


FIN2601 (492496)
RFI2601 (480042)

May/June 2012

FINANCIAL MANAGEMENT

Duration 2 Hours

70 Marks

EXAMINERS

FIRST

SECOND

MR AB SIBINDI

MR JS KASOZI

MS PLR MAKONI

Use of a non-programmable pocket calculator is permissible

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 24 pages, including four pages for rough work (pp 17-20) and appendix A (tables, pages i-iv) plus instructions for the completion of a mark-reading sheet

THIS PAPER CONSISTS OF THE FOLLOWING QUESTIONS:

Topic	Questions	Mark allocation
Section A		
The role and environment of managerial finance	1 to 4	4
Financial statements and analysis	5 to 10	6
Time value of money	11 to 20	10
Risk and return	21 to 26	6
Share valuation	27 to 32	6
Interest rates and bond valuation	33 to 40	8
Section B		
Share valuation	1	15
Interest rates and bond valuation	2 1	7
Financial statements and analysis	2 2	8
TOTAL		70

ANSWER ALL THE QUESTIONS IN BOTH SECTIONS

SECTION A: MULTIPLE-CHOICE QUESTIONS

- 1 A typical company has many types of shareholders, from individuals holding a few shares, to large institutions that hold very large numbers of shares. How does a financial manager ensure that the priorities and concerns of such a wide variety of shareholders are met?
 - 1 The financial manager should seek to make investments that do not harm the interests of the shareholders
 - 2 The decisions taken by the financial manager should be solely influenced by the benefit to the company since, by maximising the benefits to the company, he/she will also maximise the benefits of that company's shareholders
 - 3 The financial manager should consider the interests and concerns of large shareholders a priority so that the needs of those who hold a controlling interest in the company are met
 - 4 The financial manager should work to maximise the value of the investments of all shareholders

- 2 Which of the following manager behaviours best fits the description of a principal-agent problem?
 - 1 Kelvin chooses to pursue a risky investment for the company's fund because his compensation will rise substantially if it succeeds
 - 2 Thembi instructs her staff to skip safety inspections in one of the company's factories, knowing that it will likely fail the inspection and will have to incur significant costs to fix it
 - 3 Francois ignores an opportunity for his company to invest in a new drug to fight Alzheimer's disease, as he has judged the drug's chances of succeeding as low
 - 4 Thomas, at some cost to shareholders, chooses to enhance his firm's reputation by sponsoring a team of athletes for the Special Olympics

- 3 What financial securities are likely to be traded on the JSE Limited?
 - 1 Treasury bills
 - 2 Commercial paper
 - 3 Ordinary shares
 - 4 Company bonds

- 4 Which of the following will be a priority for a firm with a goal of profit maximisation?
 - 1 Cash flows available to shareholders
 - 2 Risk of the investment
 - 3 Earnings per share
 - 4 Timing of returns

[TURN OVER]

- 5 A corporation had a 2010 year-end retained earnings balance of R220 000. The firm reported net profits after taxes of R50 000 in 2011 and paid dividends in 2011 of R30 000. The firm's retained earnings balance at year end 2011 was _____
- 1 R240 000
 - 2 R250 000
 - 3 R270 000
 - 4 R300 000
- 6 In general, an investor would consider a decrease in which of the following ratios to be bad news?
- 1 Acid test ratio
 - 2 Debt to total assets
 - 3 Return on assets
 - 4 Earnings per share
- 7 Bukhosi observes a decrease in a company's inventory turnover. Which one of the following would explain this trend?
- 1 The company implemented a new inventory management system, allowing more efficient inventory management
 - 2 Due to problems with obsolescent inventory last year, the company wrote off a large amount of its inventory at the beginning of the period
 - 3 The company introduced a new inventory management system, but experienced some operational difficulties resulting in duplicate orders being placed with suppliers
 - 4 The company has implemented a just-in-time inventory management policy in line with industry best practice
- 8 A firm has a current ratio of 1,00. What must the firm do in order to improve its liquidity position?
- 1 Improve its collection practices, thereby increasing cash and increasing its current and quick ratios
 - 2 Improve its collection practices and pay accounts payable, thereby decreasing current liabilities and increasing the current and quick ratios
 - 3 Decrease current liabilities by utilising more long-term debt, thereby increasing the current and quick ratios
 - 4 Increase inventory, thereby increasing current assets and the current and quick ratios

[TURN OVER]

- 9 An analyst gathered the following data for a company

	2009	2010	2011
Return on equity	19,8%	20,0%	22,0%
Return on total assets	8,1%	8,0%	7,9%
Total asset turnover	2,0	2,0	2,1

Based only on the information above, the most appropriate conclusion is that, over the period 2009 to 2011, the company's _____

