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FIN2603/RFI2603

MAY/JUNE 2017

FINANCE FOR NON-FINANCIAL MANAGERS

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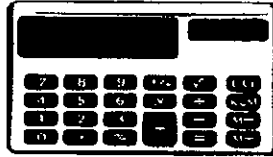
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FIN2603 (471081)
SECOND PAPER

May/June 2017

FINANCE FOR NON-FINANCIAL MANAGERS

Duration 2 Hours

70 Marks

EXAMINERS

FIRST

MR GPM GREBE

SECOND

MR M AV NXUMALO

MISS KD SINDANE

EXTERNAL

MS ME DELPORT

Use of a non-programmable pocket calculator is permissible.

Closed book examination

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This paper consists of 20 pages, including two pages for rough work (p19-20) plus interest tables (p i-iv)

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**[50 MARKS]**

- 1 The part of finance concerned with design and delivery of advice and financial products to individuals, businesses and the government is called
 1. managerial finance
 2. financial advice
 3. financial services
 4. All of the above

- 2 Who is/are the true owner(s) of a business enterprise?
 1. The board of directors
 2. The chief executive officer
 3. The shareholders
 4. The creditors

3. What is the main function of a financial manager?
 1. To prevent bad debts
 2. To ensure liquidity and solvency
 3. To increase the value of ordinary shares
 4. To earn returns greater than those of the competitors

- 4 The primary goal of a publicly-owned firm interested in serving its stockholders should be to
 1. minimise the debt used by the firm
 2. maximise the EPS
 3. maximise the stock price per share
 4. maximise the expected net income

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

[TURN OVER]

- 6 West Wing Limited has total liabilities of R500 000 and owner's equity of R250 000
The company's total assets are
- 1 R250 000
 - 2 R400 000
 - 3 R750 000
 - 4 R950 000
- 7 During the past year a firm received cash from clients amounting to R11 000. The firm paid creditors and employees an amount of R3 900. Interest paid amounted to R1 200. No dividends were paid out. The firm paid normal tax amounting to R500. The cash flow from operations amounts to
- 1 R7 100
 - 2 R4 500
 - 3 R4 600
 - 4 R5 400
- 8 All of the following are examples of fixed assets, EXCEPT
- 1 Vehicles
 - 2 Equipment
 - 3 Marketable securities
 - 4 Buildings
- 9 At the breakeven point _____ equals zero
- 1 fixed cost
 - 2 variable cost
 - 3 sales revenue
 - 4 earnings before interest and tax (EBIT)
- 10 If accounts receivable increases by R300, inventory increases by R600 and accounts payable increases by R200, net working capital would
- 1 decrease by R1 100
 - 2 decrease by R700
 - 3 increase by R700
 - 4 increase by R1 100
- 11 Operating profit is defined as
- 1 gross profit minus operating expenses
 - 2 sales revenue minus cost of goods sold
 - 3 earnings before depreciation and taxes
 - 4 sales revenue minus depreciation expenses

[TURN OVER]

Use the following information on Price Limited to answer questions 12 to 16

Total assets	R500 000
Cost of goods sold	R1000 000
Total asset turnover (per annum)	12 times
Net income after tax	R300 000
Debt ratio	40%
Price/earnings ratio	9
Share price	R45

12 The total sales for Price Limited are closest to ..

- 1 R 600 000
- 2 R 1 000 000
- 3 R 6 000 000
- 4 R10 000 000

13 The gross profit margin for Price Limited is closest to

- 1 50%
- 2 63%
- 3 83%
- 4 100%

14 The net profit margin for Price Limited is closest to

- 1 2%
- 2 3%
- 3 4%
- 4 5%

15 The earnings per share (EPS) for Price Limited are closest to

- 1 5
- 2 9
- 3 10
- 4 12

16 The number of shares outstanding for Price Limited is closest to

- 1 40 000 shares
- 2 60 000 shares
- 3 66 667 shares
- 4 96 667 shares

[TURN OVER]

17 Which ratios are a measure of the speed with which various accounts are converted into sales and cash?

- 1 liquidity
- 2 debt
- 3 profitability
- 4 activity

18 Which ratio is useful in evaluating credit and collection policies?

- 1 average payment period
- 2 current ratio
- 3 average collection period
- 4 current asset turnover

