

AC425/AC505 (M) MAY 2018

UNIVERSITY OF SWAZILAND
DEPARTMENT OF ACCOUNTING
MAIN EXAMINATION PAPER MAY 2018

DEGREE/ DIPLOMA AND
YEAR OF STUDY : B. COM IV

TITLE OF PAPER : Advanced Managerial Accounting II

COURSE CODE : AC425/AC505

TOTAL MARKS : 100 MARKS

TIME ALLOWED : THREE (3) HOURS

INSTRUCTIONS

- 1 There are four (4) questions, answer all.
- 2 Begin the solution to each question on a new page.
- 3 The marks awarded for a question are indicated at the end of each question.
- 4 Show all the necessary workings.
- 5 Round off as you deem appropriate.

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

THIS PAPER IS NOT TO BE OPENED UNTIL PERMISSION HAS BEEN GRANTED BY THE INVILATOR OR SUPERVISOR.

SPECIAL REQUIREMENTS: CALCULATOR

QUESTION 1

- (a) Blue Denim Company makes blue jeans. The company controller wants to calculate the fixed and variable costs associated with electricity used in the factory. Data for the past 8 months were collected:

Month	Electricity Cost	Machine Hours
January	\$3,255	460
February	3,485	500
March	4,100	600
April	3,300	470
May	3,312	470
June	2,575	350
July	3,910	570
August	4,200	590

Required:

Using the high-low method, calculate the fixed cost of electricity, calculate the variable rate per machine hour, and construct the cost formula for total electricity cost. (16 marks)

- (b) Azizi Ltd provides the following cost data for its single product:

	\$
Direct material	10
Direct labour	20
Variable production overhead	25
Variable selling and administrative costs	<u>15</u>
Total variable product cost per unit	<u>70</u>

Fixed costs:

Manufacturing	\$100,000
Selling and administrative	50,000

The desired rate of return is 25% and the investment is \$ 810 000. The Firm has estimated that production and sales will be 7,500 units.

Calculate:

- The total cost price per unit (3 marks)
- The mark-up percentage per unit (3 marks)
- The selling price per unit (3 marks)

(Total 25 Marks)

QUESTION 2

Ready Electronics is facing a stiff competition from imported goods. Its operating income margin has been declining steadily for the past several years. The company has been forced to lower prices so that it can maintain its market share. The operating results for the last 3 years are as follows:

	Year1	Year2	Year3
Sales	\$10,000,000	\$9,500,000	\$9,000,000
Operating Income	1,200,000	1,045,000	945,000
Average Assets	15,000,000	15,000,000	15,000,000

For the coming year, Ready's President plans to install a just-in-time (JIT) purchasing and manufacturing system. She estimates that the inventories will be reduced by 70% during the first year of operation, producing 20% reduction in the average operating assets of the company, which would remain unchanged without JIT system. She also estimates that sales and operating income will be restored to year 1 levels because of simultaneous reduction in operating expenses and selling prices. Lower selling prices will allow Ready to expand market share. (Note: in your calculations round all numbers to two decimal places.)

Required:

1. Compute the ROI, margin and turnover for year 1,2 and 3 (4.5 marks)
2. Suppose that in the year 4 the sales and operating income were achieved as expected, but inventories remained at the same level as in year3. Compute the expected ROI, margin and turnover. Explain why the ROI increased over the year3 level. (7 marks)
3. Suppose that the sales and net operating income for year 4 remained the same as in year3 but inventory reductions were achieved as projected. Compute the ROI, margin and turnover. Explain why the ROI exceeded the year3 level. (6.5 marks)
4. Assume that all expectations for year 4 were realized. Compute the expected ROI, margin and turnover. Explain why the ROI increased over the year3 level. (7 marks)

(Total 25 Marks)

QUESTION 3

Green Acres Ltd has two divisions: the Components division and the Goods division. The Components division produces a part that is used by the Goods division. The cost of manufacturing the part is as follows:

Direct Materials	\$10
Direct Labor	2
Variable Overhead	3
Fixed Overhead*	<u>5</u>
Total Cost	<u>20</u>

*Based on a practical volume of 200,000 parts

Other costs incurred by the Components division are as follows:

Fixed Selling and Administrative	\$500,000
Variable Selling (per unit)	1

The part usually sells for between \$28 and \$30 in the external market. Currently, the Components division is selling it to external customers for \$29. The division is capable of producing 200,000 units of the part per year. However, because of a weak economy, only 150,000 units are expected to be sold to the external market during the coming year. The variable selling expenses are avoidable if the part is sold internally.

