

**University of Swaziland**  
**Department of Accounting**  
**Main Exam Paper**

Programme of Study : Bachelor of Commerce  
Year of Study : Year four (Full Time); Level 5 (Part Time)  
Title of Paper : Business Finance I.  
Course Code : AC 403 (Full Time) / IDE AC 403 (Part Time)  
Time Allowed : 3 Hours.

- Instructions:
1. The total number of questions on this paper is four (4).
  2. Answer all the questions.
  3. The marks awarded for a question / part is indicated at the end of each question / part of question.
  4. Where applicable, submit all workings and calculations on the answer sheet alongside the case.
  5. Calculations are to be made to two decimal places of accuracy unless otherwise instructed.

**Note:** You are reminded that in assessing your work, account will be taken of accuracy of the language and the general quality of expression, together with the layout and presentation of your final answer.

**Special requirement : Calculator and P V tables**

**This paper is not to be opened until permission has been granted by the invigilator.**

**QUESTION 1:**

a) The Show Burn Inc has a 20 year bond outstanding that pay a coupon rate of interest of 10% paid semi annually plus E 1,000 at maturity.

5 years after the issue, at what price can you buy the bond if going rate of interest is 12%?

**(6 marks)**

b) i) Using SML identify overpriced or under priced securities from the data given below.

Security	Expected return	Beta
Right Bank	30%	1.6
Swazi Sugar	24	1.4
Proline Securities	18	1.2
KSP Cements	15	0.9
Imphilo Beverages	15	1.1
Zed Labs	12	0.7

The relevant results for the aggregate market are that the return on 3-month Swazi Govt. Treasury bill is 10 percent and the return on SSX All-share Index is 18 percent.

ii) From the above findings which is the best security and why?

**(13 marks)**

c) The annual yield on a two-year treasury bond issued by Swaziland Government is 12.5 percent, while on a one-year bond is 9.5 percent. Real risk-free rate  $k^*$  is 3%, and the maturity risk premium is zero.

i) According to the Expectations Theory, how much will be the interest rate on a 1 year bond during second year?

ii) How much is the expected inflation rate in year 1? Year 2?

**(6 marks)**

**Total (25 marks)**

**QUESTION 2:**

- a) Conduct of Du Pont Analysis enables an organization to identify the individual components that contribute to the overall return generated by the company. Discuss. (10 marks)
- b) i) Define the term "Term structure of interest rates". (3 marks)  
 ii) Explain how long and short term interest rates are related to each other? (6 marks)  
 iii) Explain the shape of the yield curve with the help of any two theories. (6 marks)
- TOTAL (25 marks)**

**QUESTION 3:**

- a) Arcelor Steels currently makes all sales on credit and offers no cash discount. Now, the firm is contemplating to offer a 2% cash discount for payment within 10 days to speed up its collections. Currently, the firm's average collection period is 50 days and has sales of 35,000 units per annum. Selling price is E35 per unit, and variable cost per unit is E28.

The firm expects that the change in the proposed cash discount will lead to an increase in sales to 39,000 units with 70 percent of its customers taking the cash discount. This in turn will lead to a fall of 15 days in the average collection period to 35 days. However, bad debts at present amount to 2 percent of total sales and this is not expected to change with the proposed discount policy. The firm's cost of capital is 20 percent.

**Required:**

Make a recommendation as to whether the firm should consider the proposed discount policy or not? (Assume a 365 day year)

**(15 marks)**

- b) J K Tyres is concerned about managing cash efficiently. On an average accounts receivables are collected in 45 days, inventories have an age of 75 days and accounts payables are paid on an average 30 days after they arise. The firm spends a total of E 1,500,000 annually at a constant rate and a 365 day year. The firm can earn 12% on investments.

**Required:**

- i) Compute the operating cycle  
 ii) Compute the cash conversion cycle  
 iii) Minimum amount of cash to be maintained to meet payments as they become due.  
 iv) The savings if average inventory holding period is reduced by 30 days.

**(6 marks)**

- c) Royal Industries feels a lock-box system can shorten its accounts receivables collection period by 4 days. Credit sales are estimated to be E 36,500,000 per annum billed on a continuous basis. The firm's opportunity cost of funds is 12 percent. The cost of lock box system is E 60,000. Assume a 365 day year.

**Required:**

- i) Will you advice 'Royal' to go for the lock-box system?
- ii) Will your answer be different if accounts receivables collection period is reduced by 6 days?

