R400 cash-inflow streams totalling R2 000? The cash flows are listed in order for Year 1, Year 2, and Year 3 respectively.

1.13 All other things remaining the same, an annuity received at the beginning of each period has more present value than does one received at the end of each period.

1.14 Investors in the firm also expect to be compensated for the erosion in the value of the investment capital.

1.15 An annuity is the receipt and not a payment of a fixed amount over a number of years or periods.

2. MATCHING QUESTIONS

Match each term with the appropriate definition by writing the appropriate letter in the space provided.

		Term		Definition
	2.1	Time value of money	(a)	Interest earned on the original amount invested plus interest earned from previous periods that was capitalised *(added to original amount).*
	2.2	Simple interest	(b)	The process of paying off a long-term loan by making periodic payments which are part interest and capital *(Repayment of loan)*.
	2.3	Compound interest	(c)	Interest earned once on the original amount invested.
	2.4	Nominal interest rate	(d)	The value of R1 today is different to R1 received in the future.
	2.5	Effective Annual Rates *(EAR)*	(e)	The stream of cash-flows that are forever.
	2.6	Treasury Bills	(f)	The initial interest rate quoted by a financial institution on investments.
	2.7	Perpetuities *(Consols)*	(g)	Annuity payable at the beginning of the month is an annuity due.
	2.8	Amortisation	(h)	The actual rate of interest earned on an investment *(original amount and interest).*
			(i)	The government borrows money from the general public.

3. MULTIPLE CHOICE QUESTIONS *(MCQ)*

Select the most correct answer.

3.1 The use of future value to calculate the present value is called:

(a) Compounding.
(b) The annuity method.
(c) Discounting.
(d) Present value approach.
(e) Indexing.

3.2 A series of equivalent cash flows is called a (an):

(a) Accretion.
(b) Payback.
(c) Accrual.
(d). Accumulation.
(e). Annuity.

3.3 You estimate that it will take five years to complete your university education. Your parents want to invest enough money today at 12 per cent to enable you to withdraw R5,000 at the end of each year for the next five years with nothing left at the end of the five-year period. How much money do they need today?

(a) R8,810.
(b) R18,025.
(c) R25,000.
(d) R2,825.
(e) R31,765.

3.4 If you invested R5 000 five years ago at 12% compounded quarterly, how much would your investment be worth today?

(a) R5 796
(b) R8 812
(c) R9 031
(d) R2 837
(e) R2 768

3.5 Mabilele Ltd has had a 12% per annum long-term loan of R100 000 outstanding for 6 months of the financial year. The company has an effective tax rate of 30% and is a profitable company. The real after-tax cost of the loan to the company for the financial year is:

(a) R9 000
(b) R12 000
(c) R2 700
(d) R4 200
(e) R8 400

3.6 Roberto Mancini wishes to purchase a trophy in 2 years time. The trophy will cost R1 200m in 2 years time. At an interest rate of 12% per annum compounded monthly, how much money would he have to invest today to buy this trophy in 2 years time?

(a) R1 015.00m
(b) R645.15m
(c) R745.12m
(d) R852.12m
(e) R945.12m

3.7 Arsene Wenger will receive an annuity of R50m every year for 20 years. The current market interest rate is 18% per annum compounded annually. What will the value of this annuity be at the end of the 20 years?

(a) R7 331.40m
(b) R6 331.4
(c) R525.6m
(d) R689.15m
(e) R3 786m

Use Formulae or your interest factor tables from the back of your modules.

FV = PV x $(1+i)^n$ **FVA = I x $[((1+i)^n-1)/i]$**

PV = FV x $(1/(1+i)^n)$ **PVA = I x $[(1- (1/(1+i)^n)/i]$**

Where:

FV	=	Future value		m	=	Number of compounding periods
PV	=	Present value		i/m	=	Interest per compounding period
n	=	Number of years		n x m		Number of periods
i or r	=	Interest rate				

4.1 FUTURE VALUES

Calculating Future values (FV)

FV	=	FV = PV x $(1 + i/m)^{nm}$

1. Assume you deposit R1 000 today in an account that pays 8% per cent interest per annum. How much will you have in 4 year's time.

Suggested answer

FV = PV $(1+i)^n$	=	R1 000 x $(1+0.8)^4$	=	R1 360.50

2. You have just made your first R2 000 contribution to your individual retirement account. Assuming you earn a 10 percent return *(compounded monthly)* and make no additional contributions, what will your account be worth when you retire in 45 years? What if you wait ten years before contributing? *(Does this suggest an investment strategy?)*

Suggested answers

45 years	FV = PV x $(1+i/m)^{nxm}$	=	R2 000 x $(1+0.00833)^{12x45}$	=	R2 000 x $(1+0.00833)^{540}$	=	R176 708.36
35 years	FV = PV x $(1+i/m)^{nxm}$		R2 000 x $(1+0.00833)^{12x35}$	=	R2 000 x $(1+0.00833)^{420}$	=	R65 277.29

Question 1	**P-42**

Using the future value formulas to calculate the Future Value Interest Factor *(FVIF)* = **$(1+i)^n$**. **Compare your results to the time value tables provided in your notes:**

Case	Interest rate, i	Number of periods, n	Future Value Interest Factor *(FVIF)*
1.	12%	2	
2.	6%	3	
3.	9%	2	
4.	3%	4	
5.	8%	5	

Question 2A *(Compounded annually)*

P-44

For each of the cases shown below in the following table, calculate the Future Value of the single cash flow deposited today that will be available at the end of the deposit period, if the interest is **compounded annually** at the rate specified over the given period.

Case	Single cash flow	Discount rate	End of years
1.	R 400	5%	20
2.	R9 000	8%	7
3.	R20 000	9%	10
4.	R50 000	10%	12
5.	R74 000	12%	5
6.	R80 000	15%	9

Question 2B *(Compounded semi annually)*

For each of the cases shown below in the following table, calculate the Future Value of the single cash flow deposited today that will be available at the end of the deposit period, if the interest is **compounded semi-annually** at the rate specified over the given period.

Case	Single cash flows	Discount rate	End of years
1.	R 400	5%	20
2.	R9 000	8%	7
3.	R20 000	9%	10
4.	R50 000	10%	12
5.	R74 000	12%	5
6.	R80 000	15%	9

Question 2C *(Compounded quarterly)*

For each of the cases shown below in the following table, calculate the Future Value of the single cash flow deposited today that will be available at the end of the deposit period, if the interest is **compounded quarterly** at the rate specified over the given period.

Case	Single cash flow	Discount rate	End of years
1.	R 400	5%	20
2.	R9 000	8%	7
3.	R20 000	9%	10
4.	R50 000	10%	12
5.	R74 000	12%	5
6.	R80 000	15%	9

Question 2D*(Compounded monthly)*

For each of the cases shown below in the following table, calculate the Future Value of the single cash flow deposited today that will be available at the end of the deposit period, if the interest is **compounded monthly** at the rate specified over the given period.

Case	Single cash flow	Discount rate	End of years
1.	R 400	5%	20
2.	R9 000	8%	7
3.	R20 000	9%	10
4.	R50 000	10%	12
5.	R74 000	12%	5
6.	R80 000	15%	9

Question 3 E45

Anita is a friend of yours. She has just inherited sum money from a distant relative. She received R150 000 and is looking for an investment that would give her the maximum return. Savings Bank offers an account with an interest rate of 12% per annum that is compounded semi-annually, while another Bank Pepco offers 8% per annum that compounds interest quarterly.

YOU ARE REQUIRED TO:

Calculate the value of the two investments at the end of two years and recommend which one Anita should choose.

