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UNISA university of south africa

FIN2603

OCTOBER/NOVEMBER 2017

FINANCE FOR NON-FINANCIAL MANAGERS

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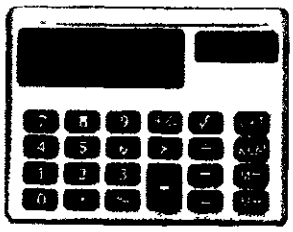

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UNISA university of south africa

FIN2603 (497350) October/November 2017

FINANCE FOR NON-FINANCIAL MANAGERS

Duration · 2 Hours 70 Marks

EXAMINERS :

FIRST	MR GPM GREBE
SECOND.	MS L NGCOBO
EXTERNAL :	MS ME DELPORT

Use of a non-programmable pocket calculator is permissible.

Closed book examination.

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This paper consists of 19 pages, plus interest tables on p I-IV, as well as the instructions for the completion of the mark reading sheet.

SECTION A counts 45 marks and **SECTION B** counts 25 marks.
ANSWER ALL THE QUESTIONS IN BOTH SECTIONS.
NO ROUGH WORK WILL BE MARKED.

SECTION A: MULTIPLE-CHOICE QUESTIONS (45 MARKS)

1. The long-term financial goal of the firm may be achieved by ...

    1. maximising revenue and minimising expenses.
    2. minimising the cost of capital and maximising return (IRR)
    3. maximising the assets relative to the liabilities
    4. accelerating cash inflows.

2. The primary short-term financial goal of the firm may be best achieved by ...

    1. maximising revenue and minimising expenses.
    2. minimising the cost of capital and maximising return (IRR)
    3. increasing expenses in order to reduce the firm's tax liability.
    4. accelerating cash inflows and delaying cash outflows.

3. An increase in sales revenue as a result of a credit sale is recorded by ...

    1. crediting cash.
    2. crediting sales.
    3. debiting cash.
    4. debiting sales

4. One method often used by companies to ensure that management decisions are in the best interest of the shareholders is to ...

    1. have a shareholder meeting once a year.
    2. threaten to fire managers who do not performing adequately.
    3. tie management compensation to the performance of the company share price.
    4. tie management compensation to the level of earnings per share

5. Vermaak & Associates Ltd has to raise an additional R1 000 000 in equity. The firm should ideally finance itself by means of ...

    1. R300 000 in cash, R1 00 000 in accounts receivable and R600 000 of inventory.
    2. R900 000 in debentures, 10 000 ordinary shares at a par value of 100 cents each and R10 000 in retained earnings.
    3. 500 000 ordinary shares at a par value of 200 cents each.
    4. R300 000 in debentures and 700 000 non-voting preference shares at 100 cents each.

6. A firm's cash flow becomes more predictable as the

1 current ratio increases
2. return on owners' equity increases
3. current liabilities decrease
4 current assets decrease

Famous Food Ltd is a newly listed company on the JSE Limited. Please use the following information to answer questions 7 to 9.

Sales	R450 000
Earnings after interest	R150 000
Tax	32%
Preference dividends due	R50 000
Preference shares issued	5 000
Ordinary shares issued	10 000

7 Calculate the earnings after tax for Famous Food Ltd

1 R102 000
2 R105 000
3. R119 000
4 R120 000

8 Calculate the earnings per share (EPS) for Famous Food Ltd.

1. R 5,20
2. R10,50
3 R11,00
4. R12,00

9. Calculate the net profit margin for Famous Food Ltd.

1 10,40%
2 11,56%
3. 22,67%
4. 26,34%

10. If accounts receivable increase by R500, inventory increases by R200 and accounts payable increase by R400, net working capital would ..

1. decrease by R300
2 increase by R300.
3. increase by R700
4. remain unchanged

11. At the operating breakeven point, .. equals zero

1. variable cost
2. fixed cost
3. net profit after tax
4. earnings before interest and tax (EBIT)

12. A company has fixed operating costs of R15 000. Its products are sold at R15 per unit and the variable cost per unit is R6. Calculate the company's breakeven point, in rand.

1 R1 111
2. R1 667
3. R16 667
4. R20 000

13. Refer to question 12 above and calculate the marginal income for the year if the company sold 22 000 units during the year.

1 R115 000
2. R120 000
3. R198 000
4 R300 000

Use the following information for BMC Limited in order to answer questions 14 to 19:

Opening inventory	R 70 000
Closing inventory	R 50 000
Cash	R 30 000
Accounts receivable	R 40 000
Long-term assets	R500 000
Accounts payable	R 50 000
Equity	R270 000
Long-term debt	R300 000
Sales	R400 000
Cost of goods sold	R200 000
Profit before tax	R60 000
Tax rate	35%

14. The gross profit margin for BMC Limited is closest to .

1. 20%
2. 50%.
3. 100%.
4 200%.

15. The net profit margin for BMC Limited is closest to ..

1. 6.58%.
2. 8.44%.
3 9.75%.
4. 12.43%.

