OC: FINANCIAL MARKETS PRACTITIONER (SAQA ID: 117238)

External Integrated Summative Assessment (EISA)

EXEMPLAR PAPER 1

SOLUTIONS

Note: This exam is orientated towards learners operating within the licensed stock exchange and associated fields, and therefore the final exams will have optional alternative questions for learners operating within the portfolio or asset management and pension fund related fields.

DATE OF PAPER	Exemplar Paper
ASSESSOR	Gordon Rennie/ Kashnie Naidoo
MODERATOR	William Bowler/ Erica Bruce
WRITING TIME	3 Hours
READING TIME	15 Minutes
TOTAL EXAM TIME	**3 Hours 15 Minutes**

1. This examination is a closed book examination and is designed to be completed within two (2) hours and 45 minutes, although 3 hours writing time are allowed. In addition, 15 minutes reading time, before the official start of the examination, has been allocated.

2. Please check that **ALL** the required questions have been answered.

3. Please refrain from putting your name and surname anywhere on the written answer books.

4. Questions must be answered in the **Answer Books provided.**

5. Please note that there is no need to elaborate outside of the scope of the question. Lengthy answers are unnecessary. Provide concise and explicit answers.

6. The total marks for Paper 1 are 168. A pass mark for Paper 1 is **50% (i.e. 84/168**).

7. There are three (3) sections to the examination Part A:

SECTIONS	**MARK ALLOCATION**
SECTION A *Answer all questions from this section*	98
SECTION B *Answer all questions from this section*	62
SECTION C *Answer all questions from this section*	8
TOTAL (PAPER 1)	**168**

8. Each question in Sections A and B must be answered on a new page. Questions may be answered in any order and **MUST** be clearly numbered.

9. A non-programmable calculator may be used. No mobile devices or any other form of electronic devices are permitted.

10. All answers must be written in black or blue ink in the required answer book/s. No answers written in pencil will be marked. Answers must be legible.

11. All forms provided are to be completed.

Section A [98 Marks]

Case Study

for questions 1 to 6

You have completed your FMP qualification and have been hired by Investment Ace (Pty) Ltd, a stockbroking firm that also provides asset management services. Investment Ace is an authorised user of the JSE, ZarX and A2X, three licensed exchanges in South Africa. Your supervisor is a Stockbroker and expects you to assist in easing her increasing workload. She has several private and institutional clients, which are divided into three broad classes, these being: Private Clients, Pension Funds and Asset Managers. The private clients consist of both discretionary and non-discretionary clients. The two institutional client classes (Pension Funds and Asset Managers) are all non-discretionary clients.

The firm's standard broking and portfolio fees are:

- Portfolio take-on and structuring fee: A once-off fee of 1,5% on value of funds for structuring provided by client;
- Portfolio management fee: An annual fee of 1% of the assets under management, which is start value of structured portfolio at the beginning of each calendar year;
- Brokerage of 0,4% on private client buy or sell transactions; and
- Brokerage of 0,2% on institutional client buy or sell transactions.
- All fees are exclusive of VAT and STT which are the official rates.

Question 1 **(14 marks)**

Investment Ace (Pty) Ltd uses a mandate for the three classes of client, all of which must follow the format required by the exchanges as their direct regulator and must conform with the relevant legislation, regulations and rules. Each new client take-on requires the asset management and trading team to complete the appropriate mandate with the client and these must be approved by your compliance department.

You have been tasked with highlighting the following in terms of each of the three client categories. Specify unique issues relevant to the client's investment needs and requirements in terms of each class in terms of these specific questions:

1.1 Provide a short explanation of the following three concepts or terms:

1.1.1 Market Liquidity (1,5 marks)

1.1.2 Discretionary Clients (1,5 marks)

1.1.3 Behavioural Economics (2 marks)

1.2 Specify 2 important elements relevant to your Pension Fund clients (2 marks)

1.3 Specify 2 important elements relevant to your Asset Managers (2 marks)

1.4 Draw a Supply and demand curve, labelling the Supply Curve, The Demand Curve, their intersection, the vertical and the horizontal axis (5 marks)

Answers Question 1

1.1 *1 line explanation of the following three concepts or terms:*

1.1.1. **Market Liquidity**

There are sufficient buyers and sellers at the market price for a security to ensure investors can quickly purchase or sell the security without causing a material change in the security's price. **1,5**

1.1.2. **Discretional Clients**

Where the broker / asset manager has the discretion to transact for a client (either buy or sell a security) without referring to the client. Also referred to as a managed client. **1,5**

1.1.3. **Behavioural Economics**

Behavioural economics studies the effects of psychological, cognitive, emotional, cultural and social factors on the decisions of individuals and institutions and how those decisions vary from those implied by classical economic theory. Behavioural economics is primarily concerned with the bounds of rationality of economic agents. **2**

1.2. *Any 2 of below:*

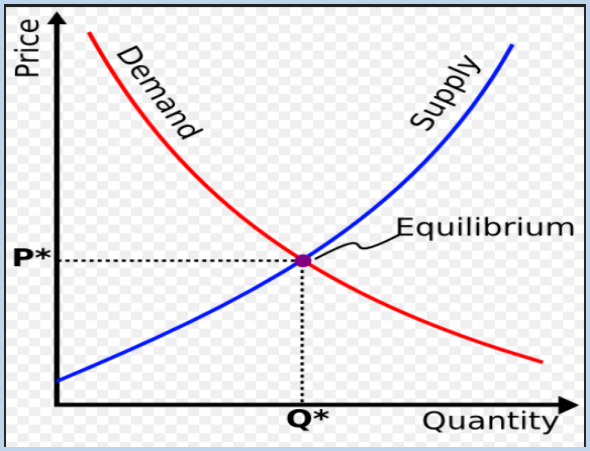
- Always are non-discretional clients
- Mandate must be approved by PF trustees
- Must comply with Reg 28 of PF Act **2**

1.3. *Any 2 of below:*

- Always are non-discretional clients
- Mandate must be approved by the board of directors of the asset manager client
- These clients are acknowledged investment experts **2**

Answers Question 1

1.4.