4.2 PRESENT VALUES

Calculating Present values (PV)

PV	=	FV x $\frac{1}{(1+i/m)^{nm}}$

1. Suppose you have just celebrated your 19th birthday. A rich uncle set up a trust fund for you that will pay you R100 000 when you turn 25. If the relevant discount rate is 11 percent, how much is the fund worth today?

Suggested answer

Present Value	=	$\frac{FV}{(1+i)^n}$	=	$\frac{R100\,000}{(1+0.11)^6}$	=	$\frac{R100\,000}{1.8704}$	=	R53 464.49

2. You are committed to owning a speedboat of R150 000. If you believe your unit trust investment can achieve an 11 percent annual return and you want to buy the boat in ten year's time, how much must you invest today?

Suggested answer

Present Value	=	$\frac{FV}{(1+i)^n}$	=	$\frac{R150\,000}{(1+0.11)^{10}}$	=	$\frac{R150\,000}{2.839}$	=	R52 835.50

Question 1	**P-411**

For each of the following cases shown in the following table, calculate the Present Value of the cash flow, discounting at the rate given and assuming that the cash flow is received at the end of the period:

Case	Single cash flow	Discount rate	End of years
1.	R14 000	12%	4
2.	R56 000	8%	20
3.	R20 000	14%	12
4.	R300 000	11%	6
5.	R90 000	20%	8

Question 2	**P-412**

Answer each of the following questions:

1. What single investment made today, earning 12% annual interest, will be worth R6 000 at the end of six years?

2. What is the present value of R6 000 to be received at the end of 6 years if the discount rate is 12% per annum?

3. What is the most you would pay for a promise to repay you R6 000 at the end of six years, if your opportunity cost is 12% per annum?

4. Compare, contrast and discuss your findings in parts 1 and 3.

Question 3	P-415

You have just won a lottery that promises to pay you R1 000 000 in exactly ten years from today. The R1 000 000 payment is guaranteed by the government, opportunities exist to sell the claim today for an immediate cash payment.

1. What is the least you will sell your claim for if you are able to earn the following rates of return on similar risk investments during the ten-year period?
   1.1 6%
   1.2 9%
   1.3 12%

2. Re-calculate the part 1 assuming that the R1 000 000 will be received in 15 years and not 10 years.

4.3 ANNUITIES

ORDINARY ANNUITIES (End)			ANNUITIES DUE (Begin)				
FVA_{ord}	=	$I \times \frac{(1 + i/m)^{nm} - 1}{i/m}$	FVA_{due}	=	$I \times \frac{(1 + i/m)^{nm} - 1}{i/m}$	x	$(1+ i/m)$
PVA_{ord}	=	$I \times \frac{(1 - [(1/(1 + i/m)^{nm}]}{i/m}$	PVA_{due}	=	$I \times \frac{(1 - [(1/(1 + i/m)^{nm}]}{i/m}$	x	$(1 + i/m)$

Question 1	P-441

To supplement your retirement in exactly 42 years, you estimate that you need R220 000 by the end of 42 years from today. You plan to make equal end of year deposits into an account that pays interest at 8% per annum.

1. How large must the annual deposits be to create the R220 000 by the end of the 42 years.

2. If you can only afford to deposit R1 000 per year into the account, how much will you have accumulated by the end of the 42nd year.

Question 2	

1. Kenny Dalglish wishes to purchase a trophy in 2 years time. The trophy will cost R1 200m in 2 years time. At an interest rate of 18% per annum compounded monthly, how much money would he have to invest today to buy this trophy in 2 years time?

2. Arsene Wenger will receive an annuity of R50m every year for 20 years. The current market interest rate is 12% per annum compounded annually. What will the value of this annuity be at the end of the 20 years?

Question 3	421

Bob Barnett, a 25 year old university graduate, wishes to retire at 65 years old. To supplement his official pension fund he can deposit R5 000 per month into an investment that earns an annual return of 12% per annum that is compounded monthly. ***Assume all amounts are deposited at the end of the year.***

1. If Bob makes an annual deposit of R5 000, how much will he have accumulated at by the end of his 65th birthday?
2. If Bob waits until his 35th birthday to start making deposit of R5 000, how much will he have accumulated at by the end of his 65th birthday?

Question 4	421

11.1.

Source: Flynn, D: "Understanding Finance & Accounting"; Revised 3rd edition; LexisNexis; 2009.

The following returns were achieved after the appropriate investment had been held for one year:

(a) Linda Msepe received R450 from the bank for an investment of R3 000.

(b) Jos Naidoo invested R9 000 in a sole proprietorship at the beginning of the year and was paid a fair salary each month. The business recorded a net income of R1 200.

(c) Maria Nkosi invested R10 000 in a close corporation for a 10% membership share *(members interest)*. The Close corporation reported a net profit after tax of R20 000, but the members decided to make no profit distribution.

(d) Peter Simpson purchased 200 shares in Datatec for R49 each. During the year he received dividends per share of R6.50. The shares were priced at R53.20 per share at the end of the year.

YOU ARE REQUIRED TO:

Calculate the return on investment achieved on each of the investments as a percentage of the capital sum invested. *(Where personal income tax is applicable assume a tax rate of 30%).*

11.10

Source: Flynn, D: "Understanding Finance & Accounting"; Revised 3rd edition; LexisNexis; 2009.

You win a jackpot and want to put aside a sum of money to use for the holiday of a lifetime, requiring an amount R40 000 in six years' time. A fixed deposit at 16% per annum compounded interest is available for the investment. Find the amount you must invest now.

11.11

Source: Flynn, D: "Understanding Finance & Accounting"; Revised 3rd edition; LexisNexis; 2009.

Find the amount that will be collected from an investment of R7 500 at 16% per annum at the end of 8 years compound interest.

11.12

Source: Flynn, D: "Understanding Finance & Accounting"; Revised 3rd edition; LexisNexis; 2009.

An investor wishes to have an amount of R70 000 available in five years' time. How much must be invested at the end of each year to make this possible if interest in compounded at 16% per annum.

11.16

Source: Flynn, D: "Understanding Finance & Accounting"; Revised 3rd edition; LexisNexis; 2009.

An investor wishes to receive an amount of R12 000 in six years' time. A fixed deposit at 14% per annum compound interest is available for the investment. Find the Present Value *(PV)* of the investment.

Question 5 (15 MARKS: 18 MINUTES)

Source: Managerial Finance (FTX1005F) - 2014 June Q5

Marks are awarded for showing the formulae used, for clearly showing the variables used, and for clearly showing all workings.

You have been watching the travel programme Top Travel which featured the famous Orient Express rail trip from Istanbul in Turkey to London and decide that this is definitely something you want to do. The current cost is $17,840 and the exchange rate is $1:R10.76 which translated to R191 958 ignoring cents. You are 25 years old and are about to start working. You have set yourself a 10 year goal to save for this once in a life-time trip. You have been discussing this with your family and doing some research:

1. Future prices

Venice Simplon the company running the Orient Express advises that ticket prices have followed the average inflation rate in Europe which has been 6% per annum and that this would be a good basis on which to calculate future ticket prices.

2. Your wealthy uncle

Your very wealthy uncle wants to give you a graduation present and when he hears about your travel plan he offers to give you a lump sum today to invest for this project. You would be able to invest the lump-sum in a fixed deposit account paying 8% per annum compounded quarterly.

3. The hard way to save

You may have to do this by setting aside an amount each year. Since you will be working as a consultant and you will be self-employed it will be too difficult to save monthly but you might be able to set aside some money at the end of each year and put this into a special account which pays 10% compounded annually.

YOU ARE REQUIRED TO:

1. You remember that when performing time value of money calculations you should always use the nominal interest rate *(without compounding)* in the formula because the formula performs the compounding operation. What is another name for the nominal interest rate commonly used by banks and financial text-books?

