Tutorial letter 101/3/2013

Investments: An Introduction

INV2601

Semesters 1 & 2

Department of Finance, Risk Management and Banking

IMPORTANT INFORMATION:

Please register as a user of myUnisa as soon as possible. It is free of charge. Visit https://my.unisa.ac.za for details. At myUnisa you will be able to get in touch with fellow students, submit your assignments, update your details, find self assessment questions, as well as participate in discussion forums and blogs.

It is also important that you provide Unisa with your cellular number because important announcements may be sent to you by sms.

Please note that this module carries 12 credits and requires at least 120 hours of study, including the time required to complete the assignments and the examination. Devote at least 120 hours to this module in order to ensure your success.

Take note of Rule 12 contained in the my Registration @ Unisa brochure. You must pass at least 4 modules of 12 credits each or 2 modules of 24 credits each per year. Students who do not comply with this requirement will be excluded from further admission to the university.

BAR CODE

Learn without limits.

UNISA | university of south africa

CONTENTS

Page

1   INTRODUCTION

Dear Student

Welcome to the module, Investments: An Introduction (INV2601).

You have enrolled for an interesting, yet challenging module.

On completion of this module you should be able to demonstrate a sound understanding of the investment background; demonstrate a well-rounded and systematic knowledge base of the analysis of equities and fixed income securities; and understand and demonstrate knowledge of portfolio management and derivative instruments.

1.1   Tutorial matter

Your tutorial matter for Investments: An Introduction (INV2601) consists of the following:

● A study guide for Investments: An Introduction (INV2601).

● You will also receive a tutorial letter shortly after the closing date of the second assignment, which will contain the solutions to the assignment questions of INV2601.

● Additional resources provided at https://my.unisa.ac.za

2   PURPOSE OF AND OUTCOMES FOR THE MODULE

2.1   Purpose

The purpose of this module is to equip students with the necessary knowledge and skills to perform investment analysis and portfolio management.

2.2   Outcomes

On completion of this module, you should:

- have an overall view of the investment setting and the portfolio management process
- understand the organisation and functioning of the securities market in South Africa
- know about the developments in investment theory
- understand the concept and apply the principles of the time value of money
- know the basic security valuation principles and practices
- understand that fundamental analysis is a three-step process consisting of the evaluation of the economy, industry and individual company
- be able to apply basic valuation principles to value a company
- know the basic principles related to technical analysis
- understand the fundamentals of fixed-interest securities
- be able to apply basic valuation principles to value fixed-interest securities
- understand the basics of derivative instruments and their application
- know the important aspects related to the construction and management of a portfolio
- be able to evaluate portfolio management

3   LECTURERS AND CONTACT DETAILS

3.1   Lecturers

Any enquiries of an academic nature concerning this module, such as an enquiry about a specific calculation in the prescribed book, may (during office hours) be directed to:

Miss Josephine Njuguna	email:	njugujm@unisa.ac.za
	Fax:	086 569 8845
	Tel:	012-429 3645
Miss Musi Dowelani	email:	dowelm@unisa.ac.za
	Fax:	086 641 5572
	Tel:	012-429 4592

3.2   Department

This module is offered by academic staff members from the Department of Finance, Risk Management and Banking (DFRB).

<div style="border:1px solid black; padding:10px;">

Please note that you may get in touch with fellow students, download study material, submit assignments, change your address and/or examination venue, view your assignment marks, download previous examination papers, find self-assessment questions and get in touch with your lecturer on the discussion forum at https://my.unisa.ac.za

</div>

Academic enquiries may also be directed to Tel 012 429-3603.

E-mail queries may be sent to finman@unisa.ac.za.

3.3   University

Administrative queries may be directed to the appropriate department as indicated in the *my Registration @ Unisa brochure*. Examples of administrative queries are registration matters, study material matters, account queries and graduation issues. Registration matters must be directed to econ@unisa.ac.za

4   MODULE-RELATED RESOURCES

4.1   Prescribed books

Prescribed book:	*Investment Management*
Edition:	4th edition
Year:	2012
Authors:	Marx, J, Mpofu, RT, De Beer, JS, Mynhardt, RH & Nortje, A
Publisher:	Pretoria: Van Schaik

4.2   Recommended books

None.

4.3   Electronic Reserves (e-Reserves)

None.

5   STUDENT SUPPORT SERVICES FOR THE MODULE

Important information appears in your *my Studies @ Unisa* brochure.

6   MODULE-SPECIFIC STUDY PLAN

Use your *my Studies @ Unisa* brochure for general time management and planning skills.
A study programme for this module is available on myUnisa, you can make changes to the plan to fit your own personal study plan. The study programme indicates the notional hours needed to work through the learning outcomes in the module.

7   MODULE PRACTICAL WORK AND WORK-INTEGRATED LEARNING

None.

8   ASSESSMENT

8.1   Assessment plan

Assignments are seen as part of the learning material for this module. As you do the assignments, study the reading texts, consult other resources, discuss the work with fellow students or tutors or do research, you are actively engaged in learning. Paying attention to the assessment criteria for each assignment will help you to understand what is required of you more clearly.

You may submit written assignments and assignments done on mark-reading sheets either by post or electronically via myUnisa. Assignments may not be submitted by fax or e-mail. For

detailed information and requirements as far as assignments are concerned, see the brochure *my Studies @ Unisa* that you received with your study material.

Compulsory assignment

There are two compulsory assignments for this module in the form of multiple-choice questions. There are non-negotiable submission deadlines for each of the assignments of this module and you must submit these assignments if you wish to gain entry to the examination. The assignments contribute to your year mark.