5

Case Study continued:

In addition to the information above, the following specifically applies to questions 2 to 5.

You have been allocated a new private client, Mr. David Jones, who is a director of a listed company, ABC Ltd. David Jones is currently 54 years old and has two children, John and Paul, with his wife Stella. Stella is also 54 and is a member of parliament for the ANC. John has just finished writing his matric and will be going to Wits while Paul is going into grade 11 at St Johns College. Both David and Stella will retire at the age of 65.

David and Stella have stated that:

i. The monthly draw-downs must be funded by coupon payments from a government bond investment you must make for their portfolio.
ii. They feel that in the wake of Covid, interest rates will be declining over time.
iii. They are concerned about the post Covid future economic outlook and have stated they do not like a cumbersome portfolio. In terms of direct equity investments, they want a relatively concentrated portfolio of only 4 different securities, which must be from the list of qualifying securities provided in the annexures – (Information Sheets attached to the exam paper). They are brokerage averse but instruct you to sell 4000 of their Anglos to allow the purchase of the Govt Bond, another 2 equities as well as STX40 ETF's.
iv. They want all revenues from their cash and share sales to be applied first to the minimum R150 000 safety net, then to the bond purchase and remainder to be allocated roughly 50% to other shares and 50% to JSE Satrix STX40 ETF's.

v. The specific trading costs involved in any securities sales or purchases must come out of that classes allocation and may therefore slightly skew the asset class allocations, which for the purpose of your answer is acceptable.
vi. Since the Covid pandemic they have developed a moral requirement not to hold any invests in either tobacco or alcohol company shares.
vii. They want all annual returns from the portfolio to be invested into the foreign market index ETF (STX500) they currently hold. None of this ETF may be sold.
viii. They hold two foreign bank accounts which must be retained, and their interest capitalized in these foreign accounts. These accounts will form part of the portfolio you must manage and any South African tax payable on interest they earn in these accounts must be deducted from rand earnings in the portfolio.

David and Stella would like you to provide a complete joint investment proposal (i.e. the solution to this question is one portfolio) which must comply with their communicated needs listed above and the KYC below.

Note: Your solution must be structured in terms of the relevant questions, Q2 to Q5.8 below, using the information provided in the case study as well as the authorised securities, taxes and other relevant information provided in the Annexures herein.

You also determine in your KYC/Needs analysis that:

- David currently earns R60 000 pm after tax and deductions.
- Stella earns R50 000 pm after tax and deductions.
- Their accountant and tax advisor has calculated that they require an additional R12 000 per month for this year to fund their living expenses.
- They require a withdrawal or draw-down from the portfolio to cover this shortfall.
- They will fund the monthly shortfall amounts from their credit cards but will require the aggregated monthly shortfall amounts to be refunded from the portfolio from the bond coupons from the government bond investment you have been instructed to make for the portfolio. This monthly shortfall amount must be increased by 7,5% annually for the next four years, after which David can sell his shares in ABC Ltd to fund these. The bonds coupons must be sufficient to cover this amount after 4 years of escalations.
- They would also like an emergency amount of a minimum of R150 000 held in an interest-bearing account.

The portfolio that will be handed to you by the Jones' couple for restructuring consists of the following:

1. Cash in bank (assume amount will be transferred to your firm on start date of the portfolio for asset class allocation or deposit into JSET): R435 000.

2. Shares in current Jones' portfolio which are available for restructuring:

Portfolio of the following JSE listed shares:		
Security Name	**Exchange Code**	**Number of shares**
Anglo American	AGL	8 000
Aspen Pharmacare	APN	4 500
British American Tobacco Plc	BTI	3 000
Distell Group Holdings	DGH	10 000

3. JSE Exchange Traded Fund they hold:

ETF	**Fund Detail**	**No. of units**
STX500	Satrix ETF on S&P 500 (USA Nasdaq)	11 000

4. Foreign bank accounts:

		Balance
4.1.	US Dollar account currently has a balance of:	$17 586
4.2.	UK Pound sterling account currently has a balance of:	£14 965

Question 2 **(12 marks)**

Document the needs analysis for the Jones family.
It is also vital in terms of your mandate that you ensure coverage (i.e. the documenting) of all the client's needs and requirements.

2.1 Show the needs analysis and KYC requirements and findings for the Jones'. (9 marks)

2.2 Provide a table showing the monthly and annual draw down requirements from the portfolio of the Jones' with the relevant escalation for 4 years. (3 marks)

Answer Question 2.1.

Private Clients Needs Analysis for David and Stella Jones …. 9 marks

- FICA
- Age's Both 54
- Is client a PEP (politically exposed person), or work in a position that can affect investments (David director listed company, Stella Jones = MP for ANC = PEP)
- Cash needs (during term of investment management and advice) R12k pm increases annually at 7,5%
- Mr and Mrs Jones are both 54, stated will retire (age 65) in 11 years = capital preservation mainly. Of their two children, one have left school and will be going to university and the other one is starting grade 11 at St Johns college in the New Year.
- The clients risk profile:
  - When would they be retiring, likely financial requirement - Their expectations or desired return (i.e. The clients return profile): Mr and Mrs Jones would like to retire at 65.He would like to preserve capital but beat inflation with their annualized after tax return for the next 11 years. *(is this realistic in light of the client's age?)*
  - Amount to be invested: Their current portfolio is worth over R15 million.
  - Preferences and constraints: They do not like a cumbersome portfolio and would prefer to have a relatively concentrated no of shares, in fact 4. The diversity achieved by Satrix40 ETF which has same value as equity asset class. Bond allocation necessary to guarantee funding of extra living expenses.
  - No tobacco or alcohol company shares. (e.g. religious, ethical, other constraints on where you can invest)
  - Clients market outlook: He believes interest rates will continue to decline and remain low for at least next 5 years – Covid effect on economy in South Africa.
  - Interim requirements for cash: Short term cash liquidity is not a major issue as fund from cc, but require bond coupon to repay cc. Need for 4 years.