   (1 mark)

2. Whilst discussing your various investment options with the family your siblings wanted to know what the difference was between <u>simple interest</u> and <u>compound interest</u>. Briefly define these terms.

   (2 marks)

3. If inflation is likely to be 6% per annum how much is a ticket on the Orient Express likely to cost in 10 years' time?

   (3 marks)

4. **Ignore** <u>your answer in part 1 above. Assume that in 10 years from today the cost of the Orient Express trip with some spending money will be R360 000.</u> How much must your wealthy uncle give you today to enable you to pay for the trip 10 years from today if you can invest the amount in a special account paying 8% per annum compounded quarterly?

   (5 marks)

5. **Again ignore** <u>your answer in part 1 above. Assume that in 10 years from today the cost of the Orient Express trip with some spending money will be R360 000</u>. If you have to resort to saving the hard way what is the amount you should save each year at the end of the year in an account earning 10% per annum compounded annually to pay for the trip in 10 years' time?

   (4 marks)

QUESTION 6	(19 MARKS: 23 MINUTES)

Source: Managerial Finance (FTX1005F) - 2013 April test Q4

1. You have received a bequest of R3 000 from a distant aunt and deposit it an account offering 12% per quarter. How much will you have in the account after 3 years? **Show the formula used and all workings.**

(3 marks)

2. Your father has taken out an educational policy for you for R40 000 but he got the dates wrong and the policy will only be paid out in 4 year's time. You would like the proceeds today. After approaching the insurance company they have agreed to pay this policy sooner provided he cedes the policy to them. If 8% is a reasonable rate of return with annual compounding what amount should your father accept today? **Show the formula used and all workings.**

(3 marks)

3. Joe Cool plans to hit the campus scene. Apart from tuition he needs R2 000 pocket money for each of the next four years to be, payable at the end of each year *(Joe is cheap!)*. At a 6% annual interest rate, how much would have to be invested today to provide for all his future pocket money needs payments? **Show the formula used and all workings.**

(4 marks)

4. A first year student has decided that they can save R200 a month by giving up frequent visits to the vending machines at UCT. If he can earn 12% compounded monthly on this money, how much will he have in four years assuming he makes the deposits at the end of each month? **Show the formula used and all workings.**

(4 marks)

5. Joe Nomoney just inherited R20 million from his uncle Rich Moneybags, payable in 20 equal instalments of R1 million each at the end of each year. Sly Slick is offering to buy Joe's inheritance of 20 instalments of R1m and pay him R15 million today. Joe's opportunity cost of capital is 6%. What is going to have the greatest value today – the inheritance or the R15million?

Show the formula used and all workings.

(5 marks)

The following formula might be useful and INTEREST FACTOR TABLES are included with the question paper.

$$FV = PV\ (1+i/m)^{n\,m}$$

$$PV = FV\ x\ \frac{1}{(1+i/m)^{n\,m}}$$

$$FVA_{i,n} = I\ x\ \left[\frac{(1+i/m)^{n\,m}-1}{i/m}\right]$$

$$PVA_{i,n} = I\ x\ \left[\frac{\left(1-(1/(1+i/m)^{nm})\right)}{i/m}\right]$$

MANAGERIAL FINANCE (FTX1005F)
TUTORIAL 11
BUSINESS VALUATIONS
HAND IN DATE: Monday 8 May 2023

1. TRUE / FALSE

For each of the following statements indicate whether they are True or False. Please provide a brief explanation if a statement is false.

1.1 The two most common methods of calculating cost of equity (ordinary share capital, share premium and retained earnings) are the Dividend growth model and the Capital Asset Pricing Model *(CAPM)*.

1.2 The expected required return of equity, R, can be written as:

R	=	$\frac{D_1}{P_1}$	+	g

1.3 If a company dividend grows at a constant rate, g, then the share price can be written as:

P_0	=	$\frac{D_1}{R - g}$

1.4 Value and price are synonymous.

1.5 The Net Asset value approach to valuation lists all the liabilities and places a value on them and then deducts Assets.

1.6 The underlying concept to the replacement cost method to valuation is that a business stops its operations and sells its Assets.

1.7 The coupon rate is the same as the discount rate.

1.8 CAPM is used to calculate the cost of debt.

1.9 CAPM formula is written as $R_f + B (R_f - R_m)$.

1.10 CAPM is used to calculate the required rate of return on Ordinary shares.

1.11 An investment which offers the payment of a fixed amount every year with no date of termination is called a preference share.

1.12 Valuations relate to future expectations only.

1.13 Valuation is made possible by the availability of alternative bases.

1.14. When valuing debt, the required rate of return is often readily available.

1.15. For non-cumulative preference shares, once a dividend is missed, it is never paid.

2. MATCHING QUESTIONS

Match each term with the appropriate definition by writing the appropriate letter in the space provided.

		Term		Definition
	2.1	Relative valuation techniques	(a)	The technique to value a bond, which present values the two cash flow streams from that instrument until maturity date when the bond is repaid.
	2.2	Discounted cash flow valuation technique	(b)	The rate of return that an individual ordinary shareholder expects to receive on their investment.
	2.3	Capitalisation	(c)	Techniques to determine the value of an asset by comparing this asset to a similar asset whose value is known.
	2.4	Required rate of return for ordinary equity r	(d)	The opposite of discounting. The value obtained by dividing cash flow from an asset by the required rate of return for that asset.
	2.5	Growth rate g	(e)	Values an ordinary share under the assumption that the dividends grow at a constant rate forever.
	2.6	Market capitalisation	(f)	The expected future change in dividends expressed as a percentage.
	2.7	Dividend Growth Model	(g)	Techniques that determine the value of the asset by discounting or present valuing the cash flows of the asset at a percentage rate *(required rate of return)* for similar assets.
	2.8	Bond valuation	(h)	Total value of the firm obtained by multiplying the market price of the share by the number of shares in issue.
			(i)	

3. MULTIPLE CHOICE QUESTIONS *(MCQ)*

Select the most correct answer.

3.1 The Capital Asset Pricing Model *(CAPM)* is based on four basic assumptions. Which one of the following statements is not an assumption of the CAPM model?

(a) All investors are rational and will hold a diversified portfolio of financial assets.
(b) All company specific risk *(unsystematic risk)* can be eliminated by means of diversification.
(c) Market specific *(systematic risk)* cannot be eliminated, but it can be measured by Beta *(B).*
(d) The stock markets are inefficient, in other words, they do not reflect market prices that are consistent with all the principles of risk and expected return.
(e) None of the above

3.2 The company expects to pay a dividend of R3 per ordinary share next year. The company is expected to maintain a constant and indefinite growth rate in its dividends of 8 %. The shares currently sell for R24 each. Using the Dividend Growth Model, the company's cost of ordinary equity is:

(a) 18.9 %
(b) 0.205 %
(c) 20.5 %
(d) 19.5 %
(e) 21.00 %

3.3 The required rate of return on the ordinary share is 15% and the company pays a cash dividend of R4.50 and plans to maintain it at that level into the foreseeable future. The value of the ordinary share is:

(a) R35
(b) R25
(c) R30
(d) R45
(e) None of the above

3.4 A R100 government bond with a 15% coupon rate is considered for investment. Calculate the value of the bond if the required market rate for the risk-free bonds is 13%, and that the bond matures in 10 years. Answer should be correct to R1.

(a) Below R100
(b) R100
(c) R112
(d) R114
(e) R111

3.5 Determine the cost of equity given the following information: the next dividend that the company plans to pay at the end of the year is R2.70 per share, the current share price is R45 per share and the expected growth rate is 9%.

(a) 6%
(b) 15%
(c) Between 9% and 15%
(d) Above 15%
(e) Not possible to determine with the given information.