16 The current ratio for BMC Limited is closest to ...

1. 1,2.
2. 1,8.
3. 2,0.
4. 2,4

17 The inventory turnover for BMC Limited is closest to

1. 2,86 times p.a.
2. 3,33 times p.a.
3. 4,00 times p a.
4. 6,23 times p.a

18 The average collection period for BMC Limited is closest to

1. 36 days
2 80 days.
3. 180 days
4. 360 days.

19 The return on assets (ROA) for BMC Limited is closest to ..

1. 6,29%
2. 14,77%.
3. 24,00%.
4 none of the above

20. A firm can best improve its return on equity (ROE) by increasing the . .

1. sales and decreasing expenditure
2. asset turnover and financial leverage.
3. net profit margin.
4. net profit margin, asset turnover and financial leverage

21 A current ratio of 4:1 may indicate that the firm has too much ...

1. cash
2. Inventory
3 accounts receivable.
4. all of the above

22. Calculate the growth rate of the following stream of cash flows·

2013: 3 600

2012· 3 000

2011: 1 900

2010 1 000

1. 23%
2. 26%
3. 43%
4. 53%

23. Calculate the future value (FV) of R35 000 invested for six years at an interest rate of 8%, compounded semi-annually

1 R14 026
2 R44 106
3 R56 036
4. R76 734

24 How much should Conner invest today at 9% interest per annum, compounded quarterly, to be able to buy a house worth R2 500 000 six years from today?

1 R 672 971,33
2. R1 115 564,17
3. R1 465 616,71
4 R1 954 322,19

25. Find the present value of the following stream of cash flows by assuming that the organisation has an opportunity cost of 12%.

Years	**Amount (R)**
1–3	23 000
4–7	38 000

1 R 71 203,41
2 R100 268,41
3 R122 268,41
4. R137 395,28

26 If Joel invests R50 000 in an unit trust offering a rate of return of 17% per annum, calculate how long it will take for the investment to reach R200 000

1 8 80 years
2 10 80 years
3 11 40 years
4. 13.50 years

27. If Brandon invests R5 000 at the beginning of each year at an interest rate of 8% over a ten-year period, the future value of the investment would be ..

1. R58 687,43.
2. R60 000,00.
3. R72 432,81.
4. R81 000,00

28 SOX Ltd has determined its optimal capital structure, which comprises the following.

Form of capital	Weight	After-tax cost
Long-term debt	60%	8%
Preference shares	20%	13%
Ordinary shares	20%	10%

The weighted average cost of capital is . .

1. 5,3%
2 9,4%
3. 10,4%.
4. 12,1%

29. The after-tax cost of debt for a firm, which has a marginal tax rate of 35%, is 6%. Calculate the before-tax cost of debt.

1. 6,0%
2. 8,1%
3. 9,2%
4. 17,1%

30. The best way in which a firm may improve its profitability would involve ...

1. reducing expenditure on non-core business activities
2 employing fewer permanent staff and using contract workers during peak periods.
3. increasing sales by means of improved marketing
4. selling all its non-core assets

31 ABC Limited purchased raw materials on account and paid for them within 30 days. The raw materials were used in the manufacturing of finished goods that were sold on account 100 days after the raw materials had been purchased. The customer paid for the finished goods 60 days later Calculate the company's cash conversion cycle.

1. 10 days
2 70 days
3 130 days
4 190 days

32 William, the export manager of an international company, wishes to replace a machine five years from now with a new machine that will cost R500 000 in five years' time If equal end-of-year deposits are made into an account paying an annual interest of 9%, calculate the size of each deposit

1 R23 535,24
2. R49 382,38
3 R83 546,23
4 R95 345,78

33 The financial manager is evaluating a proposal for a new project with the following cash flows

Year	Net cash flows
0	–R1 000 000
1	R550 000
2	R350 000
3	R400 000

The payback period is .

1 one year.
2. two years
3. between one and two years.
4 between two and three years

34. Blue Bay Ltd has made an initial investment of R500 000 in a new project The firm's cost of capital is 12% The investment is expected to generate the following cash inflows over the next five years.

Year 1:	R 50 000
Year 2:	R 60 000
Year 3:	R150 000
Year 4:	R140 000
Year 5:	R500 000

The profitability index (PI) is ..., therefore, the investment should ..

1. 1,14, not be undertaken
2. 1,14; be undertaken.
3. 1,29; be undertaken.
4. 1,29; not be undertaken.

35. The present value of the cash flows of an investment is expected to total R180 000. The profitability index is calculated at 1,40. Calculate the initial investment.

1. R127 562,43
2. R128 571,43
3. R142 857,14
4. R147 857,14

36. A firm with a cash conversion cycle of 40 days can stretch its average payment period from 15 days to 20 days. This will result in a/an ...

1. decrease of 5 days in the cash conversion cycle.
2. increase of 5 days in the cash conversion cycle.
3. decrease of 20 days in the cash conversion cycle.
4. increase of 20 days in the cash conversion cycle.

37 A company has a cash conversion cycle of 50 days Annual outlays are R10 million and the cost of negotiated financing is 9% Calculate its annual savings if the company reduces its average age of inventory by 15 days Assume 360 days per year.

