



**INV3703**

( 473630)

May/June 2011

**INVESTMENTS: DERIVATIVES**

Duration 2 Hours

40 Marks

EXAMINERS ·  
FIRST  
SECOND  
EXTERNAL

MR G MAROZVA  
MS E BOTHA  
MR JS DE BEER (PRETORIA - UP )

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Use of a non-programmable pocket calculator is permissible.

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This paper consists of 20 pages, including the Standard Normal Distribution table (p 14) and six sheets of paper for rough work (pp 15-20) 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 correct unique number on the mark-reading sheet.

Unique number 473630

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

1. Which of the following accurately describes a derivative security? A derivative security .
  - 1 has no expiration date.
  2. is a contingent claim
  - 3 is a forward commitment.
  - 4 has a payoff based on another asset
  
- 2 Which of the following accurately describes a swap option? A swap is
  - 1 the exchange of one asset for another
  - 2 highly regulated
  - 3 a right but not an obligation to buy or sell an asset at a specific price
  - 4 a series of forward contracts
  
3. A forward contract covering a R15 million face value T-bills that will have 93 days to maturity at contract settlement is priced at 1 33 on a discount yield basis. Calculate the dollar amount the long must pay at settlement for the T-bills
  - 1 R14,948,462 50
  - 2 R14,800,500 00
  - 3 R15,199,500.00
  - 4 R15,051,000 50
  
- 4 What will happen to a party who is *short in a bond forward position* if market interest rates increases? A short, will
  - 1 have losses
  2. have profits
  - 3 have his/her position unchanged
  - 4 have a right not to perform
  
- 5 ECONET PLC is expecting to receive a cash inflow of R11,000,000 00 in 180 days Short-term interest rates are expected to increase during the next 180 days In order to hedge against this risk, the company decides to use a FRA that expires in 180 days and is based on 180 day LIBOR The FRA is quoted at 7% At expiration LIBOR is 9% Indicate whether the company should take a long or short position to hedge interest rate risk Calculate the gain or loss to ECONET PLC as a consequence of entering the FRA
  - 1 Long            R101,321 77
  - 2 Long            R101,754 72
  - 3 Short            R105,321 66
  - 4 Short            R105,263 16

- 6 The euro currently trades at R10 0317/Euro The Rand risk-free rate is 7.2%, and the euro risk-free rate is 4.4% Three-month forward contracts are quoted at a rate of R10 0866/Euro The arbitrage profit earned by engaging in a forward contract is *closest to*
- 1 R0 0002
  - 2 R0.0018
  - 3 R0 0011
  - 4 R0 0180
- 7 Which of the following statements regarding early termination of a forward contract is *most accurate*?
- 1 Early termination through an offsetting transaction with the original counterparty eliminates default risk
  - 2 A party who enters in an offsetting contract to terminate has no risk
  - 3 A party who terminates a forward contract early must make a cash payment
  - 4 A party who enters in an offsetting contract to terminate always profit from the transaction
8. A security is priced at R750 today The forward contract on this security is currently priced at R875 and expires in 9 months The annual interest rate is 6.30%

Calculate the value of the off-market forward contract today

- 1 -R73.14
- 2 -R85.81
- 3 R125.00
- 4 R245.10

Use the following formulas to help you in the calculation of number 9 & 10

$$FRA_{rate} = \left[ \frac{1 + L_0 \left( \frac{h+m}{360} \right)}{1 + L_0 \left( \frac{h}{360} \right)} - 1 \right] \left( \frac{360}{m} \right)$$

$$V_g = \left[ \frac{1}{1 + L_g(h-g) \left( \frac{h-g}{360} \right)} \right] - \left[ \frac{1 + FRA_{rate} \left( \frac{m}{360} \right)}{1 + L_g(h+m-g) \left( \frac{h+m-g}{360} \right)} \right]$$

- 9 Brighton Mashanda, a corporate treasurer needs to hedge the interest rate risk on a future transaction of his company. The risk is associated with the rate on 90-day Libor in 60 days. The term structure of Libor is given as follows:

