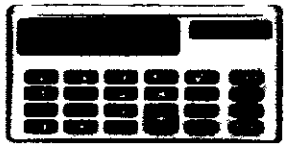
UNIVERSITY EXAMINATIONS



UNIVERSITEITSEKSAMENS

UNISA university of south africa

FIN3701 (479165)
RFI3701 (490290) October/November 2012

FINANCIAL MANAGEMENT

Duration 2 Hours 70 Marks

EXAMINERS

FIRST	MS MD PHANGO
SECOND	MR AB SIBINDI
EXTERNAL	PROF HP WOLMARANS

Use of a non-programmable pocket calculator is permissible

Closed book examination.

This paper consists of 23 pages, including pages for rough work (pp 21-23)

and interest tables (pp I-IV), plus instructions for completion of a mark reading sheet

INSTRUCTIONS:

SECTION A: Answer 40 multiple choice questions on the mark reading sheet.

SECTION B: Answer the two long questions using the space provided below the questions. No rough work will be marked.

SECTION A **[40 MARKS]**

WRITE THE UNIQUE NUMBER ON THE MARK READING SHEET PROVIDED.

Use the information provided below to answer Question 1 to 3.

Phala Manufacturers has an opportunity to replace a grinding machine that is five years old with a new one costing R10, 000 The new machine requires an installation cost of R2, 000 and a transport cost of R3, 000. The old machine was purchased for R8, 000, had an expected life of 10 years and was depreciated on a straight line method The old machine can be sold today at R5, 000

The new machine has a ten year life span and will be depreciated on a straight line method Using the new machine will increase the net working capital by R2, 000.
The company is subject to 40% tax rate.

1. Calculate the tax implication from the sale of the old machine and choose the correct option.

    1. -R1, 400 tax benefit
    2. -R560 tax benefit
    3. R400 tax liability
    4 R560 tax liability

2. Calculate the installed cost of the new machine and choose the correct option.

    1. R 7, 400
    2. R10, 000
    3. R12, 000
    4. R15, 000

3. Calculate the initial investment associated with the replacement of the existing machine and choose the correct option.

    1. R12, 000
    2. R12, 400
    3. R12, 560
    4 R12, 800

Use the information provided below to answer question 4 to 7.

Baradi Mining is evaluating two exploration projects (Gold and Platinum projects). The cost of capital for each project is 8%. The expected cash flows of the two projects are given below.

Year	Gold project	Platinum project
	R	R
0	(50,000)	(20,000)
1	(20,000)	(60,000)
2	(20,000)	(35,000)
3	(20,000)	(40,000)
4	8,000	(10,000)

4. Calculate the NPV of the Gold project and choose the correct option.

1. -R95, 662
2. -R62, 401
3. R62, 401
4. R95, 662

5. Calculate the NPV of the Platinum project and choose the correct option

1 -R144, 666
2. -R104, 666
3. R104, 666
4. R144, 666

6. Which project(s) would be regarded as acceptable if they were independent?

1. Both the projects should be accepted
2 Neither project should be accepted
3 Only the Platinum project should be accepted
4. Only the Gold project should be accepted

7. According to the NPV ranking approach, which project(s) should be accepted if they were mutually exclusive?

   1 Both projects should be accepted
   2. Neither project should be accepted
   3. Only the Platinum project should be accepted
   4. Only the Gold project should be accepted

8. City Removals Ltd is evaluating the purchase of a new trailer costing R9, 000 for expansion purposes. The trailer is expected to have a useful life of five years with a scrap value of zero at the end of the five years and revenues of R2, 200 per year City Removals uses the straight line depreciation method and is subject to a 30% tax rate.
   Calculate the net operating cash flow for year 1 to 5 and choose the correct option.

   1. R1, 060
   2. R1, 540
   3 R1, 800
   4. R2, 080

9 DK Stationery Ltd just purchased a photocopier which has a cost of R20, 000, a useful life of four years and an after-tax operating cash flow of R4, 000 including depreciation of R600. The cost of capital to the company is 9%. The internal rate of return (IRR) on a project with a similar cost is 12%
   Calculate the net present value (NPV) of the photocopier and choose the correct option

   1. -R7, 851
   2. -R7, 041
   3. -R6, 028
   4. -R5, 097

10. Risk in capital budgeting cash flows can be adjusted for by using the ..

   1 risk-adjusted discount rate
   2. required rate of return
   3. certainty equivalents
   4. the risk premium

11. Divine Consulting's expected earnings per share (EPS) are R6.60, which is an increase from R5.99 in the past year. The company's share price is currently at R50.00 and flotation costs are estimated at R10.00.
Calculate the cost of existing ordinary shares if the company pays all earnings as dividends and choose the correct option.