Year marks

Your year mark, based on the mark obtained for the two compulsory assignments, contributes 10% towards your final mark, while your examination mark contributes 90%.

The combined weighted average of your year mark and examination mark must be 50% or higher for you to pass the module. However, you must obtain a minimum of 40% in the examination, regardless of your year mark. If you obtain less than 40% in the examination your year mark will not be taken into account and you will fail.

For example:
Assignment 01 mark = 50% Assignment 02 mark = 90%. These marks each contribute 50% towards the final 10% year mark.

Assignment no	Mark	Weight	Total
Ass. 01	50%	50%	25
Ass. 02	90%	50%	45
			70 x 10% of final = 7

Assume an examination mark of 50%

90% of the examination mark = 45%

Final mark = (10% assignment mark) + (90% examination mark)

= 7% + 45%

= 52%

You will need a final mark of at least 40% in order to qualify for a supplementary examination.

For general information and requirements as far as assignments are concerned, see the brochure *my Studies @ Unisa,* which you received with your study material.

8.2 General assignment numbers

Assignments are numbered consecutively per module, starting from 01.

8.2.1 Unique assignment numbers

Each assignment has been allocated a unique number in order to identify it in the Unisa assessment plans. Please ensure you always indicate the correct unique number when submitting assignments.

8.2.2 Due dates for assignments

As indicated earlier, you should preferably submit your assignments at https://my.unisa.ac.za prior to the due date of each assignment. Do not wait until the day just prior to the due date. Technical problems with the computer servers of myUnisa may prevent you from submitting your assignment at the last minute.

Please ensure that your assignments reach the Unisa main campus by the due dates should you not be able to submit your assignments at myUnisa and need to mail us your assignments in hard copy format. Requests for extension of due dates for assignments will not be granted. These due dates have been set to allow you sufficient time for the completion of other assignments and your preparation for the examination.

Information about whether Unisa has received your assignment and the mark attained for an assignment can be obtained from https://my.unisa.ac.za.

DUE DATES FOR THE FIRST SEMESTER 2013			
Assignment Number	Unique Number	Closing Date	Content of Assignment
01	301777	12 March	Study units 1 to 10
02	261196	9 April	Study units 11 to 15

DUE DATES FOR THE SECOND SEMESTER 2013			
Assignment Number	Unique Number	Closing Date	Content of Assignment
01	374039	27 August	Study units 1 to 10
02	350319	25 September	Study units 11 to 15

8.3   Submission of assignments

To submit an assignment **via myUnisa:**

- Go to myUnisa at https://my.unisa.ac.za

- Log in with your student number and password.

- Select the module.

- Click on assignments in the left-hand menu.

- Click on the assignment number you want to submit.

- Follow the instructions on the screen.

Only if you do not have access to the Internet should you submit your assignment by means of a mark-reading sheet (for MCQ's) or hard paper copy (for essay type questions) and mail it to Unisa. If you are using a mark-reading sheet, remember to:

1.   Use an HB pencil.

2.   Indicate your student number and the above-mentioned unique number on the mark-reading sheet.

3.   Follow the instructions for completing mark-reading sheets. Incomplete mark-reading sheets will be returned to you unmarked.

4.   Submit the assignment in good time. It must reach the Unisa Main Campus by the indicated in the assignments below. Otherwise it may not be in time to be marked by the Assignment Section.

8.4   Assignments

USE FOUR DECIMAL PLACES IN ALL YOUR CALCULATIONS AND ROUND OFF YOUR FINAL ANSWER TO TWO DECIMAL PLACES WHERE APPLICABLE.

SEMESTER 1

ASSIGNMENT 01   Due date: 12 March 2013

Unique number: 301777

Aim: To evaluate your knowledge of some of the fundamental aspects of the investment background and the analysis of equities. Study units 1 to 10.

Answer the following questions and submit your assignment at https://my.unisa.ac.za.

Use the information below to answer questions 1 and 2.

Share A:

Possible outcomes	Probability (%)	Return (%)
Pessimistic	20	8
Most likely	35	14
Optimistic	45	25

Share B:
The expected return of share B is 15% and its standard deviation is 8%.

1. Calculate the expected return and standard deviation of share A.

	E(r)	σ_A
1.	17.75%	6.90%
2.	17.75%	47.59%
3.	20.25%	6.90%
4.	20.25%	47.59%

2. Assume that you are a highly risk averse investor; determine the share/s that you would prefer to invest in based on the coefficient of variation (CV) of the shares above. **(Use your final answer in question 1 for share A.)**

   1. Share A
   2. Share B
   3. Share A and B, as they have the same CV
   4. None of the above

3. Which of the following are characteristics of well-functioning markets?

   a) Prices take time to adjust to new information.
   b) Transactions can be concluded at low costs.
   c) The assets can be bought and sold slowly at prices that are far from the previous transactions.
   d) Prices change greatly from one transaction to the next unless substantial new information becomes available.
   e) The participants must be able to timeously and accurately determine the volume and prices of past transactions and all current bids and offers.

   1. a and c
   2. b and e
   3. c and d
   4. d and a

4. Which one of the following statements is correct with regards to the implication of the efficient market hypothesis theory (EMH)? The implication of the EMH for …

1. fundamental analysis is that above-average rates of return can only be achieved if one does not have access to reports of superior analysts.
2. portfolio management is that the equity portfolio manager with superior analysis skills, time and ability to do asset allocation, should set up an index fund.
3. technical analysis is that the use of historical trading information only should not enable the investor to generate abnormal returns, especially if risk and transaction costs are taken into consideration.
4. fundamental analysis is that above-average rates of return can only be achieved if one is able to invest after the rest of the market realises there is a discrepancy between market value and intrinsic value.