3.6 An investment in a 4% Non-redeemable government bond with a nominal value of R100 and that was issued in 1960 is being considered. The market return is 26%, the bank overdraft rate is 22% and the risk-free rate is 14%. Hence the closest value of the bond in the capital market at this time is: *(correct to the nearest R1)*

(a) R15
(b) R28
(c) R18
(d) It is worthless
(e) R100

3.7 Chipangwela Ltd issued non-redeemable preference shares many years ago with a dividend of R7 per share. Over the years the required rates of return have increased to 14%. Given the information above, the current value of the preference share correct to the nearest rand is:

(a) Below R50
(b) R52
(c) R42
(d) R50
(e) R100

Question 4	10 marks
	Complete solution

When valuing the share of a private company one has to make use of the price-earnings ratio of a similar listed company or an industry average of listed companies in the same industry as the private company being valued in order to arrive at a reasonable estimate of the share price. Based on this knowledge, let's assume that you are an asset manager for the Eland Enough Lodge and Real Estates ESQ (Pty) Limited, and that you have been asked to establish the share value of this company.

In your endeavour to establishing the share value of the Eland Enough Lodge and Real Estates ESQ (Pty) limited, you discovered that the company had 200 000 shares in issue and also that it had a reported Net profit after tax for the year of R750 000. You also discovered that there are three listed companies in the same industry as the Eland Enough Lodge and Real Estates ESQ (Pty) Limited, and these companies had PE ratios of 10, 8 and 12 respectively in the year under consideration.

YOU ARE REQUIRED TO:

1. Calculate the share value of the Eland Enough Lodge and Real Estates ESQ (Pty) Limited.
2. Calculate the value of Eland Enough Lodge and Real Estates ESQ (Pty) Limited as a whole.

Note to the student: Show all your calculations including formulae for all your calculations.

Question 4	10 marks
	Complete solution

Suggested answers:

1.

Vs = P/E x EPS

Earnings per Share *(EPS)*	Net profit after tax (NPAT)	=	R750 000	=	R3.75
	Number of ordinary shares in issue		200 00		
Average P/E	(10+8+12)	=	10 times		
Therefore Value per share (Vs)	= P/E x EPS = 10 x 3.75	=	R37.50		

2.

Total value = value per share multiply by the number of shares in issue

= R37.50 x 200 000

= R7 500 000

Question 5	(10 marks: 12 minutes)

You are provided with the following information with regards to Share A and B. Share A and B are listed on the JSE and these shares have betas of 0.75 and 1.5 respectively. Furthermore, you are told that the rate on the NCD *(National Certificate of deposit)* Treasury Bill is 13% *(Hint: this is the risk-free rate)* and that the market return is 22%.

YOU ARE REQUIRED TO:

Calculated the required rate of return for each of the two shares and explain the differences in the required rate of return. Show all your calculations and formulae used for each part of the question.

Question 5	10 marks

Suggested answer:

$R_A = R_f + \beta (R_m - R_f)$
$R_A = 13\% + 0.75*(22\% - 13\%)$
$R_A = 19.75\%$

$R_B = R_f + \beta (R_m - R_f)$
$R_B = 13\% + 1.5*(22\% - 13\%)$
$R_B = 26.5\%$

- The differences in the required rate of return reflect the differences in the level of market risk.
- Share B is riskier relative to share A.
- Thus, if market returns decrease in a bear market, the return on share B will decrease relatively more than the market average.

Question 6	10 marks

When valuing the share of a private company one has to make use of the Price-Earnings ratio of a similar listed company or an industry average of listed companies in the same industry as the private company being valued in order to arrive at a reasonable estimate of the share price. Based on this knowledge, let's assume that you are an asset manager for A Limited, and that you have been asked to establish the share value of A Limited.

In your endeavour to establishing the share value of the A Limited, you discovered that the company had 400 000 shares in issue and also that it had a reported Net Profit After Tax for the year of R1 500 000. You also discovered that there are two listed companies in the same industry as A Limited and these companies had PE ratios of 12.5 and 9.6 respectively in the year under consideration.

YOU ARE REQUIRED TO:

1. Calculate the share value of the A Limited.

2. Calculate the value of A Limited as a whole.

Question 7	

12.1

Source: Flynn, D: "Understanding Finance & Accounting"; Revised 3rd edition; LexisNexis; 2009.

Explain why investors choose to invest in shares, rather than placing their money into a bank account that earns interest.

12.2

Source: Flynn, D: "Understanding Finance & Accounting"; Revised 3rd edition; LexisNexis; 2009.

List the two sources of return that an investor in the share market may expect to receive, and discuss the circumstances under which one may be preferred to the other.

12.3

Source: Flynn, D: "Understanding Finance & Accounting"; Revised 3rd edition; LexisNexis; 2009.

Explain why investors may expect to receive a lower return from a loan to a company than from buying its shares.

12.4

Source: Flynn, D: "Understanding Finance & Accounting"; Revised 3rd edition; LexisNexis; 2009.

Explain, from the perspective of the financial manager of a company, the difference between the terms:

- Cost of equity
- Cost of debt
- Cost of capital.

MANAGERIAL FINANCE (FTX1005F)
TUTORIAL 12
CAPITAL BUDGETING
HAND IN DATE:

1. TRUE / FALSE

For each of the following statements indicate whether they are True or False. Please provide a brief explanation if a statement is false.

1.1 A cash savings in costs can be evaluated equally as an advantage as cash inflows resulting from additional cash sales.

1.2 In discounted cash flow analysis net cash flows occurs at the end of the financial year.

1.3 The payback period uses accounting profits to determine the time period when a project pays back the initial investment.

1.4 The recovery of working capital at the end of the life of the project would be recognised as taxable cash inflow.

1.5 The net present values of a machine will be bigger as a result of tax savings from depreciation.

1.6 Losses realised from the sale of machinery will provided a tax shield and tax savings similar to that as depreciation deductions.

1.7 When the residual value of a machine is not taken into account when calculating annual depreciation, any cash proceeds received from the sale of the machine at the end of the machine's life should be recognised as taxable income.

1.8 When using information to evaluate capital budgeting decisions, the emphasis is placed on accounting profits.

1.9 If the rate of return from a project is less than the cost of capital then the project should be accepted from an economic viewpoint.

1.10 A firm's cost of capital is the interest rate that it must pay for non-current liabilities.

1.11 Both the Payback period and Internal rate of return methods use accounting profits to determine whether or not future capital projects should be accepted or not.

1.12 When using the Internal rate of return method to evaluate a capital project the Net Present Value *(NPV= Cash inflows - Cash outflows)* must be negative.

1.13 The release of working capital at the end of the project's life would be recognised as taxable income.

1.14 An investment has net annual cash inflows of R10 000 each in the next two years. At cost of capital of 12%, the present value of this investment is R17 901.

1.15 The post-audit of an investment project is a basically a follow up after a project has been approved and accepted to determine if all the mathematical *(arithmetic)* calculations are accurate.

1.16 If the present value of estimated net future cash flows is less than the original investment at a cost of capital of 12%, then the Internal Rate of Return *(IRR)* must be greater than 12%.

2. MATCHING QUESTIONS

Match each term with the appropriate definition by writing the appropriate letter in the space provided.