19 B and C Limited extend credit terms of 43 days to its customers. Its credit collection would likely be considered poor if its average collection period was

- 1 30 days
- 2 36 days
- 3 43 days
- 4 45 days

20 In general, a lending institution would consider a decrease in which of the following ratios to be positive news?

- 1 interest coverage
- 2 debt to total assets
- 3 return on assets
- 4 current ratio

21 Current liabilities can be viewed as

- 1 debts that mature in one year or less
- 2 debts that mature in more than one year
- 3 sources of cash inflows
- 4 irrelevant in calculating net working capital

22 A company has fixed operating costs of R4 500, the selling price per unit is R12 and its variable cost per unit is R9. The company's breakeven point is units

- 1 1 000
- 2 1 333
- 3 1 500
- 4 2 500

[TURN OVER]

23 A company has fixed operating costs of R6 000, the selling price per unit is R13 and its variable cost per units is R9 Calculate the company's breakeven point

- 1 R 7 800
- 2 R24 000
- 3 R19 000
- 4 R19 500

24 Referring to question 23 above, calculate the marginal income for the year if the company sold 900 units for the year

- 1 R 2 800
- 2 R 3 600
- 3 R 4 000
- 4 R11 700

25 Sharewealth Limited has fixed assets worth R600 000 and current assets worth R240 000 The company owes R250 000 on a mortgage bond and money owed to creditors amounts to R100 000. Owners' equity equals .

- 1 R380 000
- 2 R420 000
- 3 R490 000
- 4 R570 000

26 A toothpick wholesaler has sales of 15 000 000 units annually The purchase price per toothpick for the company is R0,10 Placing an order with the company's supplier carries a fixed cost of R250 The carrying costs for inventory expressed as a percentage is 20% Calculate the economic order quantity for the company

- 1 490 units
2. 12 247 units
- 3 17 321 units
- 4 612 372 units

27 If it takes nine days from placing an order until stock is delivered and a firm sells 825 units a day, what is the firm's reorder point?

- 1 92 units
- 2 816 units
- 3 834 units
- 4 7 425 units

[TURN OVER]

28 A firm has a cash conversion cycle of 90 days, an average payment period of 15 days and an average collection period of 30 days. What is the firm's average age of inventory?

- 1 35 days
- 2 45 days
- 3 75 days
- 4 135 days

29 An increase in the financial leverage of a firm will lead to

- 1 a decrease in the value of the firm
- 2 an increase of the cost of capital for the firm
- 3 a decrease in EPS for the firm
- 4 a decrease of the cost of capital for the firm

30 Which source of funds are very small firms most likely to rely on?

- 1 long-term debt
- 2 equity
- 3 preference shares
- 4 short-term debt

31 Which stakeholders have the first claim on assets if a firm enters bankruptcy?

- 1 creditors
- 2 the owners
- 3 debtors
- 4 shareholders

32 A business has financed 45% of its assets through an 11% after tax cost of debt loan. The remainder of its assets are financed through equity. The firm's required return on equity is 16%. What is the firm's weighted average cost of capital (WACC)?

- 1 13,25%
- 2 13,75%
- 3 28,50%
- 4 43,56%

33 A firm has a loan with an interest rate of 12%. The firm is subject to a tax rate of 28%. What is the firm's after tax cost of debt?

- 1 3,36%
- 2 8,64%
- 3 11,28%
- 4 12,72%

[TURN OVER]

34 The payback period should ideally be

- 1 longer than the duration of the project
- 2 as long as possible
- 3 as short as possible
- 4 as long as the duration of the project

35 If R50 000 was invested in a fund offering a rate of 15% per year, approximately how many years will it take for the investment to reach R100 000?

- 1 4 years
- 2 5 years
- 3 7 years
- 4 13 years

36 If you were to borrow R300 000 over three years at an annual interest rate of 10%, what would the repayment on the principal amount of the loan be in year 2?