The following information relates to Deal Corporation. Use it to answer questions 5 and 6.

Return on the market portfolio	8%
Beta	1.2
Risk-free rate of return	5%
Earnings per share	R3.20

No growth in earnings is expected in future for Deal Corporation.

5. Calculate the required rate of return for Deal Corporation based on the capital asset pricing model (CAPM).

1. 3.60%
2. 5.00%
3. 8.00%
4. 8.60%

6. Calculate the value of Deal Corporation based on the No growth model.

    1. R37.21
    2. R40.00
    3. R64.00
    4. R88.89

7. Equator Investment Limited has just paid dividends of R1.50 per share this year. The dividend is expected to grow at 12% in year one and two and at 20% in year three. Thereafter, it is expected to level off to a constant growth of 4% indefinitely. Equator Investment Limited has a required rate of return of 10%. Calculate the intrinsic value of the firm using the three stage dividend discount model.

    1. R21.50
    2. R26.22
    3. R29.40
    4. R34.18

8. Assume the South African economy is experiencing a decline in its economic growth, an increase in inflation and a decrease in consumption. The South African Reserve Bank (SARB) intends to rectify the country's current economic situation. It would implement the monetary policy tools by …

    1. purchasing additional government securities, raising reserve requirements and lowering the repo rate.
    2. selling previously bought government securities, reducing reserve requirements and increasing the repo rate.
    3. purchasing additional government securities, reducing reserve requirements and lowering the repo rate.
    4. selling previously bought government securities, raising reserve requirements, and increasing the repo rate.

9.   … (i) ... shares are high-beta shares whose returns rise and fall sharply in bull and bear markets, while … (ii) ... companies have management capability and the opportunity to undertake investment projects that produces rates of return greater than their weighted average costs of capital.

	(i)	(ii)
1.	Speculative	defensive
2.	Cyclical	growth
3.	Defensive	cyclical
4.	Growth	speculative

Use the following information to answer question 10.

Sigma Limited Income Statement Year ended 31-12-2012	R'000s	Sigma Limited Balance Sheet as at 31-12-2012	R'000s
Sales	55 000	**ASSETS**	
Cost of sales	30 500	Fixed assets	
Operating expenses	<u>18 500</u>	Net fixed assets	120 500
Operating income	6 000	Current assets	
Interest	<u>1 000</u>	Inventories	74 500
Profit before tax	<u>5 000</u>	Other current assets	<u>70 000</u>
Company tax rate	50%	**TOTAL ASSETS**	**265 000**
		EQUITY AND LIABILITIES	
		Owners equity	155 000
		Liabilities	
		Long-term loans	95 500
		Current liabilities	<u>14 500</u>
		TOTAL EQUITY AND	**265 000**
		LIABILITIES	

10. The return on equity exceeds the return on total assets by …

   1. 0.00%
   2. 0.06%
   3. 0.67%
   4. 2.41%

SEMESTER 1

ASSIGNMENT 02   Due date: 9 April 2013

Unique number: 261196

Aim: To evaluate your knowledge of some of the fundamental aspects of fixed income securities, derivative instruments and portfolio management. Study units 11 to 15.

Answer the following questions and submit your assignment at https://my.unisa.ac.za.

1. For a zero coupon bond, the lack of coupon payments before maturity eliminates … risk.

    1. price
    2. credit
    3. yield curve
    4. reinvestment

2. Calculate the yield to call of a 16% semi-annual paying bond with a par value of R1 000. The bond matures in 25 years, has a market price of R1 547.68 and a yield to maturity of 10%. The bond is callable by the issuer in 12 years at a call price of R1 413.96.

    1. 8.62%
    2. 9.14%
    3. 9.95%
    4. 10.00%

3. The current 1 year spot rate is 6.5%, the current 2 year spot rate is 9.4% and the current 3 year spot rate is 12.8%. Calculate the 1 year forward rate two years from now.

    1. 19.92%
    2. 20.56%
    3. 22.20%
    4. 23.61%

4. Which one of the following theories on the term structure and the shape of the yield curve implies that the shape of the yield curve is completely determined by the supply and demand for securities within each maturity segment?

    1. Expectations theory
    2. Convergence theory
    3. Segmented market theory
    4. Liquidity preference theory

    Use the information below to answer questions 5 and 6.

    A 15-year, 8% semi-annual coupon bond (R1 000 par value) is priced at a yield to maturity of 12%. The yield changes by 50 basis points.

5. Calculate the effective duration of the bond.

    1. 7.25
    2. 7.47
    3. 15.15
    4. 28.99

6. Calculate the duration effect of the bond.

    1. -3.74%
    2. -7.47%
    3. 3.74%
    4. 7.47%

7. A putable bond experiences … convexity, which means that at higher yields the price of the putable bond will be … than that of an identical straight bond.

    1. negative   lower
    2. negative   higher
    3. positive   lower
    4. positive   higher

8. Which one of the following is a characteristic of over-the-counter (OTC) contracts?

    1. They are marked-to-market daily.
    2. They are tradable financial instruments.
    3. There is usually some default risk in the contracts.
    4. They are highly liquid due to the standardised nature of all contracts.

9. An increase in *volatility* leads to a … in the value of a **call** option, while an increase in *spot price* leads to a … in the value of a **put** option.

    1. decrease   decrease
    2. decrease   increase
    3. increase   decrease
    4. increase   increase

    Use the information below to answer questions 10 and 11.

    Eva Swanepoel bought shares of H Corporation. It has a market price of R92 and a strike price of R98. She also bought a call for a premium of R3.