		Term		Definition
	2.1	Capital Investment appraisal	(a)	The evaluation process by which management plans, evaluates and controls future long-term investment decisions involving property plant and equipment.
	2.2	Payback Period method *(PP)*	(b)	A capital investment appraisal technique to determine how quickly the discounted future cash *(inflows and outflows)* pays back the initial investment.
	2.3	Internal Rate of Return *(IRR)*	(c)	The estimated surplus of cash inflows over cash outflows from a project.
	2.4	Discounted Payback Period *(DPP)*	(d)	A series of future cash inflows or outflows at fixed times.
	2.5	Accounting Rate of Return *(ARR)*	(e)	A process followed by management to allocate limited investment funds among competing investment opportunities.
	2.6	Net cash inflow	(f)	A capital investment appraisal technique using non-discounted cash flows *(inflows and outflows)* to determine how quickly the investment will pay back the initial investment.
	2.7	Discounting	(g)	A capital investment appraisal technique using discounted cash flows *(inflows and outflows)* and where the Net Present Value equals 0. The discount rate that makes the Net Present Value = 0. The discount rate that makes the Present Value of future cash flows equal to initial cost / investments.
	2.8	Annuity	(h)	This method uses Annual Accrual profits and average investment to evaluate the financial viability of capital investments.
			(i)	A process whereby the estimated net future cash inflows from a project are discounted to their present value using an appropriate discount rate *(interest rate)* also known as the cost of capital.

3. MULTIPLE CHOICE QUESTIONS *(MCQ)*

Select the most correct answer.

3.1 Capital budgeting is a tool required for:

(a) Long-term decisions.
(b) Higher sales and greater profits.
(c) Adequately financing various short- and long-term aspects of an organisation.
(d) Lowering sales revenue in relation to retained earnings.
(e) Adequate capital investment in areas where it is least needed.

3.2 Capital budgeting decisions involve decisions about:

(a) Emergency situations.
(b) Future cash inflows and cash outflows.
(c) Short run planning situations.
(d) Cash inflows and outflows in current years.
(e) Planning for the acquisition of capital.

3.3 If the sum of all the present values of all future cash inflows and cash outflows relating to a particular capital expenditure project discounted at the company's cost of capital is positive, it is an indication that:

(a) The discount rate is not the correct cost of capital for this company.
(b) It is the maximum amount that should be paid for the project.
(c) Investment is not the best alternative.
(d) Return on the investment expenditure exceeds the company's cost of capital.
(e) The cost of capital has been incorrectly calculated.

3.4 Fiscal Cliff Limited purchased a new machine. The financial information of the machine is as follows:

Purchase cost	R100 000
Annual cost savings	R30 000
Life of the machine	5 years

Assume that the machine will be depreciated on the straight-line method and has residual value of R10 000. The payback period of the machine will be:

(a) 3 years
(b) 3.3 years
(c) 8 years
(d) 2.9 years
(e) 3.5 years

3.5 A new machine will cost R140 000. The machine will result in annual cash cost savings of R30 000 per year for ten years, after which it will be sold for R6 000. If the company has a cost of capital of 14% the machine's net present value will be:

(a) R16 480
(b) -R16 480
(c) R18 101
(d) R47 776
(e) R20 500

3.6 Moyce Limited invested in a four-year project. Limited expected cost of capital *(rate of return is 8 %)*. Cash inflow from the project will be:

Year 1	Year 2	Year 3	Year 4
R4 000	R4 400	R4 800	R5 200

Assume that the company expects to realise a positive Net Present Value *(NPV)* of R1 000 from the project, what was the amount of the original investment made at the beginning of the project:

(a) R2 822
(b) R14 108
(c) R4 822
(d) R16 108
(e) R15 108

3.7 A new machine will cost a company R300 000. The machine will result in annual profits as shown below. At the end of 3 year it will be sold for 10% of the original cost.

Year 1	Year 2	Year 3
R40 000	R35 000	R30 000

If the company has a cost of capital of 15% the machine's Net Present Value *(NPV)* will be:

(a) R283 354
(b) R6 186
(c) -R13 539
(d) R306 186
(e) None of the above

3.8 The following are cash flow techniques to evaluate capital budgets:

(a) Net present value method (NPV), Payback period and Discounted payback period
b) Accounting rate of return, Internal rate of return (IRR) and Discounted payback period
(c) Net Present Value method, Accounting rate of return and Payback period
(d) Cash inflows and outflows in current years.
(e) Profitability index, Accounting rate of return and Payback period.

3.9 The process by which management plan, evaluates and controls long term investments decisions involving property, plant and equipment is called

(a) Absorption cost analysis
(b) Cost volume profit analysis
(c) Capital investment appraisal
(d) Marginal cost analysis
(e) None of the above

3.10 The method that evaluates the capital investment proposals that divides the estimated average annual accrual profits by the average investment:

(a) Payback period
(b) Discounted payback period
(c) Accounting rate of return
(d) Internal rate of return
(e) None of the above

3.11 The primary advantages of the accounting rate of return method are its ease of computation and the fact that:

(a) It is useful to determine a firm's liquidity
(b) Less loss from changes in economic conditions and obsolescence
(c) It places importance on the accrual profits earned over the life of the capital investment proposal.
(d) Rankings of capital investment proposals are necessary
(e) None of the above

Question 4	**(25 marks: 30 minutes)**
Source : ITA 2002 January Q4 Adapted	**Complete solution**

A friend has approached you to help her evaluate an investment decision she needs to make. She runs a carpet cleaning business and has a number of contracts with various companies in Cape Town. Her business is expanding and she needs to purchase a new machine to enable her to meet the demand in the medium term. She has made enquiries from a number of suppliers of suitable machines and has short-listed the machines of two of them. Both of the machines would meet the requirements of the job. However, they have some differences, not least of all which is cost *(not that this is a limiting factor, as she has the necessary funds).*

She hears you have recently learnt about capital investment appraisal and has asked for your help with her decision and has given you the following information with respect to the two machines:

	The Supersud	**The Ecomax**
Purchase price	R20 000	R10 000
Expected useful lie	4 years	4 years
Resale value at end of life *(Residual value)*	R 3 000	nil
Expected NET operating cash flows* – year 1	*R4 000*	*R3 500*
– year 2	*R6 000*	*R4 000*
– year 3	*R8 000*	*R4 500*
– year 4	*R10 000*	*R5 000*
Total of year 1 to 4 net cash flows before resale value	R28 000	R17 000

Net operating cash flows = Annual cash inflows less Annual cash outflows

Your friend advises that if she does not purchase a new machine she would keep the money in the bank on a long-term deposit earning 15% per annum. This rate may be used as her cost of capital.

The present and future value of R1 at 15% pa is as follows:

Year	**0**	**1**	**2**	**3**	**4**
Present value	1	0.869	0.756	0.658	0.572
Future value	1	1.150	1.323	1.521	1.749

Taxation may be ignored.

YOU ARE REQUIRED TO:

Your friend tells you she thinks the Supersud is the best option as it results in an overall net gain of R11 000, compared with the R7 000 for the Ecomax.

1. Calculate the Payback Period for both machines *(in years, months and days)*.
2. Calculate the Accounting Rate of Return *(ARR).*
3. Calculate the Net Present Value of each alternative and advise her which option you recommend;
4. Calculate the Internal rate of return *(IRR)* for Machine Supersud
5. Which of the Net Present Value or the Payback Period methods do you think is superior? *Justify your answer.*

Question 4	**(25 marks: 30 minutes)**
Suggested solution	

1. Payback period *(uses undiscounted net cash inflows)*

Definition: Evaluates the period which the annual net cash flows (before discounting) of the project pays back the initial investment.