- 1 R 90 634 44
- 2 R 99 697 89
- 3 R109 667 67
- 4 R120 634 44

37 Calculate the present value of the following streams of cash flow

Year	Cash flow
1	R21 000
2	R22 000
3	R24 000
4	R19 000

Assume a discount rate of 8% and work to the nearest rand

- 1 R63 213
- 2 R71 323
- 3 R76 754
- 4 R77 029

38 What is the present value of an annuity that pays R25 000 in seven equal annual payments assuming a discount rate of 13%?

- 1 R 10 626 52
- 2 R 74 385 61
- 3 R110 565 26
- 4 R124 938 75

[TURN OVER]

39 What is the future value of R20 000 invested today at an annual interest rate of 14% over a period of 16 years, assuming that interest is compounded semi-annually?

- 1 R144 115 19
- 2 R162 744 99
- 3 R174 305 42
- 4 R180 805 81

40 What is the growth rate of the following streams of cash flow?

Year	Cash flow
2013	R 8 567
2012	R 7 489
2011	R 6 589
2010	R 5 656

- 1 10,94%
- 2 14,84%
- 3 16,50%
- 4 51,47%

41 What would R15 000, invested today at 9% compound interest per annum be worth in seven years' time? Round your answer off to the nearest rand.

- 1 R 8 206
- 2 R 9 450
- 3 R27 421
- 4 R32 578

42 What amount would you have to invest today at an annual interest rate of 12% to have R165 000 saved in 11 years' time?

- 1 R 15 000 00
- 2 R 47 433 56
- 3 R 71 120 69
- 4 R573 960 75

43 If you were to take out a loan of R310 000 today at an annual interest rate of 11% and you have to pay off the loan over four years, how much will your equal annual payments to repay the loan be?

- 1 R 65 821 17
- 2 R 86 025 00
- 3 R 99 921 17
- 4 R111 600 00

[TURN OVER]

- 44 A company sells MP3 players for R500 each. Variable costs per player amount to R280 and the company has total fixed operating costs of R125 000. What is the company's breakeven point in units?
- 1 160 units
 - 2 250 units
 - 3 446 units
 - 4 568 units
- 45 If a company expects to sell 400 000 units of canned meat in a year, what will the company's margin of safety ratio be if the company's breakeven volume is 285 000 units?
- 1 29%
 - 2 40%
 - 3 71%
 - 4 140%
- 46 Which one of the following is not an example of variable costs?
- 1 packaging materials
 - 2 building rent
 - 3 shipping costs
 - 4 raw materials
- 47 A markup percentage of 167% translates to a gross profit margin of
- 1 40%
 - 2 67%
 - 3 160%
 - 4 249%
- 48 _____ costs are a function of volume, not time
- 1 Fixed financial
 - 2 Variable
 - 3 Fixed operating
 - 4 Semi-variable
- 49 A company changing its credit terms for customers from 2/15 net 60, to 3/10 net 30, will likely experience .
- 1 higher net income
 - 2 a decrease of cash in hand
 - 3 an increase in the average collection period
 - 4 a decrease in the average collection period

[TURN OVER]

50 A firm is offered payment terms of 3/15 net 60 by a supplier. Calculate the cost of giving up the cash discount. Assume a 365 day year.

- 1 15,05%
- 2 18,81%
- 3 25,09%
- 4 113,00%

[TURN OVER]

SECTION B**LONG QUESTIONS****QUESTION 1****[10 MARKS]**

The forecasted sales for G&P Limited for January to April are supplied in the table below

Month	January	February	March	April
Sales (R)	50 000	60 000	80 000	100 000

- The company receives 40% of all sales in the month of sale 25% is received one month later, while the remaining percentage is received two months after the month of sale
- Purchases for each month are displayed in the table below

Month	January	February	March	April
Purchases (R)	R10 000	R13 000	R12 000	R9 000

- The following cash receipts and cash disbursements should also be taken into account
 - Rental income for January and February amounted to R20 000 each, while a 10% increase for March and April is forecast
 - Telephone expenses vary each month The telephone costs for February, March and April were R500, R1 600 and R2 000 respectively
 - Salaries are paid as commission, which is calculated at 15% of each month's sales value
 - G&P Limited funded a local charity event in April that amounted to R5 000
 - The opening cash balance for February is R15 000.