10. Calculate the breakeven value and profit for the **call holder**, if the market price increases to R115.

	Breakeven value	Profit
1.	R95	R6
2.	R95	R14
3.	R101	R6
4.	R101	R14

11. Assume that Eva Swanepoel has instead bought a put for a premium of R3. Calculate the breakeven value and the profit for the **put holder**, if the market price decreases to R80.

	Breakeven value	Profit
1.	R95	R15
2.	R95	R18
3.	R101	R15
4.	R101	R18

12. Which one of the following statements is correct about the sets of cash flows that are involved in a currency swap between the two parties?

1.	Initiation of swap – actual exchange of principal (cash) denominated in different currencies During the life of the swap – periodic interest payments that are paid in full without netting Termination of swap – return of the principal
2.	Initiation of swap – actual exchange of principal (cash) denominated in the same currencies During the life of the swap – periodic interest payments that are paid in full without netting Termination of swap – return of the principal
3.	Initiation of swap – actual exchange of principal (cash) denominated in different currencies During the life of the swap – periodic interest payments where the parties pay the net amount Termination of swap – return of the principal
4.	Initiation of swap – actual exchange of principal (cash) denominated in the same currencies During the life of the swap – periodic interest payments where the parties pay the net amount Termination of swap – return of the principal

13. A European call option and put option on the shares of Kalahari Limited both have a strike price of R45 and a time to expiration of 9 months. The call option trades at R2.00 and the put option trades at R1.50. The current risk-free interest rate is 9% per annum. Calculate the value of an equivalent share price of Kalahari Limited using put-call parity.

1. R40.19
2. R42.00
3. R43.26
4. R44.19

14. Shares X, Y and Z each have the same expected return and standard deviation. The following table shows the correlation between the returns on these shares.

Correlation of Share Returns			
	Share X	**Share Y**	**Share Z**
Share X	+1.0		
Share Y	-0.5	+1.0	
Share Z	+0.1	-0.9	+1.0

Given these correlations, the portfolio from these shares having the **lowest risk** is a portfolio …

1. totally invested in share Z.
2. equally invested in shares X and Y.
3. equally invested in shares X and Z.
4. equally invested in shares Y and Z.

Use the information below to answer question 15.

Portfolio	Average return	Variance	Beta
Alpha	8%	25%	0.8
Market index	6%	9%	1.0

Assume a risk-free rate of return of 3%.

15. Calculate the risk-adjusted portfolio performance of the Alpha portfolio using the Sharpe measure and the Jensen measure.

	Sharpe	Jensen
1.	0.20	2.00
2.	0.20	2.60
3.	1.00	2.00
4.	1.00	2.60

SEMESTER 2

ASSIGNMENT 01   Due date: 27 August 2013

Unique number: 374039

Aim: To evaluate your knowledge of some of the fundamental aspects of the investment background and the analysis of equities. Study units 1 to 10.

Answer the following questions and submit your assignment at https://my.unisa.ac.za.

1. At the beginning of the year 2006, you decided to invest R5 000 in an investment that matured at the end of 2011. You received R7 240 at the maturity. Calculate the annual HPY of the investment.

    1. 6.36%
    2. 7.68%
    3. 36.40%
    4. 44.80%

2. Which one of the following are **not** uses of market indices?

    a) To predict current movements.
    b) As benchmarks to evaluate the performance of professional portfolio managers.
    c) As a proxy for the market portfolio of risky assets when calculating the unsystematic risk of an asset.
    d) To track the performance of the specified index over time and to at least achieve similar rates of return.

    1. a and d
    2. a and c
    3. b and c
    4. c and d

3. The semi-strong form of the efficient market hypothesis assumes that security prices fully reflect all …

   1. public information.
   2. private information.
   3. security market information.
   4. information, from both public and private sources.

The following information relates to New Vision Limited; use it to answer questions 4 and 5.

The current dividend (D$_0$)	R1.20
Dividend payout ratio (D/E)	40%
Required rate of return (k)	20%
Net profit margin	18%
Total asset turnover ratio	1.4
Financial leverage ratio	0.75

4. Calculate the growth rate of New Vision Limited.

   1. 11.34%
   2. 13.50%
   3. 18.00%
   4. 18.90%

5. Calculate the value of New Vision Limited using the constant growth model. Assume that the growth rate calculated in **question 4** above is the constant growth rate of New Vision Limited.

   1. R6.68
   2. R11.78
   3. R14.61
   4. R15.43

6. Global Limited has issued 5 million shares, the shares trade at R22 per share on the Johannesburg Securities Exchange (JSE). The firm's assets amount to R95 million and total liabilities to R2.5 million. The firm has a net asset value (NAV) of … and trades at a discount of … against the market price.

	NAV	discount
1.	R18.50	16%
2.	R18.50	19%
3.	R19.00	14%
4.	R19.00	16%

7. Leading economic indicators are those economic series that are likely to rise or fall in advance of the rest of the economy. Which one of the following is classified as a leading indicator?