The Goods division has been buying the same part from an external supplier for \$28. It expects to use 50,000 units of the part during the coming year. The manager of the Goods division has offered to buy 50,000 units from the Components division for \$18 per unit.

Required:

1. Determine the minimum transfer price the Components division would accept. (2marks)
2. Determine the maximum transfer price that the manager of the Goods division would pay. (2 marks)
3. Suppose that the average operating assets of the Components division total \$10 million. Compute the Components division's ROI for the coming year, assuming that the 50,000 units the Goods division expects to use are transferred by the Components division for \$21 each (16 marks)

(Total 20 Marks)

QUESTION 4

Each of the following scenario is independent. Assume that all cash flows are after-tax cash flows.

- a. Thomas company is investing \$120,000 in a project that will yield a uniform series of cash inflows over the next 4years. (3 marks)
- b. Video repair has decided to invest in some new electronic equipment. The equipment will have a 3-year life and will produce a uniform series of cash savings. The NPV of the equipment is \$1,750, using discount rate of 8%. The IRR is 12%.
- c. A new lathe costing \$60,096 will produce savings of \$12,000 per year.
- d. The NPV of a project is \$3,927. The project has a life of 4 years and produces the following cash flows:

Year1	\$10,000	Year3	\$15,000
Year2	\$12,000	Year4	?

The cost of the project is two times the cash flow produced in year 4. The discount rate is 10%.

Required.

1. If the internal rate of return is 14% for Thomas company, how much cash inflow per year can be expected? (3 marks)
2. Determine the investment and the amount of cash savings realized each year for video Repair. (11 marks)
3. For scenario c, how many years must the Lathe last if an IRR of 18% is realized? (6 marks)
4. For scenario d, find the cost of the project and the cash flow for year 4. (10 marks)

(Total 30 Marks)