1. 22.16%
2. 23.38%
3. 24.32%
4. 24.72%

12. T & J Communications' ordinary share is currently trading at R30 00 per share. The share is expected to pay a dividend of R3.00 per share at the end of the year (D1), and the dividend is expected to grow at a constant rate of 5%.
Calculate the cost of an ordinary share and choose the correct option.

1. 9.57%
2. 10.01%
3. 15.00%
4. 15.50%

13. Duncan Industries' current EPS is R4.40 and it is expected to increase to R4.86 next year. The company pays 45% of its earnings as dividends and its ordinary shares sell at R42.00 per share
Calculate the company's cost of new shares if flotation costs are estimated at 10% and choose the correct option

1. 5 77%
2. 10.55%
3 11.30%
4. 12.58%

14. The cost of equity is also known as ...

1. The rate of return required by ordinary shareholders
2 The cost of ordinary shareholders' dividends
3. The cost of retained earnings
4. The expected market return

15. Tinangwe Ltd has a target capital structure of 30% debt and 70% equity. The yield to maturity on the company's outstanding bond is 8 00% and the company's tax rate is 30%. Tinangwe's financial manager calculated the company weighted average cost of capital (WACC) as 7.8%.
    What is the company's cost of equity capital?

    1. 5.40%
    2. 7.71%
    3. 7.80%
    4. 8.00%

16. Innovative Equities (Pty) Ltd raises capital by issuing 10,000 corporate bonds with a par value of R1000.00 The coupon rate of this bond is 8 00% per annum, its maturity date is 15 years and the yield to maturity on new long-term debt is 8.48%
    Calculate the after tax cost of long term debt if the tax rate is 29% and choose the correct option

    1 5 68%
    2. 6.02%
    3. 8.00%
    4. 8 78%

17. An Art Gallery has a capital structure with the following weights: debt; 25%, ordinary shares; 60%, and preference shares; 15%. The cost of debt is 7.64%, ordinary shares cost 12.00% and preference shares cost 10.53%.
    Calculate the WACC and choose the correct option

    1. 8.78%
    2. 9.00%
    3. 9.30%
    4. 10.69%

18 Botho Investments has a 7% coupon rate bond that matures in 20 years and is selling at R985 56. The par value of the bond is R1, 000 00 and interest is paid annually The company is subject to 30% tax rate.
What is the company's component cost of debt for calculating WACC?

1 4 90%
2. 5.00%
3 7.00%
4 7.14%

19 A company with an optimal capital structure of 25% debt and 75% equity has issued a 6 50% bond in order to raise additional capital The ordinary shareholder's required rate of return on equity is 7.00% The company's expected dividend is R3 10 and it has an ordinary share price of R46.40 per share.
Calculate the WACC of the company and choose the correct option

1. 6.88%
2. 7 07%
3 13 07%
4 13.67%

Use the information provided below to answer question 20 and 21.

Danie & Ackerman Ltd has retained earnings of R 1, 250, 000 which are insufficient to fund its capital projects The company seeks to raise additional funding through a R500, 000 bank loan. Capital structure weights for sources of funding are as follows:

Source of capital	Weight
Long-term debt	35%
Preference share	15%
Ordinary share	50%

20. Calculate the break point of the retained earnings and choose the correct option

1. R1, 250, 000
2. R1, 923, 077
3. R1, 928, 025
4 R2, 500, 000

21 Calculate the break point of long-term debt and choose the correct option.

1 R1, 000, 000
2 R1, 428, 571
3 R1, 923, 077
4. R1, 932, 077

Use the information provided below to answer question 22.

A company with an optimal capital structure of 33% long-term debt, 8% cost of long-term debt and 14% cost of equity is evaluating the following capital projects:

Investment opportunity (Capital project)	Internal rate of return	Initial investment
A	13 60%	R850, 000
B	8.99%	R720, 000
C	9.38%	R560, 000
D	9.00%	R800, 000

22. Which project should a company choose?

1 Project A
2. Project C
3. Project B
4 Project D

23. A company with R120, 000 fixed operating costs and variable operating costs of R102 per unit has just sold 2, 000 units at a sales price of R195 per unit
Determine the degree of financial leverage (DOL) of the company at the current sales level and choose the correct option.

    1. 1 65
    2. 2 82
    3. 2.95
    4. 2.98

24. Ginger Cola has earnings before interest and tax (EBIT) of R450, 000, an interest expense of R40, 000 and preference dividends of R6, 000 The company is subject to a 29% tax rate Calculate the degree of financial leverage (DFL) at the current EBIT level and choose the correct option.