60-day Libor	3.25%
150-day Libor	4.75%

Calculate the FRA expiring in 60-days on the 90-days Libor

- 1 4.65%
  - 2 4.98%
  - 3 5.72%
  - 4 5.89%
- 10 Brighton Mashanda took a long position in the FRA, now 30 days later the interest rates are as follows:

30-day Libor	3.00%
120-day Libor	4.25%

The market value of the FRA for a \$20 million notional principal is *closest to*

- 1 - \$52,629.42
  - 2 \$51,475.67
  - 3 - \$33,500.00
  - 4 \$33,970.00
- 11 Which of the following statements regarding equity forward contracts is least accurate?
- 1 A short position in an equity forward could not hedge the risk of a purchase of that equity in the future.
  - 2 Dividends are never included in an index forward.
  - 3 Equity forwards may be settled in cash.
  - 4 The underlying asset could be a stock or an equity index.
- 12 Tawana Mhofu has entered a six months currency forward contract to purchase £12 million at an exchange rate of R11.57/£. After six months at settlement, the exchange rate is R11.29/£. If the contract is settled in cash, Tawana will
- 1 Receive a payment of R1,680,000
  - 2 Make a payment of R1,680,000
  - 3 Receive a payment of R3,360,000
  - 4 Make a payment of R3,360,000

13 Three 115,000 euro futures contracts are sold at a price of \$0.985. The next day the price settles at \$1.021. The mark to market for this account changes the previous day's margin by

- 1 -\$12,420
- 2 \$12,420
- 3 \$4,140
- 4 -\$4,140

14 A conversion factor in a treasury bond contract is

1. Used to adjust the number of bonds to be delivered
2. Multiplied by the face value to determine the delivery price
3. Multiplied by the futures price to determine the delivery price
4. Used to adjust the number of futures at expiration

*Use the following information to answer questions 15 and 16*

Rudo Maravanyika, a portfolio manager with Sanlam Asset Management Company, considers taking a position in the futures market. Given that a R100 face value bond pays a 6% semi-annual coupon, the annual yield is 5%. The bond has 10 years remaining until maturity, and its price is R121.54. Consider a futures contract that is calling for delivery of this bond only. The contract expires in 18 months. The risk-free rate is 4.5%.

15 What is the appropriate futures price that Rudo should pay at expiration?

- 1 R150.55
- 2 R117.31
- 3 R176.57
- 4 R120.64

16. Assuming that the futures contract is priced at R138.10, calculate the riskless profit or loss that Rudo would earn if she were to take a *long* position in futures

- 1 R16.00
- 2 R16.56
- 3 R17.46
- 4 R18.39

Use the following information to answer questions 17 and 18

Tenson Muchararadza is a fund manager for Eagle Investments PLC. He has asked their commodity analyst Ruth to look into the possibility to invest in gold futures. Ruth has gathered the following information. The current price of gold is \$987 and the risk-free interest rate is 6.5%. Assume the net cost of carry for gold is zero.

17. Calculate the price of the gold futures contract that expires in 240 days
1. \$1,028.73
  2. \$1,007.44
  3. \$982.73
  4. \$946.96
18. If the 240 days futures contract were priced at \$1,065, what arbitrage transaction could be executed?
1. Take a long futures position and sell short the gold
  2. Take a long futures position and buy the gold
  3. Take a short futures position and buy the gold
  4. Take a short futures position and sell short the gold.
19. Consider a European style put option on a bond. The option expires in 186 days. The bond is currently priced at \$55.00 and makes no cash payments during the life of the option. The risk-free rate is 8%. Calculate the lowest and highest possible price for the put options with exercise price of \$62.00

	<u>Lowest Price</u>	<u>Highest price</u>
1.	\$6.22	\$0
2.	\$7.00	\$55.00
3.	\$0	\$7.00
4.	\$6.22	\$61.22

- 20 An analyst at Selah Capital is provided with the following information on put and call options on a stock

Call price = \$2 50  
 Put price = \$1 93  
 Strike price = \$20  
 Days to option expiration = 230  
 Current stock price = \$22  
 Risk-free rate = 5%

Use put-call parity to calculate prices of the synthetic call option, and synthetic underlying stock