1. R15 679
2 R17 778
3 R37 500
4. R52 500

38 The cost of a giving-up-cash discount under the terms of sale 4/10 net 35 is . (Assume a 360-day year)

1 40,11%
2 60,00%
3 78,00%
4 99,34%

39. Calculate the difference between the following two investment proposals·
(a) R1 401,82 invested annually for five successive years at 9% per annum
(b) R5 209,22 invested for five years at 10% per annum compound interest

1 R0
2 R36,10
3. R80,25
4. R100,35

40 A firm has annual sales of 80 000 units Carrying costs as a percentage of inventory value is 15%. The purchase price per unit is R200, while the fixed costs of placing an order is R20 per order The economic order quantity (EOQ) is units

1 145
2 327
3 456
4 897

41 Mr Parker has arranged for a 60-day loan at an annual interest rate of 9,5%. If the loan amount is R1 000 000, how much interest will Mr Parker pay in rand terms? (Assume a 360-day year.)

1 R12 500
2 R15 833
3 R23 556
4 R45 000

42 Calculate the EOQ given the following information

19 000 units used annually, purchased at R60 per unit
Order cost is R240 per order
Carrying cost is 9% of inventory value

1 1 300 units
2. 1 400 units
3. 1 500 units
4. 1 600 units

43 Credit terms of 2/10 net 30 are set for a business. These terms imply .

1. a 2% discount if paid within 10 days; otherwise, the balance is due in 30 days.
2. that the bond must be amortised before 2 October 2030
3. that the lease agreement expires on 10 October 2030.
4. a 2% discount if paid within 30 days; otherwise, the balance is due in 10 to 30 days.

44. Which one of the following statements is incorrect?

1. Relaxation of credit standards will cause an increase in sales volume.
2. Relaxation of credit standards will cause an increase in accounts receivable.
3. Relaxation of credit standards will cause a decrease in bad debt costs.
4. Tightening of credit standards will cause a decrease in bad debt costs

45. Which stakeholders have the first claim on assets when a firm enters bankruptcy?

1. Creditors
2. Top management
3. Debtors
4. Shareholders

SECTION B: LONG QUESTIONS **[25 MARKS]**

QUESTION 1 **(10 MARKS)**

The forecasted sales for Bontra Limited for January to April 2018 appear in the table below

Month	January	February	March	April
Sales (R)	250 000	270 000	200 000	300 000

- The company receives 40% of all sales in the month of sale, 30% one month later, and 25% two months later. Five per cent of the company's sales are written off as bad debts.
- Purchases are valued at 40% of each month's projected sales
- The following cash receipts and cash disbursements should also be taken into account
  - Rental income for January and February will amount to R50 000 each, while a 5% increase for March and April are forecasted
  - Depreciation on the company's vehicles amounts to R10 000 per month.
  - In March, the company will make a cash contribution of R40 000 to a local charity.
  - Telephone expenses vary each month The telephone costs for January, February, March and April are expected to amount to R5 000, R4 000, R6 000 and R4 000, respectively
  - Salaries are paid as commission, which is calculated at 15% of each month's sales value
  - In March, payment for delivery vehicles becomes due and the company needs to pay R60 000 to its supplier
  - The retrenchment of two employees in March will cost the company R60 000
  - The closing cash balance on 31 December 2017 is R20 000

REQUIRED

Prepare a cash budget for the months of January, February and March.

	January (R)	February (R)	March (R)
Cash receipts			
Total cash inflows			
Cash payments			
Total cash outflows			
Net monthly change			
Beginning cash balance			
Closing cash balance			

ROUGH WORK (will be marked)

QUESTION 2 **(10 MARKS)**

Network Ltd considers investing in a new project that will give them a potential competitive edge over the competition The outlay of the project will cost R4 000 000 The financial manager of the company has estimated the cash inflows associated with this new project as follows:

Year	Cash inflow
1	R 200 000
2	R 800 000
3	R 900 000
4	R 2000 000
5	R 3000 000

The firm's cost of capital is 11%.

2 1 Calculate the net present value (NPV) of investing in the proposed project. (4)

2 2 Calculate the internal rate of return (IRR) of investing in the proposed project (rounded off to the nearest whole percentage) (4)

2.3 Evaluate the acceptability of the proposed project based on your calculations of the NPV and IRR What recommendation would you make regarding the implementation of the project to the management of Network Ltd ? (2)

QUESTION 3 **(5 MARKS)**

Jasco Electronics Ltd. has a capital structure which consists of 45% debt, 10% preference shares and 45% ordinary shares The interest rate payable on the loan is 13% The firm's cost of preference shares is 13% and the cost on ordinary shares is 12% The firm is subject to a tax rate of 30% Determine the firm's weighted average cost of capital (Show all calculations).

ROUGH WORK

Appendix A: Interest tables

Table 1: Future-value interest factors for R1 compounded at k per cent 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 per cent for n periods

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

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	•	•	•

FVIFA > 99999

Table 3: Present-value interest factors for R1 discounted at k per cent 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 places

Table 4 Present-value interest factors for a R1 annuity discounted at k per cent 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	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