INV2601   (493513)   October/November 2012

INVESTMENTS: AN INTRODUCTION

Duration   2 Hours   40 Marks

EXAMINERS :
FIRST   MS JM NJUGUNA
SECOND   MS M DOWELANI

Use of a non-programmable pocket calculator is permissible.

Closed book examination

This examination question paper remains the property of the University of South Africa and may not be removed from the examination venue.

This paper consists of 17 pages, including four sheets for rough work (pp 14-17) and the instructions for completing a mark-reading sheet All 40 questions must be answered on the mark-reading sheet

Indicate your student number and the unique number on the mark-reading sheet

Unique number: 493513

PLEASE COMPLETE THE ATTENDANCE REGISTER ON THE BACK PAGE, TEAR IT OFF AND HAND IT TO THE INVIGILATOR

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

TURN OVER

1   In order to achieve abnormal profits, technical analysts make a number of assumptions Which one of the following statements is such an assumption?

1   Market value is determined solely by the interaction between supply and demand
2   Supply and demand are influenced only by rational investor behaviour
3   Changes in trends are caused by changes in the future cash flows of companies listed on the stock exchange
4   Share prices tend to move in trends that are not persistent and repetitive

2   Which one of the following ratios is used to determine whether a company will be able to meet its short-term obligations as they fall due?

1   Long-term debt ratio
2   Current ratio
3   Average obligation period
4   Gross profit margin

Use the information below to answer question 3.

Items from the Balance Sheet and Income Statement for Gold Traders Limited on 30 June 2012	(R'000)
Shareholders' equity	2 104
Earnings before interest and tax	224
Earnings before tax	200
Total assets	1 368
Total debt	736
Tax at 35%	70

3   Calculate the return on equity (ROE) and the return on assets (ROA)

	ROE	_ROA_
1	6 18%	9 50%
2	7 32%	14 62%
3	9 51%	16 37%
4	10 65%	17 66%

Use the information below to answer questions 4 to 5.

An analyst has gathered the following information on Blue Bank Limited

Return on the market	13 5%
Risk free rate	6%
Beta of Blue Bank Limited	0 9
Constant growth rate of Blue Bank Limited	9%
Current dividend	R0 50
Market value	R16 35

4   Calculate the required rate of return using the capital asset pricing model (CAPM)

1   7 20%
2   12 75%
3   18 15%
4   19 50%

5   Using the **required rate of return**, calculated in **question 4**, calculate the value of the share and determine if the share is over or undervalued

1   R13 33, undervalued
2   R13 33, overvalued
3   R14 53, overvalued
4   R14 53, undervalued

6   An investor should not be expected to receive additional return for assuming   risk, because it is diversifiable

1   systematic
2   total
3   unsystematic
4   liquidity

7   A movement along the SML is due to

1   the change in the perceived risk of an investment
2   the change in nominal risk-free rate
3   the change in required rate of return
4   the change in the number of securities in a portfolio

Use the information in the table below to answer questions 8 to 11.

	Bull market	Normal market	Bear market
Probability	0 40	0 30	0.30
Share A's return	23%	15%	8%
Share B's return	25%	10%	7 5%

	Expected return	Standard deviation	Coefficient of variation
Share A	?	6 26%	?
Share B	15 25%	?	?

8   Calculate the expected return of **Share A**

1   15 33%
2   16 10%
3   17 67%
4   18 45%

9   Calculate the standard deviation of **Share B**

1   7 25%
2   8 02%
3   9 36%
4   10 11%

10 Calculate the coefficient of variation of **Share A**

1 0 39
2 0 54
3 2 43
4 2 56

11 Assume the expected inflation rate is 6% and the risk-free rate is 3 15% Calculate the nominal risk-free rate of return (NRFR)

1 9 34%
2 9 73%
3 15 52%
4 21 00%

12 Storm Limited specialises in purchasing and renting out blocks of flats and other residential property They have a required rate of return of 12% Storm Limited plans to purchase a block of flats in Sunnyview for R50 million and has projected the following cash flows as annual rent income

Year	Cash flows
	R' million
1	10
2	12 5
3	15
4	28
5	30 6

Calculate the NPV of the investment and determine the investment decision that should be taken as a result

1 -R12 00 million, investment is not acceptable
2 -R16 10 million, investment is not acceptable
3 R13 50 million, investment is acceptable
4 R14 73 million, investment is acceptable

13 Which of one of the following statements **is a difference between** a unit trust and a hedge fund?

   1 A unit trust has a limit on the number of investors who can invest while a hedge fund does not
   2 A unit trust may not invest more than 10% of its assets in any one security while a hedge fund has freedom to invest in any security
   3 A unit trust is allowed to advertise while a hedge fund is not
   4 A unit trust is traded monthly while a hedge fund is traded daily

14 Which transaction involves the sale of shares the investor does not own with the intention of buying them back at a later stage at a lower price?