	<u>Synthetic call</u>	<u>Synthetic Stock</u>
1	\$5 41	\$19 25
2	\$4 54	\$19 96
3	\$4 71	\$21 24
4.	\$5 78	\$21 96

- 21 Consider a two-period binomial model in which a stock currently trades at a price of \$25. The stock price can go up 10% or down 10% each period. The risk-free rate is 6.7%. Calculate the price of a European call option expiring in two periods with an exercise price of \$21

- 1 \$6 98
- 2 \$6 57
- 3 \$5 32
4. \$5 65

- 22 Jokonia Mathe is an owner of a call option on oil futures with a strike price of R45. *Jokonia Mathe.*

- 1 can exercise the option and take delivery of the oil
- 2 can exercise the option and take a long position in oil futures.
- 3 would never exercise the option when the spot price of oil is less than the strike
- 4 would not exercise the option when inflation increases

- 23 To account for positive cash flows from the underlying asset, we need to adjust the put-call parity formula by

- 1 adding the future value of the cash flows to  $S_0$
- 2 adding the future value of the cash flows to  $X$
- 3 subtracting the present value of the cash flows from  $S_0$
- 4 subtracting the present value of the cash flows from  $X$

- 24 An increase in the risk-free rate of interest will
- 1 increase call and put prices
  - 2 decrease call and put prices.
  - 3 decrease put prices and increase call prices
  - 4 increase put prices and decrease call prices
- 25 Consider a one-period binomial model in which the stock currently trades at \$20. The stock price can go up 20% or down 20% each period. The risk-free rate is 3%. A call option on this stock expiring in one period has an exercise price of \$22. Calculate the number of units of the underlying stock that would be needed at time 0 in the binomial tree in order to construct a risk-free hedge. Use 3,000 calls
- 1 Long position in 2,372 shares of the underlying stock
  - 2 Short position in 2,372 shares of the underlying stock
  - 3 Long position in 750 shares of the underlying stock
  - 4 Short position in 750 shares of the underlying stock
- 26 Consider the following information on put and call options on a stock and calculate the arbitrage profit one would make using a synthetic call
- |                            |         |
|----------------------------|---------|
| Call price, $c_0$          | \$4.50  |
| Put price, $p_0$           | \$6.80  |
| Exercise price, $X$        | \$70    |
| Days to expiration         | 140     |
| Current stock price, $S_0$ | \$66.32 |
| Risk-free rate, $r$        | 4.8%    |
- 1 \$0.13
  - 2 \$0.96
  - 3 \$1.01
  - 4 \$1.29

Question 27-28 Consider an asset that trades at \$35 today. Call and put options on this asset are available at an exercise price of \$37. The options expire in 282 days, and the volatility is 0.53. The *continuously compounded risk-free rate* is 4%.

Use the following formulas to assist you in your calculations

$$c = SN(d_1) - Xe^{-rT}N(d_2)$$

$$d_1 = \frac{\ln(S/X) + [r + (\sigma^2/2)]T}{\sigma\sqrt{T}}$$

$$d_2 = d_1 - \sigma\sqrt{T}$$

27 Calculate the  $N(d_1)$  and  $N(d_2)$  using the Black-Scholes-Merton model.

- |   |        |        |
|---|--------|--------|
| 1 | 0.5571 | 0.2325 |
| 2 | 0.5687 | 0.3443 |
| 3 | 0.5714 | 0.3859 |
| 4 | 0.5887 | 0.5557 |

28. Calculate the values of a European call option using the Black-Scholes-Merton model

- |   |        |
|---|--------|
| 1 | \$0    |
| 2 | \$5.00 |
| 3 | \$5.54 |
| 4 | \$6.16 |

Question 29-30. A forward contract is priced at 100. European options on the forward contract have an exercise price of 110 and expires in 100 days. The *discrete risk-free rate* is 3 percent, and volatility is 0.29.