	Supersud		**Ecomax**
Initial investment	-R20 000		-R10 000
Year 1 – Net Cash Inflow	4 000		3 500
	-16 000		-6 500
Year 2 – Net Cash Inflow	6 000		4 000
	-10 000		-2 500
Year 3 – Net Cash Inflow	8 000		4 500
	-2 000		
Year 4 – Net Cash Inflow	10 000		

Payback period is

		W1		**W2**
Supersud	3 years	1 month		17 days
Ecomax	2 years	6 months		21 days

	Supersud		**Ecomax**
W1. Calculating the number of months			
Amount to be paid back in final year x 12	R2 000 x 12		R2 500 x 12
Cash flow in final year in which project is paid back in full	13 000		4 500
	= 1.54 months		= 6.67 months
W2. Calculating the days	~~1~~.54 x 31		~~6~~.67 x 31
	=17 days		= 21 days

2. Accounting rate of return *(uses annual accrual profits)*

Definition:

		Supersud		Ecomax
Average annual profits x 100	**W1**	R2 750 X 100		R1 750 X 100
Average investment	**W2**	8 500		5 000
		=32. 35 %		= 35 %

W1. Converting cash flows to Accrual profits: Supersud

	Annual operating cash flows	***Less** annual depreciation expense **(W3)***	*Net accrual profits*
	R	R	R
Year 1	4 000	4 250	-250
Year 2	6 000	4 250	1 750
Year 3	8 000	4 250	3 750
Year 4	10 000	4 250	5 750
			11 000
Average annual profits	**R11 000 / 4**	**=**	**R2 750**

Converting cash flows to Accrual profits: Ecomax

	Annual operating cash flows	***Less** annual depreciation expense **(W3)***	*Net accrual profits*
	R	R	R
Year 1	3 500	2 500	1 000
Year 2	4 000	2 500	1 500
Year 3	4 500	2 500	2 000
Year 4	5 000	2 500	2 500
			7 000
Average annual profits	**R7 000 / 4**	**=**	**R1 750**

W2. Average investment

	Supersud		Ecomax
(Cost - residual value)	R20 000 – 3 000		R10 000
2	2		2
	= R8 500		=R5 000

3. Annual depreciation expense

	Supersud		Ecomax
Cost – residual value	R20 000 – 3 000		R10 000
Estimated useful life	4		4
	= R4 250 per annum		=R2 500 per annum

3. Net present value (NPV)

Definition:

Year	**0**	**1**	**2**	**3**	**4**
Supersud	**R**	**R**	**R**	**R**	**R**
Purchase price	-20 000				
Residual value					3 000
Operating cash flows		4 000	6 000	8 000	10 000
Total cash flows	-20 000	4 000	6 000	8 000	13 000
Present value factor at 15%	x1	x0.870	x0.756	x0.658	x0.572
Present value	-20 000	3 478	4 537	5 260	7 433
Net present value *(PV)*	R708				

Year	**0**	**1**	**2**	**3**	**4**
Ecomax	**R**	**R**	**R**	**R**	**R**
Purchase price	-10 000				
Residual value					0
Operating cash flows		3 500	4 000	4 500	5 000
Total cash flows	-10 000	3 500	4 000	4 500	5 000
Present value factor at 15%	1	x0.870	x0.756	x0.658	x0.572
Present value	-10 000	3 045	3 024	2 961	2 860
Net present value *(PV)*	R1 886				
The Ecomax should be purchased					

4. Internal Rate of Return (IRR)

(Trial and error method)

Definition: where the discounted NPV (net cash inflows = initial investment) is equal to zero

Supersud

15%	**0**	**1**	**2**	**3**	**4**
Total cash flows	-20 000	4 000	6 000	8 000	13 000
Present value factor at 15%	x1	x0.870	x0.756	x0.658	x0.572
Present value	-20 000	3 478	4 537	5 260	7 433
Present value of future cash flows	**20 708**				
Net present value *(PV)*	**R708**				

16%	**0**	**1**	**2**	**3**	**4**
Total cash flows	-20 000	4 000	6 000	8 000	13 000
Present value factor at 16%	x1	x0.8621	x0.7432	x0.6407	x0.5523
Present value	-20 000	3 448.40	4 459.20	5 125.60	7 179.90
Present value of future cash flows	20 213.10				
Net present value *(PV)*	**R213.1**				

17%	**0**	**1**	**2**	**3**	**4**
Total cash flows	-20 000	4 000	6 000	8 000	13 000
Present value factor at 17%	x1	x0.8547	x0.7305	x0.6244	x0.5337
Present value	-20 000	3 418.80	4 383.00	4 995.20	6 938.10
Present value of future cash flows	19 735.10				
Net present value *(PV)*	**-R264.90**				

Therefore the Internal Rate of Return (IRR) lies between 16% and 17%

16%	+	213.1
		213.10 + 264.90
16%	+	213.1
		478
16%	+	0.44
	=	16.44 %

Ecomax

Year	**0**	**1**	**2**	**3**	**4**
Total cash flows	-10 000	3 500	4 000	4 500	5 000
Present value factor at **15%**	1	x0.870	x0.756	x0.658	x0.572
Present value	-10 000	3 045	3 024	2 961	2 860
Present value of future cash flows	11 886				
Net present value *(PV)*	**R1 886**				

16%	0	1	2	3	4
Total cash flows	-10 000	3 500	4 000	4 500	5 000
Present value factor at 16%	x1	x0.8621	x0.7432	x0.6407	x0.5523
Present value	-10 000	3 017.35	2 972.80	2 883.15	2 761.50
Present value of future cash flows	11 634.80				
Net present value *(PV)*	**R1 634.80**				

17%	0	1	2	3	4
Total cash flows	-10 000	3 500	4 000	4 500	5 000
Present value factor at 17%	x1	x0.8547	x0.7305	x0.6244	x0.5337
Present value	-10 000	2 991.45	2 922.00	2 809.80	2 668.50
Present value of future cash flows	11 391.75				
Net present value *(PV)*	**R1 391.75**				

18%	0	1	2	3	4
Total cash flows	-10 000	3 500	4 000	4 500	5 000
Present value factor at 18%	x1	x0.8475	x0.7182	x0.6086	x0.5158
Present value	-10 000	2 966.25	2 872.80	2 738.70	2 579.00
Present value of future cash flows	11 156.75				
Net present value *(PV)*	**R1 156.75**				

19%	0	1	2	3	4
Total cash flows	-10 000	3 500	4 000	4 500	5 000
Present value factor at 19%	x1	x0.8403	x0.7062	x0.5934	x0.4987
Present value	-10 000	2 941.05	2 824.80	2 670.30	2 493.50
Present value of future cash flows	10 929.65				
Net present value *(PV)*	**R929.65**				

21%	0	1	2	3	4
Total cash flows	-10 000	3 500	4 000	4 500	5 000
Present value factor at 21%	x1	x0.8264	x0.6830	x0.5645	x0.4665
Present value	-10 000	2 892.40	2 732.00	2 540.25	2 332.50
Present value of future cash flows	10 497.15				
Net present value *(PV)*	**R497.15**				

23%	0	1	2	3	4
Total cash flows	-10 000	3 500	4 000	4 500	5 000
Present value factor at 23%	x1	x0.8130	x0.6610	x0.5374	x0.4369
Present value	-10 000	2 845.50	2 644.00	2 418.30	2 184.50
Present value of future cash flows	10 092.30				
Net present value *(PV)*	**R92.30**				

24%	**0**	**1**	**2**	**3**	**4**
Total cash flows	-10 000	3 500	4 000	4 500	5 000
Present value factor at 24%	x1	x0.8065	x0.6504	x0.5245	x0.4230
Present value	-10 000	2 822.75	2 601.60	2 360.25	2 115.00
Present value of future cash flows	9 899.60				
Net present value *(PV)*	**-100.40**				

Therefore the Internal Rate of Return (IRR) lies between 23% and 24%

23%	+	92.90
		92.90 + 100.40
23%	+	92.90
		193.30
23%	+	0.48
	=	23.48%

Internal Rate of Return *(IRR)*

STEP METHOD

Definition of IRR

- NPV = 0
- Cost of Investment = PV of NET annual cash inflows

Example

Project Information (this normally given in the question)