*(4 marks)*

**Total (25 marks)**

**QUESTION 4:**

Mantenga Inc. is planning to introduce a new product with a project life of 8 years. The project is to be set up in a Special Economic Zone, that qualifies for one time (at beginning) tax free subsidy from the Provincial Government of E 2,500,000 on capital investment. Initial equipment cost will be E 17,500,000. Additional equipment costing E 1,250,000 will be purchased at the end of the third year from the cash inflow of this year. At the end of 8 years, the equipment can be sold for E 125,000. A working capital of E 2,000,000 will be needed and it will be released at the end of eighth year. The project will be financed with sufficient amount of equity capital.

The sales volume over eight years has been estimated as follows:

Year	1	2	3	4-5	6-8
Units	72,000	108,000	260,000	270,000	180,000

A sales price of E 120 per unit is expected and variable expenses will amount to 60% of sales revenue. Fixed cash operating costs will amount E 1,800,000 per year. The loss of any year will be set off from the profits of subsequent two years. The company is subject to 30% corporate tax rate and considers 12 percent to be an appropriate after tax cost of capital for this project. The company follows straight line method of depreciation.

**Note:** Round off the decimals to the nearest integer.

**Required:**

Calculate the Net Present Value of the project and advise the management as to the appropriate decision.

*(25 marks)*

**END OF QUESTION PAPER**



**Present Value of \$1**

*Interest rate (r)*

Periods (n)	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%
1	0.9901	0.9804	0.9709	0.9615	0.9524	0.9434	0.9346	0.9259	0.9174	0.9091	0.9009	0.8929
2	0.9803	0.9612	0.9426	0.9246	0.9070	0.8900	0.8734	0.8573	0.8417	0.8264	0.8116	0.7972
3	0.9706	0.9423	0.9151	0.8890	0.8638	0.8396	0.8163	0.7938	0.7722	0.7513	0.7312	0.7118
4	0.9610	0.9238	0.8885	0.8548	0.8227	0.7921	0.7629	0.7350	0.7084	0.6830	0.6587	0.6355
5	0.9515	0.9057	0.8626	0.8219	0.7835	0.7473	0.7130	0.6806	0.6499	0.6209	0.5935	0.5674
6	0.9420	0.8880	0.8375	0.7903	0.7462	0.7050	0.6663	0.6302	0.5963	0.5645	0.5346	0.5066
7	0.9327	0.8706	0.8131	0.7599	0.7107	0.6651	0.6227	0.5835	0.5470	0.5132	0.4817	0.4523
8	0.9235	0.8535	0.7894	0.7307	0.6768	0.6274	0.5820	0.5403	0.5019	0.4665	0.4339	0.4039
9	0.9143	0.8368	0.7664	0.7026	0.6446	0.5919	0.5439	0.5002	0.4604	0.4241	0.3909	0.3606
10	0.9053	0.8203	0.7441	0.6756	0.6139	0.5584	0.5083	0.4632	0.4224	0.3855	0.3522	0.3220
11	0.8963	0.8043	0.7224	0.6496	0.5847	0.5268	0.4751	0.4289	0.3875	0.3505	0.3173	0.2875