- 1 net profit margin and financial leverage have decreased
 - 2 net profit margin and financial leverage have increased
 - 3 net profit margin has decreased, but its financial leverage has increased
 - 4 net profit margin has increased, but its financial leverage has decreased
- 10 If a company's net profit margin is -5% , its total asset turnover is 1,5 times and its financial leverage ratio is 1,2 times, its return on equity is closest to _____
- 1 $-3,2\%$
 - 2 $-5,0\%$
 - 3 $-7,5\%$
 - 4 $-9,0\%$
- 11 The amount that an investor will have in 15 years' time if R20 000 is invested today at an annual interest rate of 7%, is nearest to _____
- 1 R21 000
 - 2 R21 400
 - 3 R55 180
 - 4 R58 520
- 12 How much should be invested today, at 8% interest, to accumulate enough to pay off a R100 000 debt due in seven years from today? The amount that must be invested is closest to _____
- 1 R 58 350
 - 2 R 61 230
 - 3 R 63 450
 - 4 R171 382
- 13 Grace is saving to buy a car and plans to set aside R4 500 monthly for a car over the next two years. If she makes the payments at the beginning of each month and earns a rate of 8% per annum on her investment, how much money will Grace have in two years?
- 1 R 5 248,80
 - 2 R 10 108,80
 - 3 R116 699,35
 - 4 R117 477,35

[TURN OVER]

- 14 Find the present value of the following stream of cash flows by assuming that the company has an opportunity cost of 9%

Years	Amount
1–5	R15 000 per year
6–10	R25 000 per year

- 1 R 16 896
2 R 25 997
3 R120 850
4 R121 555
- 15 If R50 000 was invested in a fund offering a rate of return of 12% per year, approximately how many years would it take for the investment to double?
- 1 Four years
2 Five years
3 Six years
4 Seven years
- 16 If the annual interest rate is 6%, compounded quarterly, the future value of R15 000 invested for 5 years is closest to_____
- 1 R11 209
2 R11 137
3 R20 073
4 R20 203
- 17 An investor will receive an annuity of R40 000 per year for ten years. The first payment is to be received five years from today. At a 9% discount rate, the current value of this annuity is closest to_____
- 1 R166 840
2 R181 860
3 R256 710
4 R258 601
- 18 What is the effective annual rate for a credit card that charges 18%, compounded monthly?
- 1 15,38%
2 18,81%
3 19,56%
4 20,26%

[TURN OVER]

- 19 Brilliant, a recent university finance graduate, is looking to buy a house valued at R1,5 million. He has applied for a mortgage loan from his bank and has been requested to pay 20% as deposit, the balance will be financed at 9% over 30 years. What would his monthly mortgage repayment be?
- 1 R 7 993
 - 2 R 8 952
 - 3 R 9 656
 - 4 R10 234
- 20 Rita borrows R45 000 from the bank at an interest rate of 9%, compounded annually and to be repaid in three equal annual instalments. The interest paid in the third year is closest to _____.
- 1 R 4 050,00
 - 2 R 3 520,00
 - 3 R 2 795,00
 - 4 R 1 470,00
- 21 At the beginning of the year, Konrad bought 100 **MTX Corporation** ordinary shares for R53 per share. During the year he received dividends of R1,45 per share. The share is currently selling at R60 per share. What rate of return did Konrad make over the year?
- 1 11,7%
 - 2 13,2%
 - 3 14,1%
 - 4 15,9%

The following information relates to questions 22 to 24

Fly com Airlines' share price exhibits the following distribution of returns

Possible outcomes	Probability	Returns (%)
Pessimistic	0,25	5
Most likely	0,55	10
Optimistic	0,20	13

- 22 What is the expected return $\{E(R_i)\}$ of Fly com Airlines shares?
- 1 9,30%
 - 2 9,35%
 - 3 9,40%
 - 4 10,00%

[TURN OVER]

- 23 What is the standard deviation (σ) of returns of Fly com Airlines shares?
- 1 2,76%
 - 2 4,68%
 - 3 8,00%
 - 4 9,50%
- 24 What is the coefficient of variation (CV) of Fly com Airlines shares?
- 1 0,295
 - 2 1,250
 - 3 2,000
 - 4 2,150
- 25 A fund manager has recommended a R100 000 portfolio containing assets A, B and F. R20 000 will be invested in asset A with a beta of 1,5, R50 000 will be invested in asset B with a beta of 2,0, and R30 000 will be invested in asset F with a beta of 0,5. What would the resultant portfolio beta be?
- 1 1,25
 - 2 1,33
 - 3 1,45
 - 4 1,50
- 26 What is the expected return of a **Mzansi Limited** ordinary share if it has a beta of 1,50, the expected market return is 15% and the risk-free rate is 5%?
- 1 5,0%
 - 2 7,5%
 - 3 15,0%
 - 4 22,5%
- 27 An analyst projects that a share will pay a R2 dividend next year and that it will sell for R40 at year end. If the required rate of return is 15%, what is the value of the share?
- 1 R33, 54
 - 2 R36,52
 - 3 R42,00
 - 4 R43,95
- 28 A preference share of **MTG Limited** is selling for R65. It pays a dividend of R4,50 in perpetuity. The rate of return it is offering to its investors is closest to_____
- 1 4,5%
 - 2 6,9%
 - 3 14,4%
 - 4 14,8%

[TURN OVER]