Exhibit 12B Present Value of a Single Amount*

n/i	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	12%	14%	16%	18%	20%	25%	30%
1	0.99010	0.98039	0.97087	0.96154	0.95238	0.94340	0.93458	0.92593	0.91743	0.90909	0.89286	0.87719	0.86207	0.84746	0.83333	0.80000	0.76923
2	0.98030	0.96117	0.94260	0.92456	0.90703	0.89000	0.87344	0.85734	0.84168	0.82645	0.79719	0.76947	0.74316	0.71818	0.69444	0.64000	0.59172
3	0.97059	0.94232	0.91514	0.88900	0.86384	0.83962	0.81630	0.79383	0.77218	0.75111	0.71178	0.67497	0.64066	0.60863	0.57870	0.51200	0.45517
4	0.96098	0.92385	0.88649	0.85080	0.82270	0.79209	0.76290	0.73503	0.70843	0.68311	0.63552	0.59208	0.55229	0.51579	0.48225	0.40960	0.35013
5	0.95147	0.90373	0.86251	0.82193	0.78353	0.74726	0.71299	0.68058	0.64993	0.62012	0.56743	0.51937	0.47611	0.43711	0.40188	0.32768	0.26933
6	0.94205	0.88797	0.83748	0.79031	0.74622	0.70496	0.66634	0.63017	0.59627	0.56447	0.50663	0.45559	0.41044	0.37043	0.33490	0.26214	0.20718
7	0.93272	0.87355	0.81309	0.75992	0.71068	0.66506	0.62273	0.58349	0.54703	0.51316	0.45235	0.39994	0.35383	0.31393	0.27998	0.20972	0.15937
8	0.92348	0.85349	0.78941	0.73069	0.67684	0.62741	0.58201	0.54027	0.50187	0.46661	0.40338	0.35036	0.30503	0.26604	0.23257	0.16777	0.12239
9	0.91434	0.83676	0.76642	0.70259	0.64461	0.59190	0.54393	0.50025	0.46043	0.42410	0.36061	0.30751	0.26295	0.22546	0.19387	0.13422	0.09130
10	0.90529	0.82035	0.74409	0.67356	0.61391	0.55839	0.50835	0.46319	0.42241	0.38534	0.32197	0.26974	0.22668	0.19106	0.16151	0.10737	0.07234
11	0.89632	0.80426	0.72242	0.64958	0.58468	0.52679	0.47509	0.42888	0.38753	0.35049	0.28748	0.23662	0.19542	0.16192	0.13453	0.09590	0.05530
12	0.88745	0.78889	0.70138	0.62460	0.55584	0.49697	0.44401	0.39711	0.35553	0.31853	0.25668	0.20756	0.16846	0.14322	0.12113	0.08372	0.04492
13	0.87866	0.77393	0.68095	0.60057	0.53032	0.46884	0.41496	0.36770	0.32613	0.28925	0.22917	0.18207	0.14523	0.12429	0.09443	0.05498	0.03332
14	0.86996	0.75798	0.66112	0.57746	0.50507	0.44230	0.38782	0.34046	0.29925	0.26193	0.20450	0.15911	0.12520	0.09555	0.07794	0.04496	0.02311
15	0.86135	0.74391	0.64486	0.55826	0.48102	0.41727	0.36245	0.31524	0.27451	0.23733	0.18270	0.14010	0.10793	0.08350	0.06491	0.03315	0.01794
16	0.85281	0.72954	0.62757	0.53691	0.45611	0.39365	0.33873	0.29139	0.25181	0.21453	0.16112	0.12289	0.09504	0.07478	0.05443	0.02213	0.00745
17	0.84438	0.71434	0.60802	0.51337	0.43630	0.37136	0.31657	0.27027	0.23197	0.19513	0.14464	0.10750	0.08421	0.06999	0.04557	0.02252	0.00759
18	0.83602	0.70076	0.58739	0.48853	0.41552	0.35034	0.29586	0.25023	0.21199	0.17513	0.13004	0.09456	0.07694	0.06303	0.03754	0.02107	0.00399
19	0.82774	0.68643	0.57009	0.47164	0.39573	0.33051	0.27651	0.23171	0.19449	0.15811	0.11611	0.08395	0.07139	0.05809	0.03111	0.01447	0.00269
20	0.81954	0.67297	0.55355	0.45439	0.37589	0.31160	0.25842	0.21455	0.17933	0.14464	0.10367	0.07276	0.06139	0.05065	0.02619	0.01153	0.00183
21	0.81141	0.65979	0.53755	0.43893	0.35694	0.29216	0.24151	0.19866	0.16370	0.12913	0.09256	0.06333	0.04430	0.03594	0.02174	0.00922	0.00146
22	0.80340	0.64684	0.52139	0.42196	0.34185	0.27751	0.22871	0.18394	0.14910	0.11483	0.08264	0.05499	0.03819	0.03202	0.01911	0.00735	0.00111
23	0.79544	0.63416	0.50559	0.40573	0.32557	0.26150	0.21095	0.17032	0.13573	0.10163	0.07379	0.04911	0.03292	0.02822	0.01519	0.00390	0.00083
24	0.78757	0.62170	0.49193	0.39112	0.31007	0.24698	0.19715	0.15770	0.12340	0.08940	0.06565	0.04339	0.02833	0.02463	0.01229	0.00312	0.00066
25	0.77977	0.60951	0.47751	0.37552	0.29550	0.23300	0.18425	0.14602	0.11157	0.07953	0.05962	0.03779	0.02447	0.02159	0.01044	0.00278	0.00051
26	0.77203	0.59758	0.46359	0.36069	0.28124	0.21981	0.17220	0.13520	0.10099	0.07157	0.05352	0.03315	0.02109	0.01852	0.00844	0.00250	0.00044
27	0.76441	0.58588	0.45019	0.34692	0.26735	0.20737	0.16093	0.12519	0.09161	0.06513	0.04889	0.02996	0.01813	0.01597	0.00731	0.00212	0.00037
28	0.75681	0.57437	0.43708	0.33343	0.25529	0.19563	0.15040	0.11591	0.08575	0.06214	0.04707	0.02855	0.01667	0.01461	0.00667	0.00193	0.00030
29	0.74931	0.56301	0.42433	0.32065	0.24293	0.18456	0.14036	0.10733	0.08125	0.06014	0.04378	0.02623	0.01551	0.01351	0.00563	0.00172	0.00025
30	0.74191	0.55181	0.41321	0.30852	0.23133	0.17411	0.13131	0.09938	0.07537	0.05571	0.03853	0.02351	0.01365	0.01165	0.00471	0.00154	0.00020