   1 Short sales
   2 Market orders
   3 Limit orders
   4 Stop-loss order

15 Which one of the following statements about the holding period return (HPR) is **true**?

   1 HPR is a measure of the change in wealth resulting from an investment
   2 HPR less than one is an indication that wealth increased
   3 HPR is not a historical measure of return
   4 In order to convert the HPR to a rate of return one can multiply the HPR by 100

16 The risk/return principle simply means that the   the risk of a share, the   the investors' required rate of return will be

   1 smaller, higher
   2 greater, lower
   3 greater, higher
   4 smaller, wider

17 To which group of economic indicators do the following indicators belong?

    a Money supply

    b Index of consumer expectations

    c Average weekly initial claims for unemployment

    d Contracts and orders for plant and equipment

    1 Leading indicators

    2 Coincident indicators

    3 Lagging indicators

    4 Consecutive indicators

18 Which one of the following is not a stage in the industry life-cycle?

    1 Maturity stage

    2 Opening stage

    3 Consolidation stage

    4 Relative decline stage

19 Which one of the following statements about efficient markets is **true**?

    1 Investors make rational decisions that determine prices

    2 It requires a large number of mutually exclusive securities

    3 Investors expect price changes to be controlled

    4 Prices adjust rapidly to new information

20 The three-step valuation process involves the analysis of

    1 microeconomic prospects, industry and company

    2 macroeconomic prospects, industry and company

    3 the stock exchange, industry and share price

    4 the sector, microeconomic prospects and share price

TURN OVER

21 Which one of the following provisions allows for the repayment of principal through a series of payments over the life of the issue?

  1 Call provision
  2 Put provision
  3 Sinking fund provision
  4 Floating rate notes

22 Calculate the present value of a zero-coupon bond that has a par value of R1 000 with a maturity of 15 years and a yield to maturity of 9% compounded semi-annually

  1 R131 45
  2 R267 00
  3 R456 98
  4 R765 23

23 The theory on the term structure and the shape of the yield curve that states that the forward rates are solely a function of expected future spot rates is known as the

  1 liquidity preference theory
  2 expectations theory
  3 segmented market theory
  4 yield curve theory

24 Calculate the change in price due to duration (duration effect), if the yield to maturity decreases by 2% and the duration is 5 9

  1 -5 90%
  2 -17 70%
  3 2 95%
  4 11 80%

25 A 20 year, 7% semi-annual coupon bond (R1 000 par value) is priced at a yield to maturity of 10% The yield changes by 100 basis points Calculate the convexity of the bond

  1 22 24
  2 34 44
  3 42 22
  4 66 22

Use the information below to answer questions 26 and 27.

Themba Sibeco believes he has identified an arbitrage opportunity for a commodity and has gathered the following information

Commodity price and interest rate information

Spot price for commodity	R50
Futures price for commodity expiring in 1 year	R60
One-year interest rate	12%

26 Calculate the theoretical futures price of the commodity

1 R50
2 R56
3 R60
4 R62

27 Determine the actions that will realise an arbitrage opportunity

1 Buy futures, sell spot and invest money
2 Buy futures, buy spot and borrow money
3 Sell futures, buy spot and invest money
4 Sell futures, buy spot and borrow money

28 A 6-month European put with a strike price of R100 sells at a premium of R3 00 It has a risk-free rate of return of 5% and a current share price of R96 Using the put-call parity, calculate the equivalent value of the European call option

1 R1 41
2 R2 00
3 R2 20
4 R2 99

29 Which one of the following is **most likely accurate** with regard to an American-style option?

1 The option can be exercised before its expiration date
2 The option can be exercised on or before its expiration date
3. The option can be exercised only on its expiration date
4 None of the above

30 A put option on share A with a strike price of R60 is priced at R3, while a call with a strike price of R50 is priced at R4 What is the breakeven for the put holder (buyer) and the profit for the call holder (buyer) if the share price increases to R80?

	Breakeven for put holder	Profit for the call holder
1	R57	R26
2.	R57	R30
3	R68	R26
4	R68	R30

31 Which one of the following is a measure of an option's sensitivity to changes in the risk-free interest rate?

1 Theta
2 Gamma
3 Vega
4 Rho

32 Which of the following option trading strategies entails buying a put when owning the underlying asset in order to "protect" the value of a share or portfolio of shares, therefore insuring your stock position on the downside while still enjoying the upside potential? This option strategy also has a similar structure to a long call

1 Bull spread
2 Straddle
3 Covered call
4 Protective put

33 Which one of the following is **not** a constraint that should be considered by a portfolio manager when drawing up the investment policy statement?

   1 Legal and regulatory factors
   2 Tax concerns
   3 Capital preservation
   4 Liquidity and time horizon

Use the information in the table below to answer questions 34 to 35.