- 29 What is the intrinsic value of a share in a company if next year's expected dividend is projected to be 5% greater than today's R1 dividend? The sustainable growth rate is 5% and the investor's required rate of return for this share is 10%
- 1 R20,00
 - 2 R21,00
 - 3 R22,00
 - 4 R23,00
- 30 Which of the following valuation models is used to value preference shares?
- 1 Constant growth model
 - 2 Variable growth model
 - 3 Zero growth model
 - 4 Gordon's model
- 31 A **Turnbull Chemicals** share has a beta of 1,3. The treasury bill rate is 6%, and the market return is an annual rate of 12%. A constant dividend of R5,20 per share is expected to be generated. However, a toxic spill results in a lawsuit and potential fines, and the beta of a **Turnbull Chemicals** share jumps to 1,6. What will the equilibrium price of a **Turnbull Chemical's** share be after the spill?
- 1 R32,50
 - 2 R33,33
 - 3 R37,68
 - 4 R43,37
- 32 What would rational investors do if the expected return is above the required return of an asset?
- 1 Buy the asset, which will drive the price up and cause the expected return to reach the level of the required return
 - 2 Sell the asset, which will drive the price down and cause the expected return to reach the level of the required return
 - 3 Sell the asset, which will drive the price up and cause the expected return to reach the level of the required return
 - 4 Sell the asset, since the price is expected to decrease below the level of the required return
- 33 Which of the following yield curves reflects higher expected future rates of interest?
- 1 An upward-sloping yield curve
 - 2 A flat yield curve
 - 3 A downward-sloping yield curve
 - 4 A linear yield curve

[TURN OVER]

- 34 Peter Jones, a management trainee at a large Johannesburg-based bank, is trying to estimate the real rate of return expected by investors. He notes that the three-month Treasury bill currently yields 3% and decides to use the Consumer Price Index (CPI) as a proxy for expected inflation. What is the estimated real rate of interest if the CPI is currently 2%?
- 1 1%
 - 2 2%
 - 3 3%
 - 4 5%
- 35 Calculate the value of a R1 000 bond which has 10 years until maturity and pays quarterly interest at an annual coupon rate of 12%. The required return on similar-risk bonds is 20%.
- 1 R656,77
 - 2 R835,45
 - 3 R845,66
 - 4 R2 201,08
- 36 What is the approximate yield to maturity for a R1 000 par value bond, selling for R1 120, which matures in six years and pays 12% interest annually?
- 1 8,5%
 - 2 9,4%
 - 3 12,0%
 - 4 13,2%
- 37 Kudzai is trying to decide which of two bonds to buy. Bond H is a 10% coupon, 10-year maturity, R1 000 par value, January 1, 2010 issue paying annual interest. Bond F is a 10% coupon, 10-year maturity, R1 000 par value, January 1, 2010 issue paying semi-annual interest. The required market return for each bond is 10%. When using present value to determine the prices of the bonds, Kudzai will find that _____.
- 1 there is no difference in price
 - 2 the price of F is greater than the price of H
 - 3 the price of H is greater than the price of F
 - 4 the prices cannot be determined
- 38 If the required rate of return is less than the coupon rate, a bond will sell at _____.
- 1 par value
 - 2 a discount
 - 3 a premium
 - 4 book value

[TURN OVER]

- 39 **Asef Corporation** has two bonds issued that are the same, except for their maturity date. Bond D matures in four years, while Bond E matures in seven years. If the required return changes by 15%, _____
- 1 bond D will have a greater change in price
 - 2 bond E will have a greater change in price
 - 3 the price of the bonds will be constant
 - 4 the price change for the bonds will be equal
- 40 **ABC Corporation** has arranged for a 120-day loan at an annual interest rate of 10%. If the loan amount is R1 000 000, how much interest in Rand terms will **ABC Corporation** pay? (Assume a 360-day year)
- 1 R13 333
 - 2 R33 333
 - 3 R66 666
 - 4 R100 000

SECTION B

LONG QUESTIONS

QUESTION 1

[15 MARKS]

1.1 State the **Efficient Market Hypothesis (EMH)** propositions and briefly outline their implications to investors (6 marks)

(a) *weak*

(b) *semi-strong*

(c) *strong*

[TURN OVER]

(c) Would Pitco Corporation be a good investment at this time? Explain your answer

(2 marks)

QUESTION 2

[15 MARKS]

2.1 Refer to the table presented below, and answer the questions that follow. You must show all your workings

Bond	Par value	Annual coupon interest rate (%)	Years to maturity	Required rate of return (%)
X	R10 000	11	5	6
Y	R 2 400	14	8	14
Z	R 1 200	18	17	15

REQUIRED

(a) Determine the present value of bond X

(2 marks)

[TURN OVER]

(b) Determine the present value of bond Y

(2 marks)

(c) Determine the present value of bond Z

(2 marks)

(d) What will happen to the value/price as the bond approaches maturity?

(1 mark)

[TURN OVER]