1. Average prime rate charged by banks
2. Personal income less transfer payments
3. Commercial and industrial loans outstanding
4. New housing units authorised by local building permits

8. In technical analysis, investors usually … when a security's price rises above its moving average.

1. buy
2. sell
3. hold
4. None of the above

Alpha Limited Income Statement Year ended 31-12-2012	R'000s	Alpha Limited Balance Sheet as at 31-12-2012	R'000s
Sales	55 000	**ASSETS**	
Cost of sales	30 500	Fixed assets	
Operating expenses	18 500	Net fixed assets	120 500
Operating income	6 000	Current assets	
Interest	1 000	Inventories	74 500
Profit before tax	5 000	Other current assets	70 000
Company tax rate	50%	**TOTAL ASSETS**	**265 000**
		EQUITY AND LIABILITIES	
		Owners equity	155 000
		Liabilities	
		Long-term loans	95 500
		Current liabilities	14 500
		TOTAL EQUITY AND LIABILITIES	**265 000**

9. The interest coverage ratio is greater than the acid-test ratio by …

1. 2.34
2. 4.83
3. 7.17
4. 12.00

10. Tanzanite Limited currently retains 40% of its earnings which are R5.00 a share this year. It earns a return on equity (ROE) of 18%. Assume a required rate of return of 14%. Determine the price earnings ratio (P_0/E_1) and the price of Tanzanite Limited on the basis of the earnings multiplier model?

P_0/E_1	Price
1. 5.88	R44.12
2. 5.88	R47.29
3. 8.82	R44.12
4. 8.82	R47.29

SEMESTER 2

ASSIGNMENT 02   Due date: 25 September 2013

Unique number: 350319

Aim: To evaluate your knowledge of some of the fundamental aspects of fixed income securities, derivative instruments and portfolio management. Study units 11 to 15.

Answer the following questions and submit your assignment at https://my.unisa.ac.za.

1. Bond rating systems are opinions regarding ... risk and are one of the tools that are used in making decisions on purchasing bonds.

    1. credit
    2. default
    3. downgrade
    4. credit spread

 2. Calculate the yield to put of a 10% semi-annual paying bond with a par value of R1 000. The bond matures in 20 years, has a market price of R849.54 and a yield to maturity of 12%. It is a putable by the bondholder in 8 years at a put price of R898.94

    1. 10.00%
    2. 12.00%
    3. 12.22%
    4. 13.20%

3. Which yield curve is characterised by the yields on the intermediate-term issues being above the yields on short-term issues and the rates on long-term issues declining to levels below those of the short term issues before leveling out?

   1. Flat curve
   2. Humped curve
   3. Normal sloping curve
   4. Inverted sloping curve

   Use the information in the table below to answer question 4.

Bond	Maturity (months)	Annual coupon (%)	Price	Yield to maturity (%)
A	6	5	R100	5
B	12	10	R98.32	8

4. Determine the 12-month spot rate and the 18-month spot rate using the boot strapping method. All bonds have a face value of R100 and semi-annual coupon payments.

   1. 8.00%
   2. 12.00%
   3. 14.00%
   4. 15.00%

5. Duration ignores the curvature of the price-yield relationship; it is a poor approximation of price sensitivity to …

   1. large yield changes.
   2. small yield changes.
   3. no change in the yield.
   4. None of the above

Use the information below to answer questions 6 and 7.

A 30-year, 8% semi-annual coupon bond (R1 000 par value) is priced at a yield to maturity of 10%. The yield changes by 150 basis points.

6. Calculate the convexity of the bond.

    1. 12.70
    2. 84.67
    3. 120.48
    4. 169.33

7. Calculate the convexity effect of the bond.

    1. 0.64%
    2. 0.85%
    3. 1.27%
    4. 1.91%

8. Which one of the following is a feature that is applicable to future contracts?

    1. They are usually not regulated.
    2. Their performance is guaranteed by the exchanges' clearing house.
    3. They are private contracts and do not trade on an organised exchange.
    4. They are unique contracts satisfying the needs of the parties involved.

Use the information below to answer question 9.

Julia Gaborone believes she has identified an arbitrage opportunity for a commodity. She has gathered the following information.

Commodity price and interest rate information:

Spot price for commodity	R100
Futures price for commodity expiring in 6 months	R120
One-year interest rate	15%

9. Calculate the theoretical futures price of the commodity and determine the actions that will realise an arbitrage opportunity.

<u>Theoretical futures price</u>   <u>Actions</u>

1. R107.24   Buy futures, sell spot and invest money.
2. R107.24   Sell futures, buy spot and borrow money.
3. R115.00   Buy futures, sell spot and invest money.
4. R115.00   Sell futures, buy spot and borrow money.

10. A put option on a share is currently selling for R70 and has a strike price of R80. The put premium is valued at R5. The put option is ...

1. in-the-money by R5.
2. out-of-the-money by R5.
3. in-the-money by R10.
4. out-of-the-money by R10.

11. Calculate the upper and lower bounds respectively for a 6 month European call option on a non-dividend paying share when the share price is R78, the strike price is R80 and the risk-free rate of interest is 8% per annum.

    <u>Upper bound</u>   <u>Lower bound</u>

1. R78.00   R1.02

2. R78.00   R2.00

3. R80.00   R1.02

4. R80.00   R2.00

Use the following information to answer questions 12 to 14.

Probability of occurrence	Rate of Return – Security A	Rate of Return – Security B
50%	12%	10%
25%	10%	11%
25%	8%	9%

12. Calculate the standard deviation of securities A and B.

    σ_A σ_B

1. 0.71   0.68

2. 0.97   0.75

3. 1.23   0.86

4. 1.66   1.00

13. Calculate the correlation coefficient between the two assets.

1. 0.12

2. 0.25

3. 0.30

4. 0.42

14. Calculate the portfolio risk if 50% of the portfolio is invested in A and 50% in B.

1. 1.03
2. 1.09
3. 1.34
4. 1.82

Use the information in the table below to answer question 15.