[TURN OVER]

REQUIRED

1 1 Prepare a cash budget for the months of February, March and April

	February (R)	March (R)	April (R)
Opening cash balance:			
<u>Cash receipts:</u>			
Total cash receipts			
<u>Cash payments:</u>			
Total payments			
Netto cash surplus (shortage)			
Beginning cash balance			
Minimum cash balance			
Closing cash balance:			

[TURN OVER]

QUESTION 2**[10 MARKS]**

Beach Ball Limited is attempting to evaluate the feasibility of investing in a new machine to speed up the production of beach balls. The cost of the new machine is R300 000. The cost of installing the new machine amounts to R15 000. The financial manager has estimated the cash inflows associated with this investment as follows:

YEAR	Cash inflow
1	R20 000
2	R50 000
3	R100 000
4	R150 000
5	R170 000

The firm has a cost of capital of 12%.

2.1 Calculate the net present value (NPV) of the proposed investment (4)

[TURN OVER]

2 2 Calculate the internal rate of return (IRR) of the proposed investment, rounded off to the nearest whole percentage (4)

2 3 Evaluate the acceptability of the proposed investment based on your calculations of the NPV and IRR. What recommendation would you make regarding the implementation of the project? (2)

ROUGH WORK

This section contains 30 horizontal lines for writing, starting below the 'ROUGH WORK' heading and ending above the '[TURN OVER]' instruction. The lines are evenly spaced and extend across the width of the page.

[TURN OVER]

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	*	*

Table 2 Future-value interest factors for a R1 annuity compounded at k percent 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	.	.	.

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 = 0.00 when rounded off to three decimal places.

[TURN OVER]

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

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

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 (BY PSY100-X)

1

PAPER NUMBER
VRAESTELNOMMER

2

STUDENT NUMBER
STUDENTENOMMER

6

7

8

9

INITIALS AND SURNAME
VOORLETTERS EN VAN

DATE OF EXAMINATION
DATUM VAN EKSAMEN

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

UNIQUE PAPER NO.
UNIEKE VRAESTEL NR.

8

9


9

9


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

PART 2 (ANSWERS/ANTWOORDE) DEEL 2

1	(1) (2) (3) (4) (5)
2	(1) (2) (3) (4) (5)
3	(1) (2) (3) (4) (5)
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Specimen only

MARK READING SHEET INSTRUCTIONS

Your mark reading sheet is marked by computer and should therefore be filled in thoroughly and correctly

USE ONLY AN HB PENCIL TO COMPLETE YOUR MARK READING SHEET

PLEASE DO NOT FOLD OR DAMAGE YOUR MARK READING SHEET

Consult the illustration of a mark reading sheet on the reverse of this page and follow the instructions step by step when working on your sheet

Instruction numbers ❶ to ❿ refer to spaces on your mark reading sheet which you should fill in as follows

- ❶ Write your paper code in these eight squares, for instance

P	S	Y	1	0	0	-	X
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- ❷ The paper number pertains only to first-level courses consisting of two papers

WRITE

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 for the first paper and

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 for the second. If only one paper, then leave blank

- ❸ Fill in your initials and surname
- ❹ Fill in the date of the examination
- ❺ Fill in the name of the examination centre
- ❻ WRITE the digits of your student number HORIZONTALLY (from left to right). Begin by filling in the first digit of your student number in the first square on the left, then fill in the other digits, each one in a separate square
- ❼ In each vertical column mark the digit that corresponds to the digit in your student number as follows [-]
- ❽ WRITE your unique paper number HORIZONTALLY
NB Your unique paper number appears at the top of your examination paper and consists only of digits (e.g. 403326)
- ❾ In each vertical column mark the digit that corresponds to the digit number in your unique paper number as follows [-]
- ❿ Question numbers 1 to 140 indicate corresponding question numbers in your examination paper. The five spaces with digits 1 to 5 next to each question number indicate an alternative answer to each question. The spaces of which the number correspond to the answer you have chosen for each question and should be marked as follows [-]
- ◆ For official use by the invigilator. Do not fill in any information here