Shares	Expected return	Standard deviation	Weight in portfolio
A	12%	5%	60%
B	15%	10%	40%

A portfolio is made up of shares A and B The correlation of shares A and B is -0 80 and you may assume the factor of share A is 2

34 Calculate the standard deviation of the portfolio

   1 2 41%
   2 3 00%
   3 4 62%
   4 5 50%

35 Determine the optimal weight of share A in the portfolio

   1 20 00%
   2 30 00%
   3 33 33%
   4 66 67%

36 Assume the covariance of shares M and N is 0 78, the standard deviation of share M is 0 56 and the standard deviation of share N is 0 94 Calculate the correlation of the shares M and N

   1 0 67
   2 1 23
   3 1 48
   4 1 59

TURN OVER

37 Which one of the following is **not** a principle that is taken into account in active management of equity portfolio management strategies?

1   Buy and hold
2   Market timing
3   Theme selection
4   Share selection

Use the information below to answer questions 38 to 39.

Evaluate the unit trusts for performance evaluation The risk-free return during the sample period is 8%, and the average return on the market portfolio is 12% The average returns, standard deviations and betas for the three funds are given below

Unit trust	Average return	Standard deviation	Beta
Fund Alpha	12%	5%	0 8
Fund Beta	14%	15%	1 1
Fund Sigma	17%	10%	1 4

38 Determine the fund with the highest Sharpe measure

1   Fund Alpha
2   Fund Beta
3   Fund Sigma
4   Fund Alpha and Sigma are tied

39 Calculate the Jensen measure of Fund Alpha

1   0 20%
2   0 40%
3   0 80%
4   1 00%

Use the information in the table below to answer question 40.

Performance measure	Portfolio X	Portfolio Y	Market index	Best performer
Treynor performance index	3 50	5 00	2 50	Portfolio Y
Sharpe performance index	2 00	1 50	0 50	Portfolio X
Jensen measure	0 14%	0 29%	0 00%	Portfolio Y

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

1 Portfolio X
2 Portfolio Y
3 Market index
4 None of the above

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EXAMINATION MARK READING SHEET EKSAMEN-MERKLEESBLAD

PART 1 (GENERAL/ALGEMEEN) DEEL 1

STUDY UNIT e g PSY100-X
STUDIE-EENHEID bv PSY100-X

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② PAPER NUMBER
VRAESTELNOMMER

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VOORLETTERS EN VAN

DATE OF EXAMINATION **④**
DATUM VAN EKSAMEN -

EXAMINATION CENTRE (E G PRETORIA) **⑤**
EKSAMENSENTRUM (BV PRETORIA)

STUDENT NUMBER
STUDENTENOMMER **⑥**

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4 ENTER YOUR STUDENT NUMBER FROM LEFT TO RIGHT
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6 CHECK THAT THE UNIQUE NUMBER HAS BEEN FILLED IN CORRECTLY
7 CHECK THAT ONLY ONE ANSWER PER QUESTION HAS BEEN MARKED
8 DO NOT FOLD

BELANGRIK

1 GEBRUIK SLEGS N HB POTLOOD OM HIERDIE BLAD TE VOLTOOI
2 MERK AS VOLG
3 KONTROLEER DAT U VOORLETTERS EN VAN REG INGEVUL IS
4 VUL U STUDENTENOMMER VAN LINKS NA REGS IN
5 KONTROLEER DAT U DIE KORREKTE STUDENTENOMMER VERSTREK HET
6 KONTROLEER DAT DIE UNIEKE NOMMER REG INGEVUL IS
7 MAAK SEKER DAT NET EEN ALTERNATIEF PER VRAAG GEMERK IS
8 MOENIE VOU NIE