Regulatory Requirements (These are generic potential regulatory issues)

- Capabilities in terms of managing assets
  - Licensed to trade in Equities / Bonds and Derivatives
- Fiduciary Duties
  - TCF (i.e. Treat Client Fairly), Chinese Walls and segregation of Duties
- FICA / FAIS
  - Ability to manage assets on behalf of clients and have the clients detail's changed recently, is there a requirement for new proof of residence etc

Answer Question 2.1.

- Disclosures
  - Past returns do not have a bearing on future returns
- Pension Requirements
  - Not necessary in this example but need to know Reg 28 — Pension Funds Act
- Existing Mandate and what it covers…
  - Make decisions on behalf of client. Do not step outside legally binding mandate conditions and client requests
- Juristic Requirements or Regulation
  - Exchange Controls, Tax clearances, Foreign investment allowance, Asset swap if necessary
- Communication
  - How and when will you communicate?
- Duties and responsibilities of all parties
  - What will be your function (manage assets, inform client of any circumstances that have changed and meet with the client for a minimum of one annual review)
  - Client is required to notify of any changes to his / her situation
- Operational Process

o Flow of funds, tax reporting and risks

- Custody of Assets
  - Assets held in nominee
  - Cash held in JSET
- Natural person or juristic – i.e. authority of client or their rep

Answer to Question 2.2. …. 3 marks

Table: Draw down requirements of the Jones' (7,5% pa escalation for 4 years)		
Year	**Monthly drawdown**	**Annual drawdown**
1	R12 000,00	**R144 000,00**
2	R12 900,00	**R154 800,00**
3	R13 867,50	**R166 410,00**
4	R14 907,56	**R178 890,75**

Question 3 **(5 marks)**

Provide two investment strategies your firm may employ with a short explanation of what each of these strategies involves in terms of the Jones'?

Answer to Question 3

Investment strategy — *(Talk about aspects of your notes for chosen strategies)*

2 x 2.5 marks = 5 marks

- Top Down / Bottom Up
- Active / Passive
- Absolute Return Objective
- Risk / Return
- Capital / Income
- Dividend / Corporate action Strategy
- Time horizons
- Goals
- Performance Measures
- Any specific considerations / constraints views
- Previous track record

Question 4 **(6 marks)**

Explain your investment process in terms of the Jones'?

Answer to Question 4 examples:

Your investment process

- Fundamental Analysis
  - Ratios / DDM / Technical analysis etc
  - Timing of execution
  - Asset Allocation
- Strategic Asset Allocation and assumptions on the performance of the sectors.
  - Market will do x
  - Property will do y
  - Offshore will do z
  - ZAR?

- Developed vs Emerging Markets – conservative but in a developing market
- Rebalancing Policy – stay on course - but client wants foreign market ETF and accounts retained
- Actual Asset Allocation – per client requirements
    - The candidate needs to show that the asset allocation fits within the clients risk and needs. Depending on the clients life cycle the candidate needs to highlight why the asset allocation has been proposed and the reason the asset allocation meets criteria. With specific reference to income or growth.
    - As an example the client mentioned has io years to retirement and is entering the consolidating stage of his life. He should not be taking on aggressive risk and should be entering a larger portion of his investment into a more defensive play. He however is looking for 11% average yield that cannot be currently achieved via a very defensive or a predominantly fixed income portfolio.
    - There is risk offset based on his recent promotion and this needs to be talked about. You need to explain how you propose he takes on more risk to increase his return. You can mention the efficient market hypothesis.
    - You need to talk to your theory i.e. he mentions that he is not all that excited about resources but they have come off considerably. What is your take? Remember it is a proposal! He mentions he believes IT and ecommerce are overvalued. Do you agree or disagree? Do not put him in Naspers on an earnings multiple of 98 and expect him to be happy.
    - Split your asset allocation into any asset class you believe suit the clients criteria as an example it could be split into any of the below :
        - Local Equity
        - Local Property
        - Local Bonds
        - Cash
        - Global Equities / Bonds
        - Commodities
        - Underlying Investments
- Why the choice of the actual constituents of the asset allocation
- Defensive
- Moat Companies
- Specific to needs analysis (Sharia compliant or requested holdings)
- Directorship / conflicts of interest

    i.e. The company currently likes the following
        - Investment Weightings and yields

- Below is an indication of a potential process that you could follow. The shares are randomly inputted and are not referenced to the client's needs. It is important that your answer has thought put into the selection.

This thought process needs to be documented next to a share.
i.e. Standard Bank, recent pull back after the firing of the SA finance minister has given a good buying opportunity. Good consistent dividend. Growth strategy into Africa should produce rewards over the lo years. Has exited the loss making UK business.

***Note**: For purposes of the following questions, use the existing portfolio and cash reserves of the Jones family as provided in the paper*

Question 5 **(61 marks)**

Using the ***Investment Return Spreadsheet*** provided with the exam paper, as well as supporting calculations, complete the quantitative element of the Jones's portfolio proposal in terms of their needs analysis and requirements.

5.1 Calculate the value of the portfolio provided by the Jones' before any actions you propose are taken? (6 marks)

5.2 Provide client with a summary of what you intend doing with the portfolio provided by the Jones' as determined in Q 5.1. above. These proposed actions must be informed by the clients needs analysis and requirements? This is shown as calculations on exam answer sheet and is basis for entries on ***Investment Return Spreadshee***t (6,5 marks)

5.3 Calculate the brokerage cost including taxes on the following for the Jones': (7 marks)
- 5.3.1 Buy transactions. (1,5 marks)
- 5.3.2 Sell transactions. (1,5 marks)
- 5.3.3 What is your net revenue from share sales after brokerage costs (4 marks)

5.4 What amount of money do you have after carrying out the clients instructions to: (5 marks)
- 5.4.1 Invest in Money Market, Bonds, Equities and Satrix STX40 (4 marks)
- 5.4.2 After your JSE MM allocation (1 mark)

5.5 In terms of the clients requirement (8 marks)

5.5.1 Which bond must you buy and why? (2 marks)

5.5.2 How much must be spent on bonds: Cost and Face value? (6 marks)

5.6 Using the clients' instructions and your answer above, provide the following: (12 marks)

5.6.1 How much money is available to buy equities and STX40's ? (3 marks)

5.6.2 What equities will you buy, and what is the respective spend. Show prices including relevant brokerage and taxes (6 marks)

5.6.3 What is the spend on Satrix STX40, show prices including relevant brokerage and taxes (3 marks)

5.7 Using the ***Investment Return Spreadsheet*** provided, populate the document with the proposed portfolio for the Jones' as well as the likely aggregate values per security, trading costs, net of cost values, yields, taxation and after tax returns. (13,5 marks)

5.7.1 Provide asset class allocations and securities in equity asset class allocations (%) and calculate management fee.

Populate Investment Return Spreadsheet with figures and answers.