Performance measure	Portfolio P	Portfolio Q	Market index	Best performer
Treynor performance index	2.80	4.03	1.97	Portfolio Q
Sharpe performance index	5.10	3.80	2.00	Portfolio P
Jensen measure	1.65%	2.10%	0.00%	Portfolio Q

15. Based on the information in the table above, which portfolio is better diversified?

1. Portfolio P
2. Portfolio Q
3. Market index
4. None of the above

9   SELF-ASSESSMENT QUESTIONS

1. The annual holding period return of an investment that was held for four years is 5.74%. The ending value of this investment was R1 000. Calculate the beginning value of the investment.

   1. R799.94
   2. R945.72
   3. R1 057.40
   4. R1 250.00

2. Which of the following is **not** a purpose of market indices?

   1. To predict past market movements.
   2. To create and monitor an index fund.
   3. To measure market rates of return in economic studies.
   4. As benchmarks to evaluate the performance of professional portfolio managers.

3. If a risk-free asset has a correlation of zero with all other risky assets the expected return will be ... to/than the actual return.

   1. lower
   2. equal
   3. greater
   4. not related

4. ... (i) ... risk is the only risk that a share contributes to a well diversified portfolio while ... (ii)... risk is diversified away from this portfolio.

	(i)	(ii)
1.	Financial	unsystematic
2.	Systematic	financial
3.	Systematic	unsystematic
4.	Unsystematic	systematic

Use the information in the table below to answer question 5.

	Average rate of return	Standard deviation	Correlation coefficient with market index
Green Limited	26%	14%	0.45
Market Index	10%	6%	

5. Calculate the beta of Green Limited.

    1. 0.01
    2. 0.06
    3. 0.55
    4. 1.06

6. Brainchild Limited has a current dividend of R2.00 per share. It has a beta of 1.1 and a constant growth rate of 5%. The risk-free rate is 8% and the return of the market is 12%. Calculate the intrinsic value of Brainchild Limited using the constant growth model.

    1. R27.03
    2. R28.38
    3. R28.57
    4. R30.00

7. Maroon Limited has just paid dividends of R1.00 per share this year. The dividend is expected to grow at 15% over the next two years and at 8% in year three. There after growth is expected to level off to a constant growth of 4%. Maroon Limited has a required rate of return of 18%. Calculate the intrinsic value of Maroon Limited using the three stage dividend model.

    1. R6.46
    2. R9.28
    3. R9.37
    4. R10.61

Use the information in the table below to answer question 8.

Fashion Corporation	
Dividend payout ratio	30%
Net profit margin	15%
Total asset turnover	2.0
Financial leverage	0.9

8. Calculate the growth rate of Fashion Corporation.

1. 8.10%
2. 15.00%
3. 18.90%
4. 27.00%

9. ... (i) ... shares are shares with low betas, regardless of the nature of the company while ... (ii) ... companies are firms whose business involves great risk.

(i)	(ii)
1. cyclical	defensive
2. cyclical	speculative
3. defensive	cyclical
4. defensive	speculative

10. Based on technical analysis, a share should be bought if …

1. the moving average line decreases and crosses the share price line.
2. the moving average line increases and crosses the share price line.
3. the overbought-oversold (OB-OS) line starts to increase from its maximum negative value.
4. Both alternative 2 and 3 above.

11. Consider a bond selling at par with effective duration of 10.6 years and convexity of 210. A 2% decrease in yield would cause the price to change by 21.2%, according to the duration rule. What would be the percentage price change according to the total effect?

    1. 10.60%
    2. 17.00%
    3. 21.20%
    4. 29.60%

    Use the following information to answer questions 12 and 13.

    A bond that pays 8% coupon payment rate annually on its R1000 face value matures in 4 years and is selling for R967.59.

12. Calculate the expected yield to maturity of the bond.

    1. 3.00%
    2. 7.00%
    3. 8.00%
    4. 9.00%

13. Calculate the current yield of the bond.

    1. 8.06%
    2. 8.27%
    3. 9.00%
    4. 9.50%

14. Calculate the effective duration of an 18%, R1000 par bond maturing in 15 years if the yield to maturity is 7% and interest is paid semi-annually.

    1. 5.23%
    2. 6.54%
    3. 7.74%
    4. 9.23%

15. An instrument issued by a company that gives an investor the right to buy shares in that company is a ....

   1. warrant.

   2. call option.

   3. put option.

   4. futures.

16. If two parties enter into an agreement to exchange 10% per annum interest (compounded annually) and a 3-month JIBAR on a notional amount of R35 million. What is the name of this agreement?

   1. Interest futures

   2. Interest rate swap

   3. Interest rate contract

   4. Interest rate forward

17. A call option on a share is currently selling for R35. The call option is in the money by R3. What is the strike price of the call?

   1. R32

   2. R35

   3. R38

   4. R42

18. Assume that at the end of four months, the price of a share currently trading at R80 will either move up or down by R5. Calculate the delta of an at-the-money European call option with a strike price of R73.

   1. 0.25

   2. 0.50

   3. 1.00

   4. 1.20

19. If there is a one-year spot rate of 6% and a two-year spot rate of 8%, the forward rate from year 1 to 2 is?

    1. 8.12%

    2. 9.06%

    3. 9.72%

    4. 10.04%

Use the information below to answer questions 20 to 22.

Probability of occurrence	Security A	Security B
50%	12%	10%
25%	10%	11%
25%	8%	9%

20. Calculate the standard deviation of Security A.

    1. 0.71%

    2. 0.97%

    3. 1.23%

    4. 1.66%

21. Calculate the correlation between security A and B; if the standard deviation of B is 1.23 and the covariance between the two is 1.30.

    1. 0.21

    2. 0.64

    3. 0.87

    4. 0.81

22. Calculate the portfolio risk if the measurement is 50% in A and 50% in B.

   1. 0.85%

   2. 1.31%

   3. 1.66%

   4. 2.72%

Use the information below to answer questions 23 to 25.