12	0.8874	0.7885	0.7014	0.6246	0.5568	0.4970	0.4440	0.3971	0.3555	0.3186	0.2858	0.2567
13	0.8787	0.7730	0.6810	0.6006	0.5303	0.4688	0.4150	0.3677	0.3262	0.2897	0.2575	0.2292
14	0.8700	0.7579	0.6611	0.5775	0.5051	0.4423	0.3878	0.3405	0.2992	0.2633	0.2320	0.2046
15	0.8613	0.7430	0.6419	0.5553	0.4810	0.4173	0.3624	0.3152	0.2745	0.2394	0.2090	0.1827
16	0.8528	0.7284	0.6232	0.5339	0.4581	0.3936	0.3387	0.2919	0.2519	0.2176	0.1883	0.1631
17	0.8444	0.7142	0.6050	0.5134	0.4363	0.3714	0.3166	0.2703	0.2311	0.1978	0.1696	0.1456
18	0.8360	0.7002	0.5874	0.4936	0.4155	0.3503	0.2959	0.2502	0.2120	0.1799	0.1528	0.1300
19	0.8277	0.6864	0.5703	0.4746	0.3957	0.3305	0.2765	0.2317	0.1945	0.1635	0.1377	0.1161
20	0.8195	0.6730	0.5537	0.4564	0.3769	0.3118	0.2584	0.2145	0.1784	0.1486	0.1240	0.1037
21	0.8114	0.6598	0.5375	0.4388	0.3589	0.2942	0.2415	0.1987	0.1637	0.1351	0.1117	0.0926
22	0.8034	0.6468	0.5219	0.4220	0.3418	0.2775	0.2257	0.1839	0.1502	0.1228	0.1007	0.0826
23	0.7954	0.6342	0.5067	0.4057	0.3256	0.2618	0.2109	0.1703	0.1378	0.1117	0.0907	0.0738
24	0.7876	0.6217	0.4919	0.3901	0.3101	0.2470	0.1971	0.1577	0.1264	0.1015	0.0817	0.0659
25	0.7798	0.6095	0.4776	0.3751	0.2953	0.2330	0.1842	0.1460	0.1160	0.0923	0.0736	0.0588
26	0.7720	0.5976	0.4637	0.3607	0.2812	0.2198	0.1722	0.1352	0.1064	0.0839	0.0663	0.0525
27	0.7644	0.5859	0.4502	0.3468	0.2678	0.2074	0.1609	0.1252	0.0976	0.0763	0.0597	0.0469
28	0.7568	0.5744	0.4371	0.3335	0.2551	0.1956	0.1504	0.1159	0.0895	0.0693	0.0538	0.0419
29	0.7493	0.5631	0.4243	0.3207	0.2429	0.1846	0.1406	0.1073	0.0822	0.0630	0.0485	0.0374
30	0.7419	0.5521	0.4120	0.3083	0.2314	0.1741	0.1314	0.0994	0.0754	0.0573	0.0437	0.0334
31	0.7346	0.5412	0.4000	0.2965	0.2204	0.1643	0.1228	0.0920	0.0691	0.0521	0.0394	0.0298
32	0.7273	0.5306	0.3883	0.2851	0.2099	0.1550	0.1147	0.0852	0.0634	0.0474	0.0355	0.0266
33	0.7201	0.5202	0.3770	0.2741	0.1999	0.1462	0.1072	0.0789	0.0582	0.0431	0.0319	0.0238
34	0.7130	0.5100	0.3660	0.2636	0.1904	0.1379	0.1002	0.0730	0.0534	0.0391	0.0288	0.0212
35	0.7059	0.5000	0.3554	0.2534	0.1813	0.1301	0.0937	0.0676	0.0490	0.0356	0.0259	0.0189
36	0.6989	0.4902	0.3450	0.2437	0.1727	0.1227	0.0875	0.0626	0.0449	0.0323	0.0234	0.0169
37	0.6920	0.4806	0.3350	0.2343	0.1644	0.1158	0.0818	0.0580	0.0412	0.0294	0.0210	0.0151
38	0.6852	0.4712	0.3252	0.2253	0.1566	0.1092	0.0765	0.0537	0.0378	0.0267	0.0190	0.0135
39	0.6784	0.4619	0.3158	0.2166	0.1491	0.1031	0.0715	0.0497	0.0347	0.0243	0.0171	0.0120
40	0.6717	0.4529	0.3066	0.2083	0.1420	0.0972	0.0668	0.0460	0.0318	0.0221	0.0154	0.0107