Use the following formulas to assist you in your calculations

$$p = e^{-rT} [XN(-d_2) - FN(-d_1)]$$

$$d_1 = \frac{\ln(F/X) + (\sigma^2/2)T}{\sigma\sqrt{T}}$$

$$d_2 = d_1 - \sigma\sqrt{T}$$

29. Calculate  $d_1$  and  $d_2$ , using the Black model

- |    |         |         |
|----|---------|---------|
| 1  | -0.5520 | -0.7038 |
| 2. | 0.2660  | 0.4009  |
| 3. | 0.4351  | 0.2907  |
| 4  | -0.4345 | -0.2967 |

30. Calculate the price of the put option on the forward contract using the Black model

- 1 \$0
- 2 \$10.1592
- 3 \$10.9775
- 4 \$12.3988

31 A company has most of its liabilities in the form of floating-rate notes with a maturity of two years and quarterly reset. The company is not concerned with interest rate movements over the next four quarters but is interested in the potential movement thereafter. Identify the most appropriate strategy that would allow the company to hedge the expected change in interest rates

- 1 Go long a payer swaption with a one-year maturity
- 2 Go long a receiver swaption with a one-year maturity
- 3 Enter into a two-year, quarterly pay-floating, receive-fixed swap
- 4 Enter into a two-year quarterly pay-floating, receive-fixed swap

*Use the following information to answer questions 32 and 33*

Richard Mapinge is a swap dealer considering to take a position in a one year swap with quarterly payments. Assume a notional principal of \$8 million. The annualized LIBOR spot rates today are

- |            |          |
|------------|----------|
| $L_0(90)$  | = 0.0681 |
| $L_0(180)$ | = 0.0698 |
| $L_0(270)$ | = 0.0742 |
| $L_0(360)$ | = 0.0755 |

32. If Richard is a fixed rate payer how much will he pay quarterly on the notional principal of \$8 million?

1. \$117,500.00
- 2 \$146,758.30
- 3 \$137,500.00
- 4 \$140,154.67

- 33 Calculate the market value of the swap 55 days later from the point of view of Richard Mapinge i.e paying the fixed rate and receiving the floating rate At day 55 the new term structure of LIBORs are as follows

L <sub>55</sub> (35)	= 0 085
L <sub>55</sub> (125)	= 0.0872
L <sub>55</sub> (215)	= 0 0888
L <sub>55</sub> (305)	= 0 0961

1	\$118,000 00
2	-\$118,766 12
3.	\$110,283.16
4	-\$110,000 00

*Use the following data to answer Questions 34 through 36*

Consider a 3-year annual currency swap that takes place between a firm in South Africa (Liberty Life) and an American firm (Trump Towers) Trump Towers is a fixed rate payer and Liberty Life is the floating rate payer The fixed interest rate at the initiation of the swap is 7%, and 8% at the end of the swap The variable rate is 5% currently; 6% at the end of the year 1, 8% at the end of year 2, and 7% at the end of year 3 At the beginning of the swap, \$3 million dollars is exchanged at an exchange rate of R7.69/\$ At the end of the swap period the exchange rate is R7.33/\$

Note with currency swap, end of period payments are based on beginning of period interest rates.

- 34 At the initiation of the swap which statement is most likely correct?
- 1 Liberty life gives Trump towers \$3 million.
  2. Liberty life receives R21 99 million from Trump towers
  - 3 Trump towers gives Liberty life R390,117 04
  - 4 Trump towers receives R23 07 million from Liberty life
35. At the end of year 2
- 1 Liberty life pays R1,500,000, Trump towers pays \$250,000
  - 2 Liberty life pays R180,000, Trump towers pays \$19,000
  - 3 Liberty life pays \$180,000, Trump towers pays R1,614,900
  - 4 Liberty life pays \$250,000, Trump towers pays R1,500,000
- 36 At the end of year 3, Liberty life will pay which of the following total amounts?
- 1 \$3,218,000
  - 2 \$3,240,000
  - 3 R3,225,000
  - 4 R1,614,900

- 37 Indicate the correct statement from the following alternatives
- 1 Payoffs on an interest rate swaption are like those of an option on a zero-coupon bond
  - 2 Swaptions are not based on specific underlying swaps but have a set exercise and expiration date
  - 3 A swaption is the option to enter into a swap contract and gives the user more flexibility
  - 4 A swaption is not a derivative

*Use the following data to answer Question 38*

Consider a European receiver swaption that expires in one year and is on a two-year swap that will make semiannual payments. The swaption has an exercise rate of 6.3% and the notional principal is \$40 million. At expiration the term structure of interest rates is as follows.