5.7.2 Populate remainder of Investment Return Spreadsheet with figures and totals so as to calculate:

- The pre tax return (R and %);
- The tax amount (R and %);
- The after tax return of the portfolio (R and %); and
- The New Invested Value of the portfolio at end Year 1.

5.8 What amount of the return will be invested in the portfolio at the start of Year 2, including disbursements of Jones' shortfall. (3 marks)

Answers Question 5

5.1 Calculate the value of the portfolio provided by the Jones' before any actions you propose are taken? ….. 6 marks.

Portfolio and Value provided by Jones'			
Security	No	Unit Price (Rand)	Value
Cash			R435 000,00
Shares			R7 906 495,00
Anglos	8 000	R575,00	R4 600 000,00
Aspen	4 500	R144,57	R650 565,00
BATs	3 000	R572,21	R1 716 630,00
Distell	10 000	R93,93	R939 300,00
ETF's			
STX500	11 000	R58,42	R642 620,00
Foreign bank accounts	**FX amt**	**R rate**	
USD	17 586	R17,50	R307 755,00
BP	14 965	R20,70	R309 775,50
Therefore portfolio provided =			**R9 601 645,50**
Structuring Charge	1%		**-R96 016,46**

Answers Question 5

5.2. ***6,5 marks***

- Place minimum R150 000 in JSET … 0,5 marks
- Sell British American Tobacco … 0,5 marks
- Sell Distill … 0,5 marks
- Calculate Bond required (buy R186, as longer duration and interest rate decline expected) = Based on coupon after tax equalling at least 4 year escalated extra living requirement) … 1 mark
- Keep STX500 … 0,5 marks
- Keep foreign bank accounts … 0,5 marks
- After bond allocation, take extra cash + value of sold equities (taking off brokerage and VAT on shares sold) and add back value of equities you are keeping. This gross amount gets allocated 50% to equities, 50% to STX40 … 3 marks

5.3.

2 x 1,5 = 3 marks

5.3.1. Buy transactions.

Brk	VAT	STT
0,40%	0,06%	0,25%
0,71%		

5.3.2. Sell transactions.

Brk	VAT	STT
0,40%	0,06%	0,00%
0,46%		

Answers Question 5

. 5.3.3 **…. 4 marks**

Sold shares				Brokerage Sell = 0,46%
Anglos	4000	R575,00	R2 300 000	-R10 580
BATs	3 000	R572,21	R1 716 630	-R7 896
Distell	10 000	R93,93	R939 300	-R4 321
			R4 955 930	**-R22 797**
Net Revenue from share sales			**R4 933 133**	

5.4

5.4.1.	Cash provided by client	R435 000,00	
	Net sale of unwanted shares	R4 933 133	
	Funds for restructuring:	**R5 368 132,72**	**4 marks**
	Structuring Fee (1,5%)	**R80 521,99**	**structuring fee**
	Net funds still to invest	**R5 287 610,73**	
5.4.2.	less JSE MM, min R150k so lets put in R250k	-R250 000,00	**to cover management fee**
	Net before Bond purchase:	**R5 037 610,73**	**1 mark**

5.5 5.5.1 The client expects interest rates to decline and wants guaranteed coupon income for 4 years. As per Q2.2. above, minimum coupon in 4 years' time must be after tax on interest = R178 891 per annum.

Bond choice = R186, as it extends beyond 4 years and coupon fixed for period. Therefore can guarantee coupon. **…. 2 marks**

Answers Question 5

5.5.2. Bond purchase

R186

Face	Coupon R186 = 10,5%	Tax on domestic interest (30%)	After tax coupon
R1 000 000,00	R105 000,00	R31 500,00	R73 500,00
Need minimum of after tax coupon income of R178 891			
Therefore R178891 / R73500 = 2,43389 thus round up and buy 2,5 x R1m			
R2 500 000,00	**R262 500,00**	**R78 750,00**	**R183 750,00**

Cost = 108
R2 700 000

Note: Told bond price is All In, includes brokerage and costs.

Spend R2 700 000
Face Value R2 500 000

Therefore buy R2,5m face value of R186, given price 108 means pay R2,7m

Coupon of 10,5% paid on face = R262 500 pa – tax (30%) of R78 750 pa gives an annual net of tax coupon of R183 750 pa. ….. 6 marks

5.6

5.6.1.	Available funds before Bond purchase (Q5.4.2.)	R5 168 132,72
	Bond purchase (Q5.5.2.)	-R2 700 000
	Available funds after bond purchase	**R2 468 132,72**
	50% to equities	R1 234 066,36
	50% to STX 40	R1 234 066,36

…. 3 marks

Answers Question 5

5.6.2. Equity spend

Available for equities		R1 234 066,36		Incl Brk
50% ABSA	=(Equity spend/2)/(R116,51*1,0071)	5258,63	5258 shares	117,34
50% Discovery	=(Equity spend/2)/(R140,53*1,0071)	4359,80	4360 shares	141,53

Buy ABSA	Incl Brk R117,34 x 5258 shares	R616 973,72
Buy Discovery	Incl Brk R141,53 x 4360 shares	R617 070,80
		R1 234 044,52

…. 6 marks

5.6.3. STX40 spend

Available			**R1 234 088,20**
STX40 spend	= R1 234 088,20 / (R58,77 x 1,0071)	20851	
	Cost per unit		59,187267
	No units		20851

…. 3 marks

Answers Question 5

5.7

13,5 marks

5.7. Restructured Portfolio Year 1

5.7.1.