Appendix A: Interest tables

Table 1 Future-value interest factors for R1 compounded at k% for n periods

$$FVIF_{k,n} = (1 + k)^n$$

Period	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	20%	25%	30%	35%
1	1 010	1 020	1 030	1 040	1 050	1 060	1 070	1 080	1 090	1 100	1 110	1 120	1 130	1 140	1 150	1 160	1 200	1 250	1 300	1 350
2	1 020	1 040	1 061	1 082	1 103	1 124	1 145	1 166	1 188	1 210	1 232	1 254	1 277	1 300	1 323	1 346	1 440	1 563	1 690	1 823
3	1 030	1 061	1 093	1 125	1 158	1 191	1 225	1 260	1 295	1 331	1 368	1 405	1 443	1 482	1 521	1 561	1 728	1 953	2 197	2 460
4	1 041	1 082	1 126	1 170	1 216	1 262	1 311	1 360	1 412	1 464	1 518	1 574	1 630	1 689	1 749	1 811	2 074	2 441	2 856	3 322
5	1 051	1 104	1 159	1 217	1 276	1 338	1 403	1 469	1 539	1 611	1 685	1 762	1 842	1 925	2 011	2 100	2 488	3 052	3 713	4 484
6	1 062	1 126	1 194	1 265	1 340	1 419	1 501	1 587	1 677	1 772	1 870	1 974	2 082	2 195	2 313	2 436	2 986	3 815	4 827	6 053
7	1 072	1 149	1 230	1 316	1 407	1 504	1 606	1 714	1 828	1 949	2 076	2 211	2 353	2 502	2 660	2 826	3 583	4 768	6 275	8 172
8	1 083	1 172	1 267	1 369	1 477	1 594	1 718	1 851	1 993	2 144	2 305	2 476	2 658	2 853	3 059	3 278	4 300	5 960	8 157	11 03
9	1 094	1 195	1 305	1 423	1 551	1 689	1 838	1 999	2 172	2 358	2 558	2 773	3 004	3 252	3 518	3 803	5 160	7 451	10 60	14 89
10	1 105	1 219	1 344	1 480	1 629	1 791	1 967	2 159	2 367	2 594	2 839	3 106	3 395	3 707	4 046	4 411	6 192	9 313	13 79	20 11
11	1 116	1 243	1 384	1 539	1 710	1 898	2 105	2 332	2 580	2 853	3 152	3 479	3 836	4 226	4 652	5 117	7 430	11 64	17 92	27 14
12	1 127	1 268	1 426	1 601	1 796	2 012	2 252	2 518	2 813	3 138	3 498	3 896	4 335	4 818	5 350	5 936	8 916	14 55	23 30	36 64
13	1 138	1 294	1 469	1 665	1 866	2 133	2 410	2 720	3 066	3 452	3 883	4 363	4 898	5 492	6 153	6 886	10 70	18 19	30 29	49 47
14	1 149	1 319	1 513	1 732	1 980	2 261	2 579	2 937	3 342	3 797	4 310	4 887	5 535	6 261	7 076	7 988	12 84	22 74	39 37	66 78
15	1 161	1 346	1 558	1 801	2 079	2 397	2 759	3 172	3 642	4 177	4 785	5 474	6 254	7 138	8 137	9 266	15 41	28 42	51 19	90 16
16	1 173	1 373	1 605	1 873	2 183	2 540	2 952	3 426	3 970	4 595	5 311	6 130	7 067	8 137	9 358	10 75	18 49	35 53	66 54	121 7
17	1 184	1 400	1 653	1 948	2 292	2 693	3 159	3 700	4 328	5 054	5 895	6 866	7 986	9 276	10 76	12 47	22 19	44 41	86 50	164 3
18	1 196	1 428	1 702	2 026	2 407	2 854	3 380	3 996	4 717	5 560	6 544	7 690	9 024	10 58	12 38	14 46	26 62	55 51	112 5	221 8
19	1 208	1 457	1 754	2 107	2 527	3 026	3 617	4 316	5 142	6 116	7 263	8 613	10 20	12 06	14 23	16 78	31 95	69 39	146 2	299 5
20	1 220	1 486	1 806	2 191	2 653	3 207	3 870	4 661	5 604	6 727	8 062	9 646	11 52	13 74	16 37	19 46	38 34	86 74	190 0	404 3
21	1 232	1 516	1 860	2 279	2 786	3 400	4 141	5 034	6 109	7 400	8 949	10 80	13 02	15 67	18 82	22 57	46 01	108 4	247 1	545 8
22	1 245	1 546	1 916	2 370	2 925	3 604	4 430	5 437	6 659	8 140	9 934	12 10	14 71	17 86	21 64	26 19	55 21	135 5	321 2	736 8
23	1 257	1 577	1 974	2 465	3 072	3 820	4 741	5 871	7 258	8 954	11 03	13 55	16 63	20 36	24 89	30 38	66 25	169 4	417 5	994 7
24	1 270	1 608	2 033	2 563	3 225	4 049	5 072	6 341	7 911	9 850	12 24	15 18	18 79	23 21	28 63	35 24	79 50	211 8	542 8	1343
25	1 282	1 641	2 094	2 666	3 386	4 292	5 427	6 848	8 623	10 83	13 59	17 00	21 23	26 46	32 92	40 87	95 40	264 7	705 6	1813
30	1 348	1 811	2 427	3 243	4 322	5 743	7 612	10 06	13 27	17 45	22 89	29 96	39 12	50 95	66 21	85 85	237 4	807 8	2620	8129
35	1 417	2 000	2 814	3 946	5 516	7 686	10 68	14 79	20 41	28 10	38 57	52 80	72 07	98 10	133 2	180 3	590 7	2465	9728	36449
40	1 489	2 208	3 262	4 801	7 040	10 29	14 97	21 72	31 41	45 26	65 00	93 05	132 8	188 9	267 9	378 7	1470	7523	36119	*
45	1 565	2 438	3 782	5 841	8 985	13 76	21 00	31 92	48 33	72 89	109 5	164 0	244 6	363 7	538 8	795 4	3657	22959	*	*
50	1 645	2 692	4 384	7 107	11 47	18 42	29 46	46 90	74 36	117 4	184 6	289 0	450 7	700 2	1084	1671	9100	70065	*	*

* 1.000 > 99999

[TURN OVER]