Portfolio	Average Return	Standard Deviation	Beta
A	8%	3	0.4
B	11%	8	1.0
C	14%	6	1.1
R	3%	0	0
Market Index	9%	9	1.0

The risk-free rate of return is 3%.

23. Calculate the Sharpe measure of Portfolio A.

   1. 0.50

   2. 1.00

   3. 1.67

   4. 1.83

24. Calculate the Jensen measure of Portfolio B.

   1. 2.00

   2. 2.60

   3. 3.00

   4. 4.40

25. Calculate the Treynor measure of Portfolio C.

    1. 8.00

    2. 10.00

    3. 12.50

    4. 14.00

ANSWERS TO THE SELF-ASSESSMENT QUESTIONS

Questions	Correct Options
1	1
2	1
3	2
4	3
5	4
6	2
7	2
8	3
9	4
10	4
11	4
12	4
13	2
14	3
15	2
16	2
17	1
18	3
19	4
20	4
21	2
22	2
23	3
24	1
25	2

The complete solutions to the self assessment questions will be uploaded on myUnisa and will also be included in TL201 which will be sent to you in due course. TL201 also contains the solutions to assignments 01 and 02.

10   OTHER ASSESSMENT METHODS

None.

11   EXAMINATION

Examination admission will be granted to all students who submit the compulsory assignment. Students who do not submit the compulsory assignment will NOT be allowed to write the examination.

The provisional examination dates have been published at https://my.unisa.ac.za

The two-hour examination paper for INV2601 will consist of 40 multiple-choice questions which must ALL be answered on the mark-reading sheet which will be provided. There is only ONE correct option per question. Each question will be worth 1 mark so that the total of the examination paper adds up to 40 marks. No formulae are provided in the examination paper.

The chapters that students have to study are chapters 1 to 15 of the prescribed textbook and the study guide. Chapter 16 of the prescribed textbook and study guide is not covered in the module.

A student must attain a mark of at least 40% in order to qualify for admission to the supplementary examination. Details about the procedure and cost for the re-marking of examination scripts may be found on myUnisa (https://my.unisa.ac.za).

12   FREQUENTLY ASKED QUESTIONS

SECTION A: ADMINISTRATIVE MATTERS

1   MATTERS PERTAINING TO REGISTRATION

What should I do if any of my personal details (name, address, etc) have been incorrectly captured during the registration process?

Please use myUnisa (https://my.unisa.ac.za) to rectify any mistakes. Alternatively send an e-mail to econ@unisa.ac.za. Alternatively mail us a letter addressed to The Registrar, PO Box 392, Unisa, 0003. Please remember to quote your student number in all correspondence.

What do I need to do to obtain items that were out of stock when I registered?

Please use the internet facility at https://my.unisa.ac.za in order to download copies of any of the study material. Alternatively send us an e-mail to despatch@unisa.ac.za. Please remember to quote your student number in all correspondence. Please allow ± 4 weeks for delivery of any outstanding items before contacting Unisa about out-of-stock items.

2   ASSIGNMENTS

My assignment is late because .... . Can I submit it at a later date?

It is your responsibility to ensure that your assignment is submitted at myUnisa or reaches the Unisa Main Campus on or before the closing date. Please do not call us to request an extension for the submission of an assignment. Once you have received the tutorial letter containing the solutions you will know that you definitely can no longer submit the assignment.

Are the assignments of this module compulsory?

The assignments are compulsory. The intention is that you should use the assignments to prepare yourself for the examination.

Do the marks obtained for assignments count towards the final mark?

The assignment marks do count towards the final marks, as explained in point 8.1 of this tutorial letter.

Who do I contact to find out if Unisa received my assignment(s) that I sent by mail?

Preferably submit your assignments via myUnisa. If you do not have access to the Internet and mailed Unisa your assignments, sms 43584 in order to determine if Unisa received your assignment(s).

What do I do if my assignment goes missing in the mail?

Preferably submit your assignments via myUnisa. Always make a copy of your assignment and keep it in a safe place in case you need to submit a duplicate copy.

Can I submit my assignments by e-mail?

No, all assignments must either be submitted via myUnisa or posted. Assignments e-mailed to lecturers will not be marked.

How long will I have to wait before I can expect my assignment(s) results?

We aim to have assignments marked within three (3) weeks after each due date. Visit https://my.unisa.ac.za to determine what mark you achieved. Allow an additional week or two for the post office to deliver the results to your postal address. The assignment results will be returned to the postal address that you indicated. Please do not call us to make enquiries about your assignment before four (4) weeks after the due date have elapsed.

Can I expect my assignment to be returned sooner if I submit it well before the due date?

The marking of assignments normally starts on the due dates indicated in this tutorial letters. Assignments are not marked or returned prior to the due dates.

What mark did I obtain for my assignment(s)?

Register as a user of the myUnisa facility and visit https://my.unisa.ac.za to find out the mark you received for your assignment(s).

3   EXAMINATION

What happens if I am unable to write the examination because of ill health, work commitments or any other crisis?

Any requests for aegrotat examinations need to be done in writing and directed to the Head: Examinations, PO Box 392, Unisa, 0003 or exams@unisa.ac.za. A fee is payable for such requests. The amount payable is determined by the Examination Section.

What happens if I fail any papers?

Students who fail any of the papers may be granted admission to write the supplementary examination scheduled for the next examination, provided they achieved a final mark of at least 40%. Any enquiries in this regard need to be directed to the Head: Examinations, PO Box 392, Unisa, 0003 or exams@unisa.ac.za.