PART 2 (ANSWERS/ANTWOORDE) DEEL 2

⑩

1	c1 c2 c3 c4 c5	36	c1 c2 c3 c4 c5	71	c1 c2 c3 c4 c5	106	c1 c2 c3 c4 c5
2	c1 c2 c3 c4 c5	37	c1 c2 c3 c4 c5	72	c1 c2 c3 c4 c5	107	c1 c2 c3 c4 c5
3	c1 c2 c3 c4 c5	38	c1 c2 c3 c4 c5	73	c1 c2 c3 c4 c5	108	c1 c2 c3 c4 c5
4	c1 c2 c3 c4 c5	39	c1 c2 c3 c4 c5	74	c1 c2 c3 c4 c5	109	c1 c2 c3 c4 c5
5	c1 c2 c3 c4 c5	40	c1 c2 c3 c4 c5	75	c1 c2 c3 c4 c5	110	c1 c2 c3 c4 c5
6	c1 c2 c3 c4 c5	41	c1 c2 c3 c4 c5	76	c1 c2 c3 c4 c5	111	c1 c2 c3 c4 c5
7	c1 c2 c3 c4 c5	42	c1 c2 c3 c4 c5	77	c1 c2 c3 c4 c5	112	c1 c2 c3 c4 c5
8	c1 c2 c3 c4 c5	43	c1 c2 c3 c4 c5	78	c1 c2 c3 c4 c5	113	c1 c2 c3 c4 c5
9	c1 c2 c3 c4 c5	44	c1 c2 c3 c4 c5	79	c1 c2 c3 c4 c5	114	c1 c2 c3 c4 c5
10	c1 c2 c3 c4 c5	45	c1 c2 c3 c4 c5	80	c1 c2 c3 c4 c5	115	c1 c2 c3 c4 c5
11	c1 c2 c3 c4 c5	46	c1 c2 c3 c4 c5	81	c1 c2 c3 c4 c5	116	c1 c2 c3 c4 c5
12	c1 c2 c3 c4 c5	47	c1 c2 c3 c4 c5	82	c1 c2 c3 c4 c5	117	c1 c2 c3 c4 c5
13	c1 c2 c3 c4 c5	48	c1 c2 c3 c4 c5	83	c1 c2 c3 c4 c5		c1 c2 c3 c4 c5
14	c1 c2 c3 c4 c5	49	c1 c2 c3 c4 c5	84	c1 c2 c3 c4 c5		c1 c2 c3 c4 c5
15	c1 c2 c3 c4 c5	50	c1 c2 c3 c4 c5	85	c1 c2 c3 c4 c5		
16	c1 c2 c3 c4 c5	51	c1 c2 c3 c4 c5		c2 c3 c5	121	c1 c2 c3 c4 c5
17	c1 c2 c3 c4 c5	52	c1 c2 c3 c4		c2 c3 c4 c5	122	c1 c2 c3 c4 c5
18	c1 c2 c3 c4 c5	53	c1 c2 c3	88	c1 c2 c3 c4 c5	123	c1 c2 c3 c4 c5
19	c1 c2 c3 c4 c5	54	c2 c3 c4	89	c1 c2 c3 c4 c5	124	c1 c2 c3 c4 c5
20	c1 c2 c3 c4 c5		c1 c2 c5	90	c1 c2 c3 c4 c5	125	c1 c2 c3 c4 c5
21	c1 c2 c3 c4 c5	56	c1 c2 c3 c4 c5	91	c1 c2 c3 c4 c5	126	c1 c2 c3 c4 c5
22	c1 c2 c3	57	c1 c2 c3 c4 c5	92	c1 c2 c3 c4 c5	127	c1 c2 c3 c4 c5
23	c1 c2 c3 c4	58	c1 c2 c3 c4 c5	93	c1 c2 c3 c4 c5	128	c1 c2 c3 c4 c5
24	c1 c2 c3 c4 c5	59	c1 c2 c3 c4 c5	94	c1 c2 c3 c4 c5	129	c1 c2 c3 c4 c5
25	c1 c2 c3 c4 c5	60	c1 c2 c3 c4 c5	95	c1 c2 c3 c4 c5	130	c1 c2 c3 c4 c5
26	c1 c2 c3 c4 c5	61	c1 c2 c3 c4 c5	96	c1 c2 c3 c4 c5	131	c1 c2 c3 c4 c5
27	c1 c2 c3 c4 c5	62	c1 c2 c3 c4 c5	97	c1 c2 c3 c4 c5	132	c1 c2 c3 c4 c5
28	c1 c2 c3 c4 c5	63	c1 c2 c3 c4 c5	98	c1 c2 c3 c4 c5	133	c1 c2 c3 c4 c5
29	c1 c2 c3 c4 c5	64	c1 c2 c3 c4 c5	99	c1 c2 c3 c4 c5	134	c1 c2 c3 c4 c5
30	c1 c2 c3 c4 c5	65	c1 c2 c3 c4 c5	100	c1 c2 c3 c4 c5	135	c1 c2 c3 c4 c5
31	c1 c2 c3 c4 c5	66	c1 c2 c3 c4 c5	101	c1 c2 c3 c4 c5	136	c1 c2 c3 c4 c5
32	c1 c2 c3 c4 c5	67	c1 c2 c3 c4 c5	102	c1 c2 c3 c4 c5	137	c1 c2 c3 c4 c5
33	c1 c2 c3 c4 c5	68	c1 c2 c3 c4 c5	103	c1 c2 c3 c4 c5	138	c1 c2 c3 c4 c5
34	c1 c2 c3 c4 c5	69	c1 c2 c3 c4 c5	104	c1 c2 c3 c4 c5	139	c1 c2 c3 c4 c5
35	c1 c2 c3 c4 c5	70	c1 c2 c3 c4 c5	105	c1 c2 c3 c4 c5	140	c1 c2 c3 c4 c5

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