Asset Class	EquitySecurity	Amount	After Mgt Fee	Class %	Sec % of Class
Cash	JSE MM See 5.4.2.	**R250 000,00**	**R155 017,72**	2%	
Equity		**R4 119 272,49**	**R4 119 272,49**	44%	
	4 000 Anglos	R2 300 000,00			55,84%
	4500 Aspen	R650 565,00			15,79%
	4980 ABSA	R584 339,36			14,19%
	4129 Discovery	R584 368,13			14,19%
Bonds		R2 700 000,00	R2 700 000,00	29%	100,00%
STX40		R1 168 805,37	R1 168 805,37	12%	
STX500		R642 620,00	R642 620,00	7%	
USD		R307 755,00	R307 755,00	3%	
UK Pound		R309 775,50	R309 775,50	3%	
		R9 498 228,36	**R9 403 246,08**	100%	
Portfolio Mgt Fee (AUM)		R94 982,28			
Net opening portfolio		**R9 403 246,08**	R0,00		

Answers Question 5

5.7.2

Investment Return Spreadsheet for **Porttfolio handed to you by the Jones'couple for restructuring**

Total Invested Amount at start of period after structure **9 403 246,08**

Asset Class	Security Identity	Allocation	Value incl broke	Return / Yield	Return Value	Tax Rate pa	Tax amount	After Tax Return	New Invested Value
Cash JSE Trustees		1,65%	155 017,72	5,50%	8 525,97	30,00%	2 557,79	5 968,18	155 017,72
Bonds	R186	28,71%	2 700 000,00	10,50%	262 500,00	30,00%	78 750,00	183 750,00	2 700 000,00
Equities	ABSA	43,81%	584 339,36	4,26%	24 892,86	20,00%	4 978,57	19 914,29	584 339,36
	Anglos		2 300 000,00	1,62%	37 260,00	20,00%	7 452,00	29 808,00	2 300 000,00
	Discovery		584 368,13	0,57%	3 330,90	20,00%	666,18	2 664,72	584 368,13
	Aspen		650 565,00	0,00%	0,00	20,00%	0,00	0,00	650 565,00
FX Accounts	USD = $	7%	307 755,00	1,50%	4 616,33	10,00%	461,63	4 154,69	307 755,00
	UK = £		309 775,50	1,25%	3 872,19	10,00%	387,22	3 484,97	309 775,50
Satrix ETF 1	STX40	19,26%	1 168 805,37	0,06%	701,28	30,00%	210,38	490,90	1 168 805,37
	STX500		642 620,00	0,00%	0,00	30,00%	0,00	0,00	740 367,23
Total		**100,00%**	**R9 403 246,08**		**345 699,53**		**95 463,78**	**250 235,75**	9 500 993,31
					3,68%		1,02%	2,66%	

5.8

Calculation of STX500 new invested value:	
After tax returns	250 235,75
less capitalised Int on FX Accs	-8 488,52
less Payout of shortfall (See 2.2.)	-144000
	97 747,23

…. 3 marks

Section B [62 Marks]

Question 6 **(5 marks)**

Your client is considering purchasing Eco Ltd shares which are very sensitive to the business cycle phases. The client wants your advice in terms of what the business cycle is likely to do within 3 months. You agree to consult the firms economist in terms of the business cycle outlook and the sector analyst in terms of the likely share price move given the economists projections.

The economist provides 4 scenarios with the respective probability of each occurring. The analyst provides the likely share price move given each of these 4 scenarios. The information is summarised in the table below:

Business cycle in the next 3 months	Probability	Eco Ltd likely share price move
Contraction Phase continuing but not becoming a recession	.18	Increase by 0,5%
Contraction Phase becoming a full-blown recession	.22	Fall by 14%
Business cycle entering a recovery phase	.45	Increase by 10%
Business cycle entering a prosperity phase	?	Increase by 19%

6.1 What is the probability of the business cycle entering a prosperity phase? (1 mark)

6.2 What is the expected price move of Eco Ltd given the information above? (2 marks)

6.3 Explain what you would advise this client to do in terms of Eco Ltd? (2 marks)

Answers to Question 6

6.1. = 0.15
= 15% **…. 1 mark**

6.2. = 0,0436
= 4,36% **…. 2 marks**

6.3. Take view on business cycle = 60% positive
Expected price move is 4,36%
However 60% chance of increase of at least 10% (45% CHANCE OF 10%) and 15% chance of 19% increase **…. 2 marks**

Question 7 **(5 marks)**

You are provided with the following information.

Share	Code	Share Price (Cents)	No Shares (a)	PE	DY
ABSA Group Ltd	ABG	11970	847 750 679	13.59	4.07
Nedcor Group Ltd	NED	12713	502 054 496	8.09	4.28
Standard Bank Group Ltd	SBK	12952	1 619 941 184	9.35	3.29

Using this information, answer the following questions:

7.1 Calculate the market capitalisation of each of the three shares? (1,5 marks)

7.2 Rank the three banking companies based on their value from biggest to smallest? (1 mark)

7.3 Calculate the relevant group earnings of the share with the highest price earnings ratio? (2,5 marks)

Answers to Question 7

7.1.

Market Capitalisation calculation				
Share	**Code**	**Share Price (Rand)**	**No Shares (a)**	**Market Cap (Rands)**
ABSA	ABG	R119,70	847 750 679	**R101 475 756 276**
Nedbank	NED	R127,13	502 054 496	**R63 826 188 076**
Standard Bank	SBK	R129,52	1 619 941 184	**R209 814 782 152**

Market Capitalisation = Share price × No. of shares …. 1,5 marks

7.2. 1. Standard Bank
2. ABSA
3. Nedbank **…. 1 mark**

7.3. Highest price earnings ratio is ABSA with 13,59. **…. 0,5 marks**

Earnings of ABSA

PE ratio = 13,59

Therefore: $\text{earnings per share} = \frac{share\ price}{13{,}59}$

$$\text{EPS} = \frac{119{,}70}{13{,}59}$$

$$\mathbf{EPS = 8{,}807947}$$

Total earnings = EPS × No of shares

Total earnings = 8,807947 × 847 750 679

Total earnings = R7 466 943 067 **…. 2 marks**

Question 8 **(30 marks)**

Adam Levine is a newly appointed portfolio manager at Able Securities (Pty Ltd). He is very keen to get new clients signed up to make a good impression on the management.