Table 2 Future-value interest factors for a R1 annuity compounded at k% for n periods

$$FVIFA_{k,n} = \sum_{t=1}^n (1+k)^t$$

Period	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	20%	25%	30%	35%
1	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000
2	2 010	2 020	2 030	2 040	2 050	2 060	2 070	2 080	2 090	2 100	2 110	2 120	2 130	2 140	2 150	2 160	2 200	2 250	2 300	2 350
3	3 030	3 060	3 091	3 122	3 153	3 184	3 215	3 246	3 278	3 310	3 342	3 374	3 407	3 440	3 473	3 506	3 640	3 813	3 990	4 173
4	4 060	4 122	4 184	4 246	4 310	4 375	4 440	4 506	4 573	4 641	4 710	4 779	4 850	4 921	4 993	5 066	5 368	5 766	6 187	6 633
5	5 101	5 204	5 309	5 416	5 526	5 637	5 751	5 867	5 985	6 105	6 228	6 353	6 480	6 610	6 742	6 877	7 442	8 207	9 043	9 954
6	6 152	6 308	6 468	6 633	6 802	6 975	7 153	7 336	7 523	7 716	7 913	8 115	8 323	8 536	8 754	8 977	9 930	11 259	12 756	14 438
7	7 214	7 434	7 662	7 898	8 142	8 394	8 654	8 923	9 200	9 487	9 783	10 089	10 405	10 730	11 067	11 414	12 916	15 073	17 583	20 492
8	8 286	8 583	8 892	9 214	9 549	9 897	10 26	10 64	11 03	11 44	11 86	12 30	12 76	13 23	13 73	14 24	16 50	19 84	23 86	28 66
9	9 369	9 755	10 16	10 58	11 03	11 49	11 98	12 49	13 02	13 58	14 16	14 78	15 42	16 09	16 79	17 52	20 80	25 80	32 01	39 70
10	10 46	10 95	11 46	12 01	12 58	13 18	13 82	14 49	15 19	15 94	16 72	17 55	18 42	19 34	20 30	21 32	25 96	33 25	42 62	54 59
11	11 57	12 17	12 81	13 49	14 21	14 97	15 78	16 65	17 56	18 53	19 56	20 65	21 81	23 04	24 35	25 73	32 15	42 57	56 41	74 70
12	12 68	13 41	14 19	15 03	15 92	16 87	17 89	18 98	20 14	21 38	22 71	24 13	25 65	27 27	29 00	30 85	39 58	54 21	74 33	101 8
13	13 81	14 68	15 62	16 63	17 71	18 88	20 14	21 50	22 95	24 52	26 21	28 03	29 98	32 09	34 35	36 79	48 50	68 76	97 63	138 5
14	14 95	15 97	17 09	18 29	19 60	21 02	22 55	24 21	26 02	27 97	30 09	32 39	34 88	37 58	40 50	43 67	59 20	86 95	127 9	188 0
15	16 10	17 29	18 60	20 02	21 58	23 28	25 13	27 15	29 36	31 77	34 41	37 28	40 42	43 84	47 58	51 66	72 04	109 7	167 3	254 7
16	17 26	18 64	20 16	21 82	23 66	25 67	27 89	30 32	33 00	35 95	39 19	42 75	46 67	50 98	55 72	60 93	87 44	138 1	218 5	344 9
17	18 43	20 01	21 76	23 70	25 84	28 21	30 84	33 75	36 97	40 54	44 50	48 88	53 74	59 12	65 08	71 67	105 9	173 6	285 0	466 6
18	19 61	21 41	23 41	25 65	28 13	30 91	34 00	37 45	41 30	45 60	50 40	55 75	61 73	68 39	75 84	84 14	128 1	218 0	371 5	630 9
19	20 81	22 84	25 12	27 67	30 54	33 76	37 38	41 45	46 02	51 16	56 94	63 44	70 75	78 97	88 21	98 60	154 7	273 6	484 0	852 7
20	22 02	24 30	26 87	29 78	33 07	36 79	41 00	45 76	51 16	57 27	64 20	72 05	80 95	91 02	102 4	115 4	186 7	342 9	630 2	1152
21	23 24	25 78	28 68	31 97	35 72	39 99	44 87	50 42	56 76	64 00	72 27	81 70	92 47	104 8	118 8	134 8	225 0	429 7	820 2	1556
22	24 47	27 30	30 54	34 25	38 51	43 39	49 01	55 46	62 87	71 40	81 21	92 50	105 5	120 4	137 6	157 4	271 0	538 1	1067	2102
23	25 72	28 84	32 45	36 62	41 43	47 00	53 44	60 89	69 53	79 54	91 15	104 6	120 2	138 3	159 3	183 6	326 2	673 6	1388	2839
24	26 97	30 42	34 43	39 08	44 50	50 82	58 18	66 76	76 79	88 50	102 2	118 2	136 8	158 7	184 2	214 0	392 5	843 0	1806	3834
25	28 24	32 03	36 46	41 65	47 73	54 86	63 25	73 11	84 70	98 35	114 4	133 3	155 6	181 9	212 8	249 2	472 0	1055	2349	5177
30	34 78	40 57	47 58	56 08	66 44	79 06	94 46	113 3	136 3	164 5	199 0	241 3	293 2	356 8	434 7	530 3	1182	3227	8730	23222
35	41 66	49 99	60 46	73 65	90 32	111 4	138 2	172 3	215 7	271 0	341 6	431 7	546 7	693 6	881 2	1121	2948	9857	32423	*
40	48 89	60 40	75 40	95 03	120 8	154 8	199 6	259 1	337 9	442 6	581 8	767 1	1014	1342	1779	2361	7344	30089	*	*
45	56 48	71 89	92 72	121 0	159 7	212 7	285 7	386 5	525 9	718 9	986 6	1358	1874	2591	3585	4965	18281	91831	*	*
50	64 46	84 58	112 8	152 7	209 3	290 3	406 5	573 8	815 1	1164	1669	2400	3460	4995	7218	10436	45497	*	*	*