What will happen if I do not write any of the papers during the supplementary examination?

In such a case you will have to obtain a registration form, complete it, pay the required fees and register again.

What do I need to bring to the examination venue?

Bring your identity document (ID), student card, an HB pencil, black pen, financial calculator, ruler, eraser, and pencil sharpener.

Will it be an open-book examination?

No.

Could you give me an idea of the scope of the examination paper?

The examination paper is based on your prescribed book and the learning outcomes provided in your study guide. Each learning outcome statement and assessment criterion may be used to set examination questions. Please do not call us to enquire about the "scope" of the examination paper.

4 RESULTS

I am going to be away when the examination results are due to be released. Could you please tell me what mark I obtained for this paper?

The results should be available four (4) weeks after completion of the examination period. Please do not call the lecturers to request your results.

How will the results be announced?

The results are normally mailed to students. They are also published at myUnisa https://my.unisa.ac.za and the MTN results facility, cellular number 083 1234.

5 STUDY GUIDE AND TUTORIAL LETTERS

I have lost my study guide and tutorial letters. Could you please mail or fax me a copy?

Please download a copy from the myUnisa. Register as a user at https://my.unisa.ac.za. The lecturers do not mail or fax copies of study guides to students. You may also order replacement copies of study guides from Unisa's Despatch Department. Please send an e-mail to despatch@unisa.ac.za or a letter to The Head, Despatch, PO Box 392, Unisa, 0003.

6 CHANGES IN REGISTRATION DETAILS

What do I need to do if I want to add or cancel any of the modules?

Please update your details at myUnisa. Alternatively send an e-mail, facsimile or letter to indicate any changes that need to be made to your registration. Any such changes must be completed two months before the examination. Please send an e-mail to econ@unisa.ac.za. Alternatively mail a letter addressed to The Registrar, PO Box 392, Unisa, 0003. Please remember to quote your student number in all correspondence.

7 ACCOUNTS

What do I do if I do not agree with my account statement?

Please send a letter addressed to The Head, Student Accounts, PO Box 392, Unisa, 0003. Alternatively send an e-mail to finan@unisa.ac.za.

Please provide a copy of your receipt(s), deposit slips or electronic funds transfer (EFT) as proof of payment as well as your student number.

Will the payment immediately appear on my account statement?

Please note that your payment will only be reflected on your next account statement.

SECTION B: ACADEMIC MATTERS

1 THE PRESCRIBED BOOK

May I use any alternative books?

We strongly recommend the use of the prescribed book. You are welcome to consult additional reading material but the examination paper is based on the prescribed book.

Which specific pages do I need to study and which can I leave out?

The chapters that need to be studied are indicated in your study guide. The study guide will indicate if any pages may be left out. You need to focus on achieving the learning outcome statements.

Could you highlight the most important aspects of each chapter?

Some students are inclined to study only the "most important aspects". This may prove to be disastrous in the examination. All aspects of the prescribed chapters identified by means of the learning outcome statements should be regarded as important for the examination.

CALCULATORS

Am I allowed to use a calculator?

Yes. In fact we would like to encourage you to use a **financial calculator**.

I have a scientific calculator. Will it be sufficient for this paper?

No. Please use a financial calculator.

Which calculator is prescribed or recommended?

We recommend the use of the HP 10bII or HP 10bII+.

Am I allowed to use a programmable calculator in the exam?

No.

2 SUPPLEMENTARY BOOKS AND VIDEOS

Are there any supplementary books and videos which I can use?

No supplementary books and videos are prescribed.

I would like to do some additional exercises and calculations. Could you provide me with the tutorial letters of 20..?

Because of limited storage space at Unisa, no tutorial letters from previous years are kept and/or made available to students. Visit myUnisa for additional resources, if available.

3 CONTACT WITH FELLOW STUDENTS

I wish to contact other students enrolled for this module in my area. Please provide me with their contact details.

Contact may be established with fellow students at the discussion forum and blog at myUnisa. Due to the constitutional right to privacy we may not disclose the details of students to their fellow students.

4 EXAMINATION

Are any old examination papers available?

Previous examination papers are published at myUnisa, but no memoranda are made available to students. Old questions will not necessarily be repeated in subsequent examination papers and students are warned not to rely on old examination papers in order to pass the module.

What will the format of the examination paper be like?

The format of the examination paper will be confirmed in one of the tutorial letters (normally tutorial letter 201) which will be sent to you during the semester/year.

Will the examination paper contain any theory questions or will there only be calculations and interpretations?

Most of the questions involve theory, applications, calculations and interpretations.

Will all the equations be provided as an annexure to the examination paper?

The equations will not be provided as part of the examination paper. You must be able to apply the equations in the exam. No marks are awarded for quoting equations in the examination script.

If I study only the assignment questions, will I be adequately prepared for the examination?

No. It is unlikely that you will be adequately prepared by studying only the assignment questions. The assignment questions represent a sample of the work and cannot be regarded as being representative of all the study material.

Can you give me the "scope" of or any "hints" for the exam?

No "hints" are provided to students. Please do not call the lecturers about the "scope" of or "hints" for the exam. Base your preparation for the examination on the learning outcome statements.

13   CONCLUSION

This tutorial letter provided you with the purpose and outcomes of the module. The contact details of the lecturer(s) have been provided, as well as module related resources and student support services.

It is important that you now prepare a study plan for yourself and devote 120 hours to this module in order to achieve success in the examination.

Details of your assessment have been provided, including your assignments for the semester/year.

Some frequently asked questions (FAQs) have been provided in order to save you a telephone call or e-mail.