**Present Value of \$1**

*Interest rate (r)*

Periods (n)	13%	14%	15%	16%	17%	18%	19%	20%	21%	22%	23%	24%
1	0.8850	0.8772	0.8696	0.8621	0.8547	0.8475	0.8403	0.8333	0.8264	0.8197	0.8130	0.8065
2	0.7831	0.7695	0.7561	0.7432	0.7305	0.7182	0.7062	0.6944	0.6830	0.6719	0.6610	0.6504
3	0.6931	0.6750	0.6575	0.6407	0.6244	0.6086	0.5934	0.5787	0.5645	0.5507	0.5374	0.5245
4	0.6133	0.5921	0.5718	0.5523	0.5337	0.5158	0.4987	0.4823	0.4665	0.4514	0.4369	0.4230
5	0.5428	0.5194	0.4972	0.4761	0.4561	0.4371	0.4190	0.4019	0.3855	0.3700	0.3552	0.3411
6	0.4803	0.4556	0.4323	0.4104	0.3898	0.3704	0.3521	0.3349	0.3186	0.3033	0.2888	0.2751
7	0.4251	0.3996	0.3759	0.3538	0.3332	0.3139	0.2959	0.2791	0.2633	0.2486	0.2348	0.2218
8	0.3762	0.3506	0.3269	0.3050	0.2848	0.2660	0.2487	0.2326	0.2176	0.2038	0.1909	0.1789
9	0.3329	0.3075	0.2843	0.2630	0.2434	0.2255	0.2090	0.1938	0.1799	0.1670	0.1552	0.1443
10	0.2946	0.2697	0.2472	0.2267	0.2080	0.1911	0.1756	0.1615	0.1486	0.1369	0.1262	0.1164
11	0.2607	0.2366	0.2149	0.1954	0.1778	0.1619	0.1476	0.1346	0.1228	0.1122	0.1026	0.0938
12	0.2307	0.2076	0.1869	0.1685	0.1520	0.1372	0.1240	0.1122	0.1015	0.0920	0.0834	0.0757
13	0.2042	0.1821	0.1625	0.1452	0.1299	0.1163	0.1042	0.0935	0.0839	0.0754	0.0678	0.0610
14	0.1807	0.1597	0.1413	0.1252	0.1110	0.0985	0.0876	0.0779	0.0693	0.0618	0.0551	0.0492
15	0.1599	0.1401	0.1229	0.1079	0.0949	0.0835	0.0736	0.0649	0.0573	0.0507	0.0448	0.0397
16	0.1415	0.1229	0.1069	0.0930	0.0811	0.0708	0.0618	0.0541	0.0474	0.0415	0.0364	0.0320
17	0.1252	0.1078	0.0929	0.0802	0.0693	0.0600	0.0520	0.0451	0.0391	0.0340	0.0296	0.0258
18	0.1108	0.0946	0.0808	0.0691	0.0592	0.0508	0.0437	0.0376	0.0323	0.0279	0.0241	0.0208
19	0.0981	0.0829	0.0703	0.0596	0.0506	0.0431	0.0367	0.0313	0.0267	0.0229	0.0196	0.0168
20	0.0868	0.0728	0.0611	0.0514	0.0433	0.0365	0.0308	0.0261	0.0221	0.0187	0.0159	0.0135
21	0.0768	0.0638	0.0531	0.0443	0.0370	0.0309	0.0259	0.0217	0.0183	0.0154	0.0129	0.0109
22	0.0680	0.0560	0.0462	0.0382	0.0316	0.0262	0.0218	0.0181	0.0151	0.0126	0.0105	0.0088
23	0.0601	0.0491	0.0402	0.0329	0.0270	0.0222	0.0183	0.0151	0.0125	0.0103	0.0086	0.0071
24	0.0532	0.0431	0.0349	0.0284	0.0231	0.0188	0.0154	0.0126	0.0103	0.0085	0.0070	0.0057
25	0.0471	0.0378	0.0304	0.0245	0.0197	0.0160	0.0129	0.0105	0.0085	0.0069	0.0057	0.0046
26	0.0417	0.0331	0.0264	0.0211	0.0169	0.0135	0.0109	0.0087	0.0070	0.0057	0.0046	0.0037
27	0.0369	0.0291	0.0230	0.0182	0.0144	0.0115	0.0091	0.0073	0.0058	0.0047	0.0037	0.0030
28	0.0326	0.0255	0.0200	0.0157	0.0123	0.0097	0.0077	0.0061	0.0048	0.0038	0.0030	0.0024
29	0.0289	0.0224	0.0174	0.0135	0.0105	0.0082	0.0064	0.0051	0.0040	0.0031	0.0025	0.0020
30	0.0256	0.0196	0.0151	0.0116	0.0090	0.0070	0.0054	0.0042	0.0033	0.0026	0.0020	0.0016
31	0.0226	0.0172	0.0131	0.0100	0.0077	0.0059	0.0046	0.0035	0.0027	0.0021	0.0016	0.0013
32	0.0200	0.0151	0.0114	0.0087	0.0066	0.0050	0.0038	0.0029	0.0022	0.0017	0.0013	0.0010
33	0.0177	0.0132	0.0099	0.0075	0.0056	0.0042	0.0032	0.0024	0.0019	0.0014	0.0011	0.0008
34	0.0157	0.0116	0.0086	0.0064	0.0048	0.0036	0.0027	0.0020	0.0015	0.0012	0.0009	0.0007
35	0.0139	0.0102	0.0075	0.0055	0.0041	0.0030	0.0023	0.0017	0.0013	0.0009	0.0007	0.0005
36	0.0123	0.0089	0.0065	0.0048	0.0035	0.0026	0.0019	0.0014	0.0010	0.0008	0.0006	0.0004
37	0.0109	0.0078	0.0057	0.0041	0.0030	0.0022	0.0016	0.0012	0.0009	0.0006	0.0005	0.0003
38	0.0096	0.0069	0.0049	0.0036	0.0026	0.0019	0.0013	0.0010	0.0007	0.0005	0.0004	0.0003
39	0.0085	0.0060	0.0043	0.0031	0.0022	0.0016	0.0011	0.0008	0.0006	0.0004	0.0003	0.0002
40	0.0075	0.0053	0.0037	0.0026	0.0019	0.0013	0.0010	0.0007	0.0005	0.0004	0.0003	0.0002