* 1 VII A > 9999

Table 3 Present-value interest factors for R1 discounted at k% for n periods

$$PVIF_{kn} = \frac{1}{(1+k)^n}$$

Period	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	20%	25%	30%	35%
1	0.990	0.980	0.971	0.962	0.952	0.943	0.935	0.926	0.917	0.909	0.901	0.893	0.885	0.877	0.870	0.862	0.833	0.800	0.769	0.741
2	0.980	0.961	0.943	0.925	0.907	0.890	0.873	0.857	0.842	0.826	0.812	0.797	0.783	0.769	0.756	0.743	0.694	0.640	0.592	0.549
3	0.971	0.942	0.915	0.889	0.864	0.840	0.816	0.794	0.772	0.751	0.731	0.712	0.693	0.675	0.658	0.641	0.579	0.512	0.455	0.406
4	0.961	0.924	0.888	0.855	0.823	0.792	0.763	0.735	0.708	0.683	0.659	0.636	0.613	0.592	0.572	0.552	0.482	0.410	0.350	0.301
5	0.951	0.906	0.863	0.822	0.784	0.747	0.713	0.681	0.650	0.621	0.593	0.567	0.543	0.519	0.497	0.476	0.402	0.328	0.269	0.223
6	0.942	0.888	0.837	0.790	0.746	0.705	0.666	0.630	0.596	0.564	0.535	0.507	0.480	0.456	0.432	0.410	0.335	0.262	0.207	0.165
7	0.933	0.871	0.813	0.760	0.711	0.665	0.623	0.583	0.547	0.513	0.482	0.452	0.425	0.400	0.376	0.354	0.279	0.210	0.159	0.122
8	0.923	0.853	0.789	0.731	0.677	0.627	0.582	0.540	0.502	0.467	0.434	0.404	0.376	0.351	0.327	0.305	0.233	0.168	0.123	0.091
9	0.914	0.837	0.766	0.703	0.645	0.592	0.544	0.500	0.460	0.424	0.391	0.361	0.333	0.308	0.284	0.263	0.194	0.134	0.094	0.067
10	0.905	0.820	0.744	0.676	0.614	0.558	0.508	0.463	0.422	0.386	0.352	0.322	0.295	0.270	0.247	0.227	0.162	0.107	0.073	0.050
11	0.896	0.804	0.722	0.650	0.585	0.527	0.475	0.429	0.388	0.350	0.317	0.287	0.261	0.237	0.215	0.195	0.135	0.086	0.056	0.037
12	0.887	0.788	0.701	0.625	0.557	0.497	0.444	0.397	0.356	0.319	0.286	0.257	0.231	0.208	0.187	0.168	0.112	0.069	0.043	0.027
13	0.879	0.773	0.681	0.601	0.530	0.469	0.415	0.368	0.326	0.290	0.258	0.229	0.204	0.182	0.163	0.145	0.093	0.055	0.033	0.020
14	0.870	0.758	0.661	0.577	0.505	0.442	0.388	0.340	0.299	0.263	0.232	0.205	0.181	0.160	0.141	0.125	0.078	0.044	0.025	0.015
15	0.861	0.743	0.642	0.555	0.481	0.417	0.362	0.315	0.275	0.239	0.209	0.183	0.160	0.140	0.123	0.108	0.065	0.035	0.020	0.011
16	0.853	0.728	0.623	0.534	0.458	0.394	0.339	0.292	0.252	0.218	0.188	0.163	0.141	0.123	0.107	0.093	0.054	0.028	0.015	0.008
17	0.844	0.714	0.605	0.513	0.436	0.371	0.317	0.270	0.231	0.198	0.170	0.146	0.125	0.108	0.093	0.080	0.045	0.023	0.012	0.006
18	0.836	0.700	0.587	0.494	0.416	0.350	0.296	0.250	0.212	0.180	0.153	0.130	0.111	0.095	0.081	0.069	0.038	0.018	0.009	0.005
19	0.828	0.686	0.570	0.475	0.396	0.331	0.277	0.232	0.194	0.164	0.138	0.116	0.098	0.083	0.070	0.060	0.031	0.014	0.007	0.003
20	0.820	0.673	0.554	0.456	0.377	0.312	0.258	0.215	0.178	0.149	0.124	0.104	0.087	0.073	0.061	0.051	0.026	0.012	0.005	0.002
21	0.811	0.660	0.538	0.439	0.359	0.294	0.242	0.199	0.164	0.135	0.112	0.093	0.077	0.064	0.053	0.044	0.022	0.009	0.004	0.002
22	0.803	0.647	0.522	0.422	0.342	0.278	0.226	0.184	0.150	0.123	0.101	0.083	0.068	0.056	0.046	0.038	0.018	0.007	0.003	0.001
23	0.795	0.634	0.507	0.406	0.326	0.262	0.211	0.170	0.138	0.112	0.091	0.074	0.060	0.049	0.040	0.033	0.015	0.006	0.002	0.001
24	0.788	0.622	0.492	0.390	0.310	0.247	0.197	0.158	0.126	0.102	0.082	0.066	0.053	0.043	0.035	0.028	0.013	0.005	0.002	0.001
25	0.780	0.610	0.478	0.375	0.295	0.233	0.184	0.146	0.116	0.092	0.074	0.059	0.047	0.038	0.030	0.024	0.010	0.004	0.001	0.001
30	0.742	0.552	0.412	0.308	0.231	0.174	0.131	0.099	0.075	0.057	0.044	0.033	0.026	0.020	0.015	0.012	0.004	0.001	*	*
35	0.706	0.500	0.355	0.253	0.181	0.130	0.094	0.068	0.049	0.036	0.026	0.019	0.014	0.010	0.008	0.006	0.002	*	*	*
40	0.672	0.453	0.307	0.208	0.142	0.097	0.067	0.046	0.032	0.022	0.015	0.011	0.008	0.005	0.004	0.003	0.001	*	*	*
45	0.639	0.410	0.264	0.171	0.111	0.073	0.048	0.031	0.021	0.014	0.009	0.006	0.004	0.003	0.002	0.001	0.000	*	*	*
50	0.608	0.372	0.228	0.141	0.087	0.054	0.034	0.021	0.013	0.009	0.005	0.003	0.002	0.001	0.001	0.001	*	*	*	*