He meets with Mr. Chung-Ho Kim, a potential new client. He is a resident of Democratic People's Republic of Korea (DPRK) (FATF high risk jurisdiction) who has recently moved to South Africa.

They meet at Able Securities on Monday 01 February 2020 at 10am. My Kim informs Adam that has R6 000 000 to invest, he further advised that he the funds are his life savings, and he has no real experience in investing in stock markets and is quite scared of risk.

Adam provides Mr. Kim with his own background in investment management as well as Able Securities and how they have been in business for more than 20 years. He continues to provide Mr. Kim with information about his past clients and the returns he has managed to secure for him using derivatives in their portfolios.

Prior to ending the meeting, Adam advises Mr. Kim that he will accepting him as a discretionary client and will be managing his funds accordingly. He then provides Mr. Kim with the firms trust account bank details and requests that the Mr. Kim deposit the funds immediately. Once received he will start managing her funds in the same way he has for his previous clients.

8.1 Discuss in DETAIL why Adam Levine is in breach of his obligations to the client, taking into account his mandate, FICA, POPI and Investment requirements. (20 marks)

8.2 As per the Exchange Rules, an authorised user that manages investments in derivatives instruments must meet certain requirements.
Discuss in DETAIL what these requirements are. (10 marks)

Answer to Q 8

8.1 Adam Levine has not:

- Entered into a mandate with the client that contains the arrangements of their relationship and investment and trading obligations. **2**

AML/FICA 2

- He has not performed FICA as required by the FIC act and the companies RMCP prior opening the account and the cash being deposited into the firm's account: 1
- Received the required identification information from the client. 1
- Verified the information received from the client. 1
- Conducted Customer Due Diligence
- Conducted Screening – UN and Sanctions Lists, Negative News, DPIP's/DPIP's (explain) 2
- Risk Assessment and Risk Rating based on due diligence. 1
- conducted on the client (explain)
- DRPK high risk jurisdiction – enhanced due diligence to be conducted (detail what these are) 1
- Ongoing due diligence based on "high"" risk rating. 1
- Source of Income/Source of Funds 1

POPI

- No POPI disclaimers have been signed by the client in relation to the use and retention of their personal information. 2

Investment Requirements

- Obtained information regarding the client's financial situation, investment experience, particular needs and objectives in connection with the services required, to enable him to make an appropriate investment decision. 2
- He has not conducted a needs analysis, based on the information obtained, for the purpose of making an investment decision. 1
- He has not conducted a risk assessment based on the information obtained, for the purpose of making an investment decision. 1
- He has not informed with client of the risks associated with investing in the market. 1

8.2

- Despite the fact that a client may have given his general consent to an ISP in an investment mandate to effect transactions in JSE authorised investments on behalf of the client and may have given discretion to the ISP to conduct such transactions, an ISP may not conduct transactions in derivative instruments, whether such investments are equity securities or other JSE authorised investments, without the specific prior consent of the client. 2
- Such consent must be obtained from the client in writing and must specifically state that the ISP is authorised to invest in derivative instruments on behalf of the client, as well as indicating whether there are any specific conditions or restrictions applicable to such investments which are not otherwise contained in the mandate. 3
- The specific consent to be obtained from the client in respect of transactions in derivative instruments, as referred to in rule 8.120.5, may only be elicited once the ISP has - 4
  - considered whether such investments are appropriate for the client in relation to the client's financial situation, investment experience and investment objectives; and
  - advised the client, in writing, of the risks associated with trading in derivative instruments.

Ensure that the client is aware that there is a risk of losing more that the initial amount invested but to the nature of the derivatives product. 1

Question 9 **(8 marks)**

Using the figures for ABG, NED and SBK above in Question 8, calculate:

9.1 The price weighted index for these three shares calculated and explained? (3,5 marks)

9.2 The Value weighted index and the weighting of each of these shares calculated and explained? (4,5 marks)

Answers to Question 9

9.1. A price-weighted index is a stock market Index in which company's shares are weighted according to their share price. **A price-weighted index is mostly influenced by shares which have the higher price, and they accordingly have the higher** **1,5**

weighting in this index, irrespective of the number of shares they have in issue or outstanding.

Mathematically, the Price Index formula is:

$$\text{Price Index} = \frac{\text{Sum of all the prices of Shares which are part of Index}}{\text{Number of Shares in the Index}}$$

That means the price-weighted index is the arithmetic average of the share prices of all the shares in that index.

$$\text{Price Index} = \frac{\text{R}119{,}70 + \text{R}127{,}13 + \text{R}129{,}52}{3} \quad \textbf{2}$$

$$\text{Price Index} = 125{,}45$$

9.2 Start by adding up all the market caps of the company's in this index. We use market cap, as a company's value is based on its market capitalization. Market Cap = the company's share price × the number of shares in issue (i.e. outstanding).

Then work out the respective weight for the company's in this index's:

Dividing their own market cap into the sum of the market caps of all the shares in the index. **2**

In this example: Divide each of the three shares own market cap by the sum of the three market caps.

This weighting:

- **Is therefore a function of their respective values; and**
- **Will accordingly prescribe how much influence each of these company's will have on the index.**

Value weighted index (or value index) Capitalisation calculation				
Share	**Code**	**Market Cap (Rands)**	**Sum of Market Caps**	**Weighting ([a])**
ABSA Group Ltd	ABG	R101 475 756 276	R375 116 726 504	27%
Nedcor Group Ltd	NED	R63 826 188 076	R375 116 726 504	17%
Standard Bank Grp Ltd	SBK	R209 814 782 152	R375 116 726 504	56%
Sum of weightings				100%
([a]) Weighting is the respective shares market cap divided by sum of all index shares' market caps.				