$L_0(180)$	= 0.0320
$L_0(360)$	= 0.0370
$L_0(540)$	= 0.0460
$L_0(720)$	= 0.0560

- 38 Calculate the market value of the swaption at expiration

- 1 \$500,000
- 2 \$714,000
- 3 \$501,250
- 4 \$740,000

- 39 In a plain vanilla interest rate swap

- 1 The notional principal is swapped
- 2 Only the net interest payments are made
- 3 The notional principal is returned at the end of the swap
- 4 The fixed rate is swapped for a fixed rate payment

40 Chris Mugona is an asset manager at MMC Capital who wishes to reduce his exposure to equities and increases his exposure to fixed-income securities. He agrees to pay the dealer returns on a large-cap index, and the dealer agrees to pay Chris a fixed rate of 3 percent. Calculate the overall payment six months later and indicate which party makes the payment, if the value of the large-cap index starts off at 1696.44 and six months later is at 1723.42. Assume that the payments are made semiannually. The notional principal is \$34 million.

- |    |             |                           |
|----|-------------|---------------------------|
| 1  | \$30,732.36 | Asset manager pays dealer |
| 2. | \$36,565.10 | Asset manager pays dealer |
| 3  | \$44,099.35 | Dealer pays asset manager |
| 4  | \$86,565.10 | Dealer pays asset manager |

**Total marks**

**[40]**

*Cumulative Probabilities for a Standard Normal Distribution*

$$P(X \leq x) = N(x) \text{ for } x \geq 0 \text{ or } 1 - N(-x) \text{ for } x < 0$$

x	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.00	0 5000	0 5040	0 5080	0 5120	0 5160	0 5199	0 5239	0 5279	0 5319	0 5359
0.10	0 5398	0 5438	0 5478	0 5517	0 5557	0 5596	0 5636	0 5675	0 5714	0 5753
0.20	0 5793	0 5832	0 5871	0 5910	0 5948	0 5987	0 6026	0 6064	0 6103	0 6141
0.30	0 6179	0 6217	0 6255	0 6293	0 6331	0 6368	0 6406	0 6443	0 6480	0 6517
0.40	0 6554	0 6591	0 6628	0 6664	0 6700	0 6736	0 6772	0 6808	0 6844	0 6879
0.50	0 6915	0 6950	0 6985	0 7019	0 7054	0 7088	0 7123	0 7157	0 7190	0 7224
0.60	0 7257	0 7291	0 7324	0 7357	0 7389	0 7422	0 7454	0 7486	0 7517	0 7549
0.70	0 7580	0 7611	0 7642	0 7673	0 7704	0 7734	0 7764	0 7794	0 7823	0 7852
0.80	0 7881	0 7910	0 7939	0 7967	0 7995	0 8023	0 8051	0 8078	0 8106	0 8133
0.90	0 8159	0 8186	0 8212	0 8238	0 8264	0 8289	0 8315	0 8340	0 8365	0 8389
1.00	0 8413	0 8438	0 8461	0 8485	0 8508	0 8531	0 8554	0 8577	0 8599	0 8621
1.10	0 8643	0 8665	0 8686	0 8708	0 8729	0 8749	0 8770	0 8790	0 8810	0 8830
1.20	0 8849	0 8869	0 8888	0 8907	0 8925	0 8944	0 8962	0 8980	0 8997	0 9015
1.30	0 9032	0 9049	0 9066	0 9082	0 9099	0 9115	0 9131	0 9147	0 9162	0 9177
1.40	0 9192	0 9207	0 9222	0 9236	0 9251	0 9265	0 9279	0 9292	0 9306	0 9319
1.50	0 9332	0 9345	0 9357	0 9370	0 9382	0 9394	0 9406	0 9418	0 9429	0 9441
1.60	0 9452	0 9463	0 9474	0 9484	0 9495	0 9505	0 9515	0 9525	0 9535	0 9545
1.70	0 9554	0 9564	0 9573	0 9582	0 9591	0 9599	0 9608	0 9616	0 9625	0 9633
1.80	0 9641	0 9649	0 9656	0 9664	0 9671	0 9678	0 9686	0 9693	0 9699	0 9706
1.90	0 9713	0 9719	0 9726	0 9732	0 9738	0 9744	0 9750	0 9756	0 9761	0 9767
2.00	0 9772	0 9778	0 9783	0 9788	0 9793	0 9798	0 9803	0 9808	0 9812	0 9817
2.10	0 9821	0 9826	0 9830	0 9834	0 9838	0 9842	0 9846	0 9850	0 9854	0 9857
2.20	0 9861	0 9864	0 9868	0 9871	0 9875	0 9878	0 9881	0 9884	0 9887	0 9890
2.30	0 9893	0 9896	0 9898	0 9901	0 9904	0 9906	0 9909	0 9911	0 9913	0 9916
2.40	0 9918	0 9920	0 9922	0 9925	0 9927	0 9929	0 9931	0 9932	0 9934	0 9936
2.50	0 9938	0 9940	0 9941	0 9943	0 9945	0 9946	0 9948	0 9949	0 9951	0 9952
2.60	0 9953	0 9955	0 9956	0 9957	0 9959	0 9960	0 9961	0 9962	0 9963	0 9964
2.70	0 9965	0 9966	0 9967	0 9968	0 9969	0 9970	0 9971	0 9972	0 9973	0 9974
2.80	0 9974	0 9975	0 9976	0 9977	0 9977	0 9978	0 9979	0 9979	0 9980	0 9981
2.90	0 9981	0 9982	0 9982	0 9983	0 9984	0 9984	0 9985	0 9985	0 9986	0 9986
3.00	0 9987	0 9987	0 9987	0 9988	0 9988	0 9989	0 9989	0 9989	0 9990	0 9990