* PVIF = 0.00 when rounded off to three decimal place

[TURN OVER]

Table 4 Present-value interest factors for a R1 annuity discounted at k% for n periods

$$PVIFA_{k,n} = \sum_{t=1}^n \frac{1}{(1+k)^t}$$

Period	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	20%	25%	30%	35%
1	0.990	0.980	0.971	0.962	0.952	0.943	0.935	0.926	0.917	0.909	0.901	0.893	0.885	0.877	0.870	0.862	0.833	0.800	0.769	0.741
2	1.970	1.942	1.913	1.886	1.859	1.833	1.808	1.783	1.759	1.736	1.713	1.690	1.668	1.647	1.626	1.605	1.528	1.440	1.361	1.289
3	2.941	2.884	2.829	2.775	2.723	2.673	2.624	2.577	2.531	2.487	2.444	2.402	2.361	2.322	2.283	2.246	2.106	1.952	1.816	1.696
4	3.902	3.808	3.717	3.630	3.546	3.465	3.387	3.312	3.240	3.170	3.102	3.037	2.974	2.914	2.855	2.798	2.589	2.362	2.166	1.997
5	4.853	4.713	4.580	4.452	4.329	4.212	4.100	3.993	3.890	3.791	3.696	3.605	3.517	3.433	3.352	3.274	2.991	2.689	2.436	2.220
6	5.795	5.601	5.417	5.242	5.076	4.917	4.767	4.623	4.486	4.355	4.231	4.111	3.998	3.889	3.784	3.685	3.326	2.951	2.643	2.385
7	6.728	6.472	6.230	6.002	5.786	5.582	5.389	5.206	5.033	4.868	4.712	4.564	4.423	4.288	4.160	4.039	3.605	3.161	2.802	2.508
8	7.652	7.325	7.020	6.733	6.463	6.210	5.971	5.747	5.535	5.335	5.146	4.968	4.799	4.639	4.487	4.344	3.837	3.329	2.925	2.598
9	8.566	8.162	7.786	7.435	7.108	6.802	6.515	6.247	5.995	5.759	5.537	5.328	5.132	4.946	4.772	4.607	4.031	3.463	3.019	2.665
10	9.471	8.983	8.530	8.111	7.722	7.360	7.024	6.710	6.418	6.145	5.889	5.650	5.426	5.216	5.019	4.833	4.192	3.571	3.092	2.715
11	10.37	9.787	9.253	8.760	8.306	7.887	7.499	7.139	6.805	6.495	6.207	5.938	5.687	5.453	5.234	5.029	4.327	3.656	3.147	2.752
12	11.26	10.58	9.954	9.385	8.863	8.384	7.943	7.536	7.161	6.814	6.492	6.194	5.918	5.660	5.421	5.197	4.439	3.725	3.190	2.779
13	12.13	11.35	10.63	9.986	9.394	8.853	8.358	7.904	7.487	7.103	6.750	6.424	6.122	5.842	5.583	5.342	4.533	3.780	3.223	2.799
14	13.00	12.11	11.30	10.56	9.899	9.295	8.745	8.244	7.786	7.367	6.982	6.628	6.302	6.002	5.724	5.468	4.611	3.824	3.249	2.814
15	13.87	12.85	11.94	11.12	10.38	9.712	9.108	8.559	8.061	7.606	7.191	6.811	6.462	6.142	5.847	5.575	4.675	3.859	3.268	2.825
16	14.72	13.58	12.56	11.65	10.84	10.11	9.447	8.851	8.313	7.824	7.379	6.974	6.604	6.265	5.954	5.668	4.730	3.887	3.283	2.834
17	15.56	14.29	13.17	12.17	11.27	10.48	9.763	9.122	8.544	8.022	7.549	7.120	6.729	6.373	6.047	5.749	4.775	3.910	3.295	2.840
18	16.40	14.99	13.75	12.66	11.69	10.83	10.06	9.372	8.756	8.201	7.702	7.250	6.840	6.467	6.128	5.818	4.812	3.928	3.304	2.844
19	17.23	15.68	14.32	13.13	12.09	11.16	10.34	9.604	8.950	8.365	7.839	7.366	6.938	6.550	6.198	5.877	4.843	3.942	3.311	2.848
20	18.05	16.35	14.88	13.59	12.46	11.47	10.59	9.818	9.129	8.514	7.963	7.469	7.025	6.623	6.259	5.929	4.870	3.954	3.316	2.850
21	18.86	17.01	15.42	14.03	12.82	11.76	10.84	10.02	9.292	8.649	8.075	7.562	7.102	6.687	6.312	5.973	4.891	3.963	3.320	2.852
22	19.66	17.66	15.94	14.45	13.16	12.04	11.06	10.20	9.442	8.772	8.176	7.645	7.170	6.743	6.359	6.011	4.909	3.970	3.323	2.853
23	20.46	18.29	16.44	14.86	13.49	12.30	11.27	10.37	9.580	8.883	8.266	7.718	7.230	6.792	6.399	6.044	4.925	3.976	3.325	2.854
24	21.24	18.91	16.94	15.25	13.80	12.55	11.47	10.53	9.707	8.985	8.348	7.784	7.283	6.835	6.434	6.073	4.937	3.981	3.327	2.855
25	22.02	19.52	17.41	15.62	14.09	12.78	11.65	10.67	9.823	9.077	8.422	7.843	7.330	6.873	6.464	6.097	4.948	3.985	3.329	2.856
30	25.81	22.40	19.60	17.29	15.37	13.76	12.41	11.26	10.27	9.427	8.694	8.055	7.496	7.003	6.566	6.177	4.979	3.995	3.332	2.857
35	29.41	25.00	21.49	18.66	16.37	14.50	12.95	11.65	10.57	9.644	8.855	8.176	7.586	7.070	6.617	6.215	4.992	3.998	3.333	2.857
40	32.83	27.36	23.11	19.79	17.16	15.05	13.33	11.92	10.76	9.779	8.951	8.244	7.634	7.105	6.642	6.233	4.997	3.999	3.333	2.857
45	36.09	29.49	24.52	20.72	17.77	15.46	13.61	12.11	10.88	9.863	9.008	8.283	7.661	7.123	6.654	6.242	4.999	4.000	3.333	2.857
50	39.20	31.42	25.73	21.48	18.26	15.76	13.80	12.23	10.96	9.915	9.042	8.304	7.675	7.133	6.661	6.246	4.999	4.000	3.333	2.857