2,5

Question 10 **(4,5 marks)**

Name and explain in brief, three benefits for investing in listed as opposed to unlisted company's?

Answer to Question 10

Any 3 of the following will suffice…. Maximum 4,5 marks

- **Liquidity** **0,5 1**
  (shares trade on an exchange = price discovery = one place where buyers and sellers meet)

- **Regulatory and Surveillance oversight** **0,5 1**
  (by the exchange as a SRO, giving integrity to market)

- **Audit controls**
  There are Prescribed audit requirements and approved auditors for listed companies, limiting the chance of false financial information. **0,5 1**

- **Transparency**
  Easily obtainable information for valuation and analysis (i.e. transparency and disclosure requirements make relevant information accessible) **0,5 1**

- **Guaranteed settlement**
  No counterparty risk, as exchange ensures all parties meet settlement obligations and has guarantee fund for defaults **0,5 1**

Question 11 **(9,5 marks)**

You are approached by Mr. Doubt, a non-discretionary client who would like to hedge his existing portfolio, currently value of R12 million and consists of 10 different equity securities. The respective value weightings of these equities in this portfolio range from 3% to 17%. He has been approached by a friend to consider the following alternatives, but would like your opinion on the suitability or not of each of these hedging alternatives. You must advise whether any of these alternatives are feasible or not for the client, explaining in each case the risks inherent in each alternative:

11.1 A fellow wealthy investor from his golf club has offered to buy an american call option from your client that will cover the entire portfolio and will have a term of 2 years. He will pay your client a once-off premium of R500 000. (3 marks)

11.2 Your client has been offered a double in bespoke cash settled forward agreements by an investment bank. Each forward contract will be structured to match 10% of the clients portfolio. The forwards will expire in exactly 700 days from trade date and their respective strike prices are:

- The banks offer on the forwards is at 110% of the portfolio value at time of the forward contracts trade; and
- The banks bid on the forwards is at 90% of the portfolio value at time of the forward contracts trade.

The bank will also sell options on these forward contracts, Puts at R50 000 per forward contract and Calls at R75 000 per forward contract. (6,5 marks)

Answers to Question 11

11.1 **Not advisable**

Client will be option writer, so only has obligations. The buyer of the American call can exercise at any time up until expiry. All you client gets is the R500 000, which is 5% value on portfolio. For this he may be exercised and forced to sell his entire portfolio **3**

11.2. **The forwards are unlisted futures contracts**, and .

Buying forwards means the client is synthetically long = buys the right and obligation = right to partake in upward value movement on 10% of the value of his portfolio per forward contract bought and obligation to pay-in downward value movement of 10% of the value on his portfolio per forward contract sold, either movement measured from the value when the forward was dealt. Client would still own shares, but is not hedged but rather geared up. If overall portfolios value falls, the client loses 10% x portfolio value loss for each forward

bought. No option, but obligation to pay in if portfolio value declines.

Selling forwards means the client is synthetically short = acquiress the right and obligation = right to partake in downward value movement of 10% of the value of his portfolio per forward contract sold and obligation to pay-in upward value movement of 10% of the value of his portfolio per forward contract sold, either movement measured from the value when the forward was dealt. Client would still own shares, but is effectively hedged for fall in portfolio value but at cost of being penalized for increase in portfolio value. Not a good hedge but rather a lock-in at value when forward traded.

However with options on forwards, where the client only buys the put option, for each option he is hedged against a fall in the portfolios value. This insurance will cost R75 000 for 10% of the portfolio which is R1,2 million worth, meaning it costs 0,0625 or 6,25% to hedge the portfolio at current value. Given the options have a term of 700 days, 30 days short of 2 years, the hedge costs $\frac{6,25\%.}{700} \times 365$ = 3,25% p.a. If the client is prepared to forego 3,25% p.a. for the next 700 days to hedge portfolio, may be feasible option.

6,5

Section C [8 Marks]

Question 12 **(1 mark)**

The share price of a company has no bearing on which of the following?

A. The companies market capitalization;
B. The number of shares the company has in issue;
C. The companies PE ratio;
D. The companies DY; or
E. Its weighting in the value index.

Question 13 **(1 mark)**

In addition to the investment objective that sets limits on risk and return, certain other constraints also affect the investment plan. Which of the following are constraints in the investment process?

i. Liquidity
ii. Market manipulation
iii. Taxation
iv. Legal and regulatory factors

A. i, ii & iv
B. i, iii & iv
C. ii, iii & iv
D. i & iv only
E. All of the above

Question 14 **(1 mark)**

The buyer of an American Put Option _____?

i. receives the premium;
ii. has the right to sell the underlying;
iii. has the right to buy the underlying;
iv. is the option exercise rights holder;
v. is the option exercise obligations holder.

A. i, ii & iv
B. ii & iii
C. ii & iv
D. iii & v
E. iv & v

Question 15 **(1 mark)**

Short sellers of futures on the Alsi40 attempt to _____?

i. Catch the start of a bull market;
ii. Sell high to later buy Low;
iii. Catch the end of a bull market;
iv. Buy Low to later Sell High;
v. Catch the end of a bear market.

A. i, ii & iii
B. i & iv
C. ii & iii
D. ii, iii & iv
E. i, iii & v

Question 16 **(1 mark)**

A buyer of single stock futures attempts to _____?

i. Catch the start of a bull market in the share
ii. Sell high to later buy Low
iii. Catch the end of a bull market in the share
iv. Buy Low to later Sell High
v. Catch the end of a bear market in the share

A. i, ii & iii
B. i & iv
C. ii & iii
D. ii, iii & iv
E. i, iv & v

Question 17 **(1 mark)**

The weighted average cost of capital is the _____?