**PAGE FOR ROUGH WORK**

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**PART 1 (GENERAL/ALGEMEEN) DEEL 1**

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

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PAPER NUMBER  
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c1	c1	c1	c1	c1	c1	c1	c1
c2	c2	c2	c2	c2	c2	c2	c2
c3	c3	c3	c3	c3	c3	c3	c3
c4	c4	c4	c4	c4	c4	c4	c4
c5	c5	c5	c5	c5	c5	c5	c5
c6	c6	c6	c6	c6	c6	c6	c6
c7	c7	c7	c7	c7	c7	c7	c7
c8	c8	c8	c8	c8	c8	c8	c8
c9	c9	c9	c9	c9	c9	c9	c9

INITIALS AND SURNAME  
 VOORLETTERS EN VAN

DATE OF EXAMINATION  
 DATUM VAN EKSAMEN

EXAMINATION CENTRE (E.G. PRETORIA)  
 EKSAMENSENTRUM (BV. PRETORIA)

UNIQUE PAPER NO  
 UNIEKE VRAESTEL NR

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c1	c1	c1	c1	c1	c1	c1	c1
c2	c2	c2	c2	c2	c2	c2	c2
c3	c3	c3	c3	c3	c3	c3	c3
c4	c4	c4	c4	c4	c4	c4	c4
c5	c5	c5	c5	c5	c5	c5	c5
c6	c6	c6	c6	c6	c6	c6	c6
c7	c7	c7	c7	c7	c7	c7	c7
c8	c8	c8	c8	c8	c8	c8	c8
c9	c9	c9	c9	c9	c9	c9	c9

For use by examination invigilator  
 Vir gebruik deur eksamenopsiener

**IMPORTANT**

- 1 USE ONLY AN HB PENCIL TO COMPLETE THIS SHEET
- 2 MARK LIKE THIS
- 3 CHECK THAT YOUR INITIALS AND SURNAME HAS BEEN FILLED IN CORRECTLY
- 4 ENTER YOUR STUDENT NUMBER FROM LEFT TO RIGHT
- 5 CHECK THAT YOUR STUDENT NUMBER HAS BEEN FILLED IN CORRECTLY
- 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 GEBUIK 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**

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140	c1	c2	c3	c4	c5

**Specimen only**