Cost of project = R400 000

NET Annual cash inflows = R100 000

Life of the project = 5 years

Procedure to find IRR:

1. As the Net Annual Cash inflows are the same every year for 5 years (R100 000) we can use the following:

Payback period with Annuities

$$\frac{\text{Cost of the project}}{\text{NET Annual Cash Inflows}} = \frac{\text{R400 000}}{\text{100 000}} = \mathbf{4}$$

2. We look up a number that is a PVIFA in the tables on either side of 4. WE find those numbers as follows:

8%	We want to find this %. Its between 7% & 8%	7%
3.9927	4	4.1002

3. Finding the NPV at 7% and 8%

Years	Net Annual Cash Inflow	PVIFA at 6%	PV at 6%	PVIFA at 7%	PV at 7%	PVIFA at 8%	PV at 8%
1 – 5	R100 000	4.2124	421 240	4.1002	410 020	3.9927	399 270
	Less: Initial Investment		-400 000		-400 000		-400 000
	Net Present Value *(NPV)*		**R21 240**		**R10 020**	**0**	**R-730**

4. We Interpolate to find the IRR

7 %	+	10 020
		10 020 + 730
7 %	+	10 020
		10 750
7 %	+	10 020
		10 750
7 %	+	0.932093023

So we move from a +10 020 to a – 730

We must pass 0.

Internal Rate of Return	**=**	**7.93% this is the discount rate that will make NPV = 0**

5. Comparison of NPV and Payback methods

- The NPV method is superior as it takes into account the time value of money
- The payback period method ignores the time value of money and also ignores any cash flows occurring after the payback period.
- As such the Payback period method is unfavourable to long term investments, whereas the NPV method is not.

(Note award marks liberally for any reasonable points)

Total 5
Grand total 25

Question 5	**Check answers**
Source: Financial Management: Correia, Flynn, Uliana and Wormald - Question 8.14	

HardSoft Ltd is considering developing new software that will indicate likely scenarios arising from climate change. The software includes an educational game whereby players try to save the world by undertaking actions that reduce emissions. The software also offers scientific explanations and presents scenarios about the impact that global warming will have on different regions of the world. The cost of the software development, which will be incurred immediately, is expected to be R4 million.

Year	**1**	**2**	**3**	**4**
Sales *(no. of units)*	100 000	100 000	80 000	60 000

The company expects to sell each unit for R30 to the stores and the variable cost of production, packaging and distribution is R6 per unit. The incremental fixed costs over the next four years is expected to be R40 000 per year. The cost of software development of R4m is deductible for tax purposes over two years *(that is 50% of the cost in each year)*. The corporate tax rate is 28%. The firm's cost of capital is 14%.

YOU ARE REQUIRED TO:

(a) Calculate the project's Payback period.

(b) Calculate the project's Net Present Value *(NPV)*.

Hint: For the tax calculation use the following table

	0	**1**	**2**	**3**	**4**
Net Cash Flows	4 000 000	2 400 000	2 400 000	1 920 000	1 440 000
Less:					
Software development		-2 000 000	- 2 000 000		
Fixed costs		-40 000	- 40 000	-40 000	- 40 000
Sec 12C - Wear and tear allowance					
Taxable income		360 000	360 000	1 880 000	1 400 000
Tax at 28%		-100 800	-100 800	-526 400	-392 000

Question 5	**Check Answers**
Source: Financial Management: Correia, Flynn, Uliana and Wormald -	

(a) Payback period: 1. 66 years or 1 year 8 months

Net cash flows	-4 000 000
Year 1	2 400 000
Balance	-1 600 000
Year 2	1 600 000

1 600 000 / 2 400 000 x 12 = 8 months

(b) Net Present Value (NPV).

Year	**0**	**1**	**2**	**3**	**4**
Net cash flows	-4 000 000	R2 400 000	R 2 400 000	1 920 000	1 440 000
Fixed costs		-40 000	- 40 000	-40 000	- 40 000
Income tax at 28%		-R100 800	-R100 800	-526 400	-392 000
	-4 000 000	2 259 200	2 259 200	1 353 600	1 008 000
PV factor at 14%	1	0.8772	0.7695	0.6750	0.5921
Present Value	-4 000 000	1 981 754	1 738 381	913 641	596 817

Net Present Value	R1 230 741

For the tax calculation use the following table

	0	**1**	**2**	**3**	**4**
Net Cash Flows	4 000 000	2 400 000	2 400 000	1 920 000	1 440 000
Less:					
Software development		-2 000 000	- 2 000 000		
Fixed costs		-40 000	- 40 000	-40 000	- 40 000
Sec 12C - Wear and tear allowance					
Taxable income		360 000	360 000	1 880 000	1 400 000
Tax at 28%		-100 800	-100 800	-526 400	-392 000

Question 6	
Source: Flynn, D: "Understanding Finance & Accounting"; Revised 3rd edition; LexisNexis; 2009.	

14.1

Source: Flynn, D: "Understanding Finance & Accounting"; Revised 3rd edition; LexisNexis; 2009.

Briefly describe the objective of Capital budgeting and list three techniques that are used in making capital budgeting decisions. (Maximum 120 words)

14.2

Source: Flynn, D: "Understanding Finance & Accounting"; Revised 3rd edition; LexisNexis; 2009.

Explain the difference between Mutually exclusive and Independent projects. (Maximum 100 words)

14.3

Source: Flynn, D: "Understanding Finance & Accounting"; Revised 3rd edition; LexisNexis; 2009.

Provide three examples of type of a project that may be considered to be a "Divisible" project. (Maximum 60 words)

14.4

Source: Flynn, D: "Understanding Finance & Accounting"; Revised 3rd edition; LexisNexis; 2009.

This is a question with a slight twist. Under what conditions will the Payback period and the Discounted payback period be exactly the same time period.

14.5

Source: Flynn, D: "Understanding Finance & Accounting"; Revised 3rd edition; LexisNexis; 2009.

If you are using the Net Present Value criterion, and the discount rate is reduced, state with reasons whether the Net Present Value will be larger or smaller.

14.6

Source: Flynn, D: "Understanding Finance & Accounting"; Revised 3rd edition; LexisNexis; 2009.

Explain why a project, discounted at the Internal Rate of Return (IRR) will have a Net Present Value of zero.

14.7

Source: Flynn, D: "Understanding Finance & Accounting"; Revised 3rd edition; LexisNexis; 2009.

The impact of taxation is a significant issue in capital budgeting decisions. Explain the concept of the tax shield.

14.8

Source: Flynn, D: "Understanding Finance & Accounting"; Revised 3rd edition; LexisNexis; 2009.

Explain what an assessed loss is, and discuss its impact on capital budgeting decision.

14.9

Source: Flynn, D: "Understanding Finance & Accounting"; Revised 3rd edition; LexisNexis; 2009.

Whenever a non-current asset is sold, SARS has an interest. Explain the difference between a Recoupment and a Scrapping allowance.

14.10

Source: Flynn, D: "Understanding Finance & Accounting"; Revised 3rd edition; LexisNexis; 2009.

Depreciation is the policy used by a company for depreciating its long term assets (non-current assets), whereas a Wear and tear allowance is the amount that the SARS permits to be deducted for taxation purposes. Explain the relevance, if any, of each of the two. (Maximum 90 words)

14.11

Source: Flynn, D: "Understanding Finance & Accounting"; Revised 3rd edition; LexisNexis; 2009.

Explain the conditions under which the "profitability index" would be used when considering a capital budgeting investment decisions. (Maximum 80 words)

4.12

Question 7

Source: Flynn, D: "Understanding Finance & Accounting"; Revised 3rd edition; LexisNexis; 2009.