A. weighted cost of debt less the weighted cost of equity
B. sum of the debt revalued at the highest rate paid
C. weighted rate that a company is expected to pay all its capital suppliers
D. weighted cost of the company's net debt
E. None of the above

Question 18 **(1 mark)**

An under-priced security provides an expected return which is _____ the required return based on the capital asset pricing model (CAPM).

A. Less than
B. Equal to
C. Less than or equal to
D. Greater than
E. Great than or equal to

Question 19 **(1 mark)**

Short sellers of Bonds trading on yield attempt to _____?

A. Sell high to later Buy Low;
B. Sell low to later Buy high;
C. Buy Low to later Sell High; or
D. Buy high to later Sell low.
E. None of the above

Answers to Section C

12. B.
The share price of a company has no bearing on the number of shares the company has in issue.

13 B.
Market manipulation (i.e. No 2) is the only option that is not a constraint in the investment process.

14. C

15. C

16. E

17. C

18. D

19. B

ANNEXURE: Information Sheets

Tax and Exchange Rates	
Dividend withholding tax (DWT)	20%
Securities Transfer Tax (STT)	0.25%
VAT	15%
SARS directive applicable to the Jones' couple:	
Interest earned locally	30%
Interest earned on foreign accounts	10%

Exchange rates (R to Fx)	
To be used for USD ($)	17,50
To be used for UK Pound (£)	20,70
Interest on short term money accounts	
US Dollar account, earns 1,5% pa	
UK Pound sterling account, earns 1,25% pa	

List of Allowed Securities

Money Market (JSE Trustees) current rates	5.5% p.a.

Equity	Code	Price (cents)	# Shares	PE	DY	JSE Sector
Anglo American	AGL	57500	1 363 118 080	21,51	1,62%	Metals & Minerals
Aspen Pharmacare	APN	14457	456 451 541	10,93	0%	Pharmaceuticals
ABSA Group	ABG	11651	840 439 292	12,97	4,26%	Banks
Bidcorp	BID	27006	335 404 212	38,91	0,98%	Food Processors
British Am. Tobacco	BTI	57221	2 457 227 697	9,74	6,11%	Tobacco
Discovery	DSY	14053	658 290 736	312.5	0,57%	Life Assurance
Distell Grp Hldgs	DGH	9393	222 622 356	39,84	1,48%	Beverages - Alcohol
Impala Plats	IMP	21175	770 314 222	10,20	1,98%	Platinum

ETF Fund	Sector	Price (cents)	Div. Yield	Market Cap
STX40	Satrix JSE Allshare top 40	5877	0,06%	R9 467 376 311
STX500	Satrix S&P 500 USA Nasdaq	5842	0%	R1 499 878 059

BONDS: Bond price is All-in, includes brokerage and costs				
RSA Bond Code	**Bond description**	**Maturity**	**Coupon**	**Price**
R182	RSA Government Bond	2021/12/31	12,00%	112
R186	RSA Government Bond	2026/12/31	10,50%	108
Cb25	Corporate Bond	2025/12/31	14,50%	105
Assume no accrued interest, all both pay semi-annual coupons on the 1st June and the 1st December respectively.				

Formula Sheet

$PV = \sum_n \frac{C_n}{(1+r)^n}$	$NPV = \sum_{t=1}^{T} \frac{CF_t}{(1+r)^t}$
IRR: $0 = \sum_{t=1}^{T} \frac{CF_t}{(1+IRR)^t}$	$E[R] = \sum_{i=1}^{N} (P_i \times R_i)$
$P_0 = \sum_{t=1}^{\infty} \frac{D_0 (1+g)^t}{(1+r)^t}$	$PE = \frac{P}{EPS}$
$P_0 = \frac{D_1}{k-g}$ *and* $P_1 = P_0 (1+g)$	
$WC = CA - CL$	$Return\ on\ WC = \frac{Net\ Profit}{WC}$
CAPM ER = $r_f + \beta (r_m - r_f)$ *where risk premium* $= (r_m - r_f)$	
WACC = $\left[\left(\frac{E}{V}\right) \times R_e\right] + \left[\left(\left(\frac{D}{V}\right) \times R_d\right) \times (1-T)\right]$	
$Payback\ period = \left[\begin{matrix}Last\ year\ with \\ a\ negative\ NCF\end{matrix}\right] + \left[\frac{\begin{matrix}Absolute\ value\ of \\ NCF\ in\ last\ year\ with - ve\ NCF\end{matrix}}{\begin{matrix}Total\ Cash\ Flow \\ in\ the\ following\ year\end{matrix}}\right]$	
Redeemable Pref Share: PSR $= \frac{D_1}{(1+r)^1} + \frac{D_2}{(1+r)^2} + \cdots + \frac{D_n + RV}{(1+r)^n}$	
$\sigma = \sqrt{\frac{1}{N}\sum_{i=1}^{N}(x_i - \mu)^2}$	$Bond:\ P = \sum_{t=1}^{T} \frac{C}{(1+y)^t} + \frac{F}{(1+r_n)^n}$

Investment Return Spread Sheet

Question_____ **Student No.** _____

Total Investable Amount for **Year**____ for period _____ to _____ **= R**_____

Funds available after structure: R _____ Distributions: R_____ Port Mng Fees: R_____

Asset Class	**Security Identity**	**Allocation %**	**Value**	**Return Yield %**	**Return Value Rands**	**Tax Rate %**	**Tax R**	**After Tax Return**	**New Invested Value Y/E**
Cash	JSE Trustees								
Bonds									
Equities									
FX Bank Ac									
Fund (ETF)									
Total									
					%		%	%	

Investment Return Spread Sheet (Extra Sheet)

Question_____ **Student No.** _____

Total Investable Amount for **Year**____ for period _____ to _____ **= R**_____

Funds available after structure: R _____ Distributions: R_____ Port Mng Fees: R_____

Asset Class	**Security Identity**	**Allocation %**	**Value**	**Return Yield %**	**Return Value Rands**	**Tax Rate %**	**Tax R**	**After Tax Return**	**New Invested Value Y/E**
Cash	JSE Trustees								
Bonds									
Equities									
FX Bank Ac									
Fund (ETF)									
Total									
					%		%	%	