PART 1 (GENERAL/ALGEMEEN) DEEL 1

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

1

PAPER NUMBER
 VRAESTELNOMMER

2

STUDENT NUMBER
 STUDENTENOMMER

6

7

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

8

9

For use by examination invigilator
 Vir gebruik deur eksamenopsiener

IMPORTANT

- USE ONLY AN HB PENCIL TO COMPLETE THIS SHEET
- MARK LIKE THIS
- CHECK THAT YOUR INITIALS AND SURNAME HAS BEEN FILLED IN CORRECTLY
- ENTER YOUR STUDENT NUMBER FROM LEFT TO RIGHT
- CHECK THAT YOUR STUDENT NUMBER HAS BEEN FILLED IN CORRECTLY
- CHECK THAT THE UNIQUE NUMBER HAS BEEN FILLED IN CORRECTLY
- CHECK THAT ONLY ONE ANSWER PER QUESTION HAS BEEN MARKED
- DO NOT FOLD

BELANGRIK

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

PART 2 (ANSWERS/ANTWOORDE) DEEL 2

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)	118	c1) c2) c3) c4) c5)
14	c1) c2) c3) c4) c5)	49	c1) c2) c3) c4) c5)	84	c1) c2) c3) c4) c5)	119	c1) c2) c3) c4) c5)
15	c1) c2) c3) c4) c5)	50	c1) c2) c3) c4) c5)	85	c1) c2) c3) c4) c5)	120	c1) c2) c3) c4) c5)
16	c1) c2) c3) c4) c5)	51	c1) c2) c3) c4) c5)	86	c1) c2) c3) c4) c5)	121	c1) c2) c3) c4) c5)
17	c1) c2) c3) c4) c5)	52	c1) c2) c3) c4) c5)	87	c1) c2) c3) c4) c5)	122	c1) c2) c3) c4) c5)
18	c1) c2) c3) c4) c5)	53	c1) c2) c3) c4) c5)	88	c1) c2) c3) c4) c5)	123	c1) c2) c3) c4) c5)
19	c1) c2) c3) c4) c5)	54	c1) c2) c3) c4) c5)	89	c1) c2) c3) c4) c5)	124	c1) c2) c3) c4) c5)
20	c1) c2) c3) c4) c5)	55	c1) c2) c3) c4) 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) c4) c5)	57	c1) c2) c3) c4) c5)	92	c1) c2) c3) c4) c5)	127	c1) c2) c3) c4) c5)
23	c1) c2) c3) c4) c5)	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)

Specimen only