You have been appointed as the project advisor of Forge Ltd and have been requested to evaluate the acquisition of a revolutionary machine. It will require an investment immediately of R12 million, have a fully depreciated salvage value of R3m at the end of the three years. The only other relevant after tax cash flows are those at the end of years 1 to 3, forecast to be R4m each years. The corporate tax rate is 32 %.

YOU ARE REQUIRED TO:

(a) Calculate the Net Present Value *(NPV)* of the project if the required rate of return is 15 %.

(b) Without further calculation, estimate the Internal Rate of Return *(IRR)* of the machine.

Question 8

Source: Flynn, D: "Understanding Finance & Accounting"; Revised 3rd edition; LexisNexis; 2009.
14.14

Assent Ltd is considering it expansion projects. It has calculated its cost of capital and requires a return of 15 % based on the weighted average cost of capital. It has narrowed the field down to two mutually exclusive projects, with projected cash flows indicated in the table below:

Year	Net Annual Cash Flows A	Net Annual Cash Flows B
0	-R175 000	-R20 000
1	R10 000	R10 000
2	R25 000	R5 000
3	R25 000	R3 000
4	R375 000	R1 000

In order to assist in the selection between the two projects, it requires some supporting evidence. You decide that you will prepare a report, using a number of different assessment methods. You prepare calculations that will assist in making the best decision.

YOU ARE REQUIRED TO:

(a) If you apply the Payback rule, state which investment you will choose.

(b) If you apply the Discounted payback rule, state which investment you will choose.

(c) If you apply the Net Present Value *(NPV)* rule, state with reasons which investment you will choose.

Question 9

Source: Flynn, D: "Understanding Finance & Accounting"; Revised 3rd edition; LexisNexis; 2009.

14.15

Serranda Ltd has the opportunity to invest in a project with the following estimated future cash flows:

Year	Cash Flows
1	R1 400 000
2	R2 000 000
3	R2 500 000
4	R1 200 000
5	R1 000 000

The cost of the project is R5 million. Ignore taxation. The company's required rate of return is 15%. The project has a zero residual value.

YOU ARE REQUIRED TO:

(a) Determine the payback period of the project.
(b) Calculate the discounted payback period.
(c) Calculate the Net Present Value *(NPV)* of the project.
(d) Estimate the Internal Rate of Return *(IRR).*

Question 10	(23 MARKS: 25 MINUTES)
Source: Managerial Finance (FTX1005F) June 2012 Q5B	

You work for a manufacturing company, Pegs Galore Ltd, which considers further investment in machinery on a yearly basis. You have been given a budget of R600 000 for machinery investment for the year. The manufacturing process involves two stages of production and one machine is being considered.

The following table summarizes the expected incremental cash flows before tax from investing in the new machine:

		Machine A	Machine B
	Time	**R**	**R**
Initial cash outflow	**0**	-600 000	-600 000
BEFORE tax Net cash inflows	**1**	340 000	320 000
	2	280 000	250 000
	3	260 000	220 000
	4	250 000	200 000

- Machine A will require additional working capital in the form of inventory and accounts receivable of R70 000. Only R60 000 of this amount will be recovered at the end of the useful life of machine A. Assume that annual accounting depreciation is the same as the wear and tear allowance allowed by South African Revenue Services *(SARS)* for tax purposes. Machine A will have an estimated useful life of 4 years and a residual value of R40 000.

- Machine B will have an estimated useful life of 4 years and no residual value and requires no working capital investment at the beginning. Assume that annual accounting depreciation is the same as the wear and tear allowance allowed by South African Revenue Services *(SARS)* for tax purposes.

You may assume that the Weighted Average Cost of Capital *(WACC)* is 20% and that the company pays tax at 28 %.

YOU ARE REQUIRED TO:

1. Define the Payback period and calculate it for Machine A and B.
Your answer must be expressed in years and months.

(4 marks)

2. Name one advantage and disadvantage of the Payback Period.

(2 marks)

3. Calculate the Net Present Value *(NPV)* for Machine A and B. Use the appropriate tables provided in appendix B.

(16 marks)

Please present your answers as follows:

Time	0	1	2	3	4
Cash flows					

4. Based on your calculations above which machine would you be willing to accept and why?

(1 mark)

QUESTION 11	**(21 MARKS: 25 MINUTES)**

Source Managerial Finance (FTX1005F) -June 2013 Final Q5

Cape Jean Ltd is considering the acquisition of a cutting pattern-making machine and asks for your help in evaluating this, as it will only be purchased if it makes financial sense *(should the proposed machine not be acquired, they would continue making the patterns manually)*.

The following information is supplied:

1.	Cost of machine	R50 000
2.	Expected life of machine	4 years
3.	Expected incremental Net annual cash flows resulting from the use of the machine:	
	Year 1: R30 000	
	Year 2: R25 000	
	Year 3: R20 000	
	Year 4: R15 000	

4.	Cape Jean Ltd's Cost of capital for this project is 15% per annum.
5.	The resale value of the machine after 4 years is expected to be R4 000.
6.	The investment in the machine would immediately require an additional initial investment of inventories to the amount of R5 000. This investment in working capital would be fully recovered at the end of the 4 year period.
7.	South African Revenue Services *(SARS)* allows a Section 12C allowance of 20 % per annum.
8.	Taxation should be calculated at 28 %.
9.	Extracts from interest rate tables showing the future value and present value factors using an interest rate of 15% p.a. are as follows:

10.	**Year**	**Future value of R1**	**Present value of R1**
	0	1	1
	1	1,150	0.87
	2	1.323	0.76
	3	1.521	0.66
	4	1.749	0.57

YOU ARE REQUIRED TO:

1. Calculate the Payback Period for the cutting machine.

(3 marks)

2. Identify two disadvantages of the Payback Period method.

(2 marks)

3. Calculate the Net Present Value *(NPV)* of the proposed investment in the pattern-making machine and advise the company whether or not it should make the investment.

(16 marks)

Question 12

Source: Flynn, D: "Understanding Finance & Accounting"; Revised 3rd edition; LexisNexis; 2009.

14.19

Blencathra Ltd is a profitable company wishing to expand its activities. Management believes that there is a market for a new product called *"Glow"*. The market is expected to last 4 years and demand is expected to be 200 000 units in the first year, 250 000 units in the second year and 300 000 units in the third year and only 90 000 in the fourth.

Additional fixed costs, that will be incurred as a result of this project will amount to R140 000 per annum excluding depreciation on the machine to be purchased for R900 000 using the straight-line method over 4 years. *"Glow"* will sell for R17 each. Variable costs per unit comprise direct labour of R6, direct material of R5 and selling and distribution costs of R2. The machine will qualify for a wear and tear allowance of 50 % each for two years, as SARS is encouraging investment in this asset category.

It is anticipated that at the end of the four years the machine can be sold to a scrap dealer for R30 000. Additional working capital in the form of inventory and accounts receivable totalling R80 000 is projected. The company pays tax at a rate of 30% has an estimated cost of capital of 16%.

YOU ARE REQUIRED TO:

(a) Draft the Contribution Income Statement for each of the four years of the life of the project, and calculate the net profit for each year on this project.

Present your answer as follows:

	Data	***Year 1***	***Year 2***	***Year 3***	***Year 4***
Sales (units)		*200 000*	*250 000*	*300 000*	*90 000*
Sales income					
Variable costs					

(b) Add back non cash flow items and included all other cash flows to determine the cash flow each year for this project.

Present your answer as follows:

	0	***Year 1***	***Year 2***	***Year 3***	***Year 4***
*Net profit **before** tax* *(from Income statement)*					
Add back:					

(c) Determine the Payback Period of the project.

(d) Calculate the Net Present Value *(NPV)* of the project.

(e) Estimate the Internal Rate of Return *(IRR)*.