    1 1 11
    2. 1.12
    3. 1.21
    4. 1.32

Use the information provided below to answer question 25 to 27.

A company has sales revenue of R125, 000, variable costs of R90, 000 and fixed costs of R15, 000 The company has WACC of 17.00%, interest expense of R5, 000 and it is subject to a 30% tax rate. The company has issued 9, 000 shares in order to raise new equity capital.

25. Calculate the expected earnings per share of the company and choose the correct option

    1. R1.17
    2. R1.19
    3. R1 27
    4 R1 50

26. Calculate the net operating profit after tax (NOPAT) of the company and choose the correct option.

    1 R 6, 000
    2. R 7, 350
    3. R14, 000
    4. R15, 000

27. Calculate the value of the company and choose the correct option.

    1. R61, 765
    2. R62, 352
    3. R74, 862
    4. R82, 352

Use the information provided below to answer question 28 and 29.

Omar Inc. has a total value of R380, 000 and needs to raise additional funds of R20, 000 at 15% interest rate. The company's optimal capital structure is at 40% debt and 60% equity. The company shares are currently trading at R30 per share.

28. Calculate the number of shares under the current company value of R380, 000 and choose the correct option.

    1. 5, 067 shares
    2. 7, 600 shares
    3. 7, 800 shares
    4 8, 000 shares

29. Calculate the number of shares after raising additional capital of R20, 000 and choose the correct option.

    1. 5, 333 shares
    2. 6, 667 shares
    3. 7, 600 shares
    4. 8, 000 shares

30 A capital lease is also known as .

1. an operating lease
2. a financial lease
3 a leveraged lease
4. a direct lease

Use the information provided below to answer question 31.

A company is evaluating a lease compared to a purchase option on an operating asset The company requires 9% on all investments The following information pertaining to the asset is available:

Option	Purchasing	Leasing
	(After-tax cash outflows '000)	(After-tax cash outflows '000)
Year 1	R275	R1, 200
Year 2	R145	R1, 200
Year 3	R130	R1, 200
Year 4	R455	R1, 200
Year 5	R5, 750	
NPV	**R3, 533**	**R3, 888**

31 Which option should the company choose?

1. Purchasing option for the first four years and swap to leasing from year 5
2 Leasing option for the first four years and swap to purchasing from year 5
3. Purchasing option
4 Lease option

32. LJ & D Ltd. is considering leasing equipment costing R10, 000 with a useful life of ten years and zero residual value The company can borrow the required R10, 000 with a ten-year-10% loan
Calculate the monthly instalments on the loan and choose the correct option.

1 R1, 000
2 R1, 139
3. R1, 627
4 R1, 700

33. Modigliani and Miller argue that when the company has no acceptable investment opportunities, it should

1. distribute the unneeded funds to the ordinary shareholders
2. keep the unneeded funds as retained earnings
3. raise its cost of capital
4. lower its cost of capital

34 Which of the following is one of the factors affecting dividend policy?

1. Irrelevance theory of dividends
2. Relevance theory of dividends
3 Residual theory of dividends
4. Flotation costs

Use the information provided below to answer question 35.

Zorro Inc 's optimal capital structure calls for 40% debt and 60% equity. The corporation has a capital budget of R1, 253, 890 for the following year and follows a residual theory of dividends. The chief financial officer (CFO) announced a zero dividend payout to the ordinary shareholders in view of this capital budget.

35. How much earnings for distribution to ordinary shareholders does Zorro Inc expect at the end of the year? Choose the most correct option

1. Greater than R600, 000
2. Less than or equal to R600, 000
3. Greater than R752, 334
4. Less than or equal to R752, 334

36. A company can influence the cost of capital through its policy on ...

1. interest payments
2. depreciation
3 dividends
4. taxes

Use the information provided below to answer question 37 and 38.

Mr. Melela owns 100 shares of Izigi Entertainment The shares were purchased two years ago at R20 per share The price of the share is currently trading at R35 per share and the company is subject to a 30% tax rate The company CFO has just announced a share split of 2 for 1.

37. Calculate the value of Mr. Melela's shares before the split and choose the correct option

1 R1, 225
2. R1, 750
3 R2, 450
4. R3, 500

38. What will the effect be on the share price after the split?

1. Remain at the current price of R35 per share
2. Decrease from the current R35 per share
3 Increase from the current R35 per share
4. Decrease the initial price R20 per share

39. A company is defending a hostile takeover by its competitor by using the poison pill strategy What is the aim of this strategy?

1. To allow the target company's shareholders to receive special voting rights which makes the company less desirable to the hostile acquirer
2. To repurchase the target company shares in the open market in an effort to push the price above that being offered by the acquirer
3. To try to convince the target company's shareholders that the price being offered is too low
4. To prompt the hostile acquirer and a new acquirer to compete for the target company

40. What is a conglomerate merger?

1. A merger achieved by acquiring a company that is in the same industry
2. A merger achieved by acquiring a company in unrelated business
3. A merger achieved by acquiring a two-tier company
4. A merger achieved by acquiring a customer

[40]

SECTION B **[30 MARKS]**

ANSWER THIS QUESTION IN THE SPACE PROVIDED.

QUESTION 1 **(13 marks)**

BJ and Brothers Cc has an optimal capital structure of 30% debt and 70% equity is evaluating three mutually exclusive projects for expansion purposes. The total value of the company is R500, 000. The company's audited comprehensive income statement reported a net income of R 80, 000 for the year ending December 2011 The Chief Financial Officer (CFO) confirmed that the company is under capital rationing with funds available for capital projects to be R51; 000 for the year 2012.

The company depreciates capital assets at 12% and is subject to a 29% tax rate The company's cost of equity is 16.36% and bank loans have an after-tax cost 8.50% per annum.
The following information is available on the projects·

Cash flows	Project A	Project B	Project C
Initial investment	(R52, 000)	(R78, 000)	(R50, 000)
Year 1	R28, 000	R17, 000	R22, 000
Year 2	R38, 000	R25, 000	R22, 000
Year 3		R23, 000	R22, 000
Year 4		R43, 000	
IRR	**16.55%**	**15, 45%**	**15.28%**

As a junior financial analyst of the company, the company CFO forwarded the above information to you to perform an analysis

1.1 In which project do you recommend that the company invest its funds and why? (10)

1 2 If the company uses the residual theory of dividends, calculate the retention rate of dividends (3)

QUESTION 2 **(17 marks)**

Comfort Floors (Pty) Ltd has fixed operating costs of R72, 000; a sales price of R9 75 and variable costs of R6.75 per unit. The company has sold 25,000 carpets and it expects the sales to increase to 30,000 carpets, because of introducing fixed costs to fund its operations The company issued 9, 000 ordinary shares and took out a R 10, 000 bond at 12% interest per annum in order to raise funds The company is subject to 30% tax rate

2.1 Fill in the missing amounts on the schedule below to demonstrate the effect of introducing fixed costs (12)

Carpets sold (in units)	25, 000	30,000
Sales	R.	R. . ....
Less. variable costs	R..... .	R .... ..
Less: fixed costs	R72, 000	R72, 000
EBIT	R	R.. .....
Less· interest	R	R ....
Net profits before tax	R1, 800	R16, 800
Less: taxes	R.	R.. . .. .
Net profits after tax	R	R .....
Less: preferred dividends	R .	R..... . ..
Earnings available to ordinary shareholders	R	R..... ..
Earnings per share (EPS)	R.....	R.. .. ...

2 2 How many carpets will have to be sold in order for the company to break-even? (2)

2 3 Calculate the degree of total leverage (DTL) for the company (2)

2.4 Explain your findings from 2.3 (1)

[30]

TOTAL [70]

[TURNOVER]

ROUGH WORK

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	1 886	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	*	*

* FVIF > 99999

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

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

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	*	*	*

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

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

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 = .000 when rounded off to three decimal place

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

UNIVERSITY OF SOUTH AFRICA UNISA university of south africa UNIVERSITEIT VAN SUID-AFRIKA

EXAMINATION MARK READING SHEET EKSAMEN-MERKLEESBLAD

PART 1 (GENERAL/ALGEMEEN) DEEL 1

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

1

PAPER NUMBER
VRAESTELNOMMER

2

INITIALS AND SURNAME
VOORLETTERS EN VAN

3

DATE OF EXAMINATION
DATUM VAN EKSAMEN

4

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

5

STUDENT NUMBER
STUDENTENOMMER

6

7

UNIQUE PAPER NO
UNIEKE VRAESTEL NR

8

9

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 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	36	71	106
2	37	72	107
3	38	73	108
4	39	74	109
5	40	75	110
6	41	76	111
7	42	77	112
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9	44	79	114
10	45	80	115
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12	47	82	117
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14	49	84	119
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17	52	87	122
18	53	88	123
19	54	89	124
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23	58	93	128
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25	60	95	130
26	61	96	131
27	62	97	132
28	63	98	133
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31	66	101	136
32	67	102	137
33	68	103	138
34	69	104	139
35	70	105	140