*Present Value of a Single Amount

Present Value of an Annuity

1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	12%	14%	16%	18%	20%	25%	30%
1	0.99010	0.98039	0.97087	0.96154	0.95239	0.94340	0.93458	0.92593	0.91743	0.90909	0.89286	0.87719	0.86207	0.84746	0.83333	0.80000
2	1.97040	1.94560	1.92147	1.89797	1.87509	1.85281	1.83103	1.80974	1.78893	1.76860	1.74873	1.72931	1.71033	1.69178	1.67356	1.64000
3	2.94099	2.89188	2.84381	2.79667	2.75045	2.70514	2.66073	2.61721	2.57458	2.53283	2.49195	2.45193	2.41276	2.37443	2.33693	2.29000
4	3.90197	3.80771	3.71510	3.62403	3.53449	3.44647	3.36086	3.27765	3.19584	3.11542	3.03640	2.95877	2.88252	2.80764	2.73403	2.66000
5	4.85443	4.71146	4.57077	4.43234	4.29606	4.16192	4.02991	3.89992	3.77194	3.64596	3.52199	3.40001	3.28001	3.16200	3.04600	2.93000
6	5.80843	5.60143	5.40018	5.20464	5.01481	4.83069	4.65228	4.47957	4.31156	4.14825	3.98964	3.83573	3.68651	3.54198	3.40000	3.26000
7	6.76403	6.47133	6.23018	6.00064	5.78281	5.57670	5.38231	5.19954	5.02739	4.86576	4.71465	4.57404	4.44392	4.32429	4.21506	4.10000
8	7.72123	7.35243	7.05018	6.76464	6.49591	6.24408	6.00915	5.79012	5.58699	5.39876	5.22553	5.06730	4.92407	4.79584	4.68261	4.57000
9	8.68003	8.23243	7.88018	7.54464	7.22591	6.92408	6.63915	6.37012	6.11699	5.87876	5.65553	5.44730	5.25407	5.07584	4.91261	4.75000
10	9.64043	9.11243	8.70018	8.30464	7.92591	7.56408	7.21915	6.89012	6.57699	6.27876	5.99553	5.72730	5.47407	5.23584	5.01261	4.79000
11	10.60243	10.09243	9.69018	9.30464	8.93591	8.58408	8.24915	7.93012	7.62699	7.33876	7.05553	6.78730	6.53407	6.29584	6.07261	5.85000
12	11.56503	11.07243	10.68018	10.29464	9.92591	9.57408	9.23915	8.92012	8.61699	8.32876	8.04553	7.77730	7.52407	7.28584	7.06261	6.84000
13	12.52843	12.05243	11.67018	11.29464	10.93591	10.59408	10.26915	9.96012	9.66699	9.38876	9.11553	8.85730	8.61407	8.38584	8.17261	7.96000
14	13.49243	13.03243	12.67018	12.31464	11.97591	11.65408	11.34915	11.06012	10.78699	10.52876	10.28553	10.05730	9.84407	9.64584	9.46261	9.28000
15	14.45703	14.01243	13.67018	13.33464	13.01591	12.71408	12.42915	12.16012	11.90699	11.66876	11.44553	11.23730	11.04407	10.86584	10.70261	10.54000
16	15.42243	15.00243	14.68018	14.36464	14.06591	13.78408	13.51915	13.27012	13.03699	12.81876	12.61553	12.42730	12.25407	12.09584	11.95261	11.81000
17	16.38843	16.00243	15.70018	15.40464	15.12591	14.85408	14.59915	14.36012	14.13699	13.92876	13.73553	13.55730	13.39407	13.24584	13.11261	12.98000
18	17.35503	17.00243	16.72018	16.44464	16.18591	15.94408	15.71915	15.51012	15.31699	15.13876	14.97553	14.82730	14.68407	14.55584	14.44261	14.33000
19	18.32243	18.00243	17.74018	17.47464	17.22591	17.00408	16.79915	16.61012	16.43699	16.27876	16.13553	16.00730	15.89407	15.79584	15.71261	15.63000
20	19.29043	19.00243	18.76018	18.50464	18.26591	18.04408	17.83915	17.65012	17.47699	17.31876	17.17553	17.04730	16.93407	16.83584	16.75261	16.67000
21	20.25843	20.00243	19.78018	19.53464	19.30591	19.09408	18.89915	18.72012	18.55699	18.40876	18.27553	18.15730	18.05407	17.96584	17.88261	17.80000
22	21.22703	21.00243	20.80018	20.57464	20.36591	20.17408	20.00915	19.86012	19.72699	19.60876	19.50553	19.41730	19.34407	19.28584	19.23261	19.18000
23	22.19643	22.00243	21.82018	21.60464	21.40591	21.22408	21.05915	20.91012	20.77699	20.65876	20.55553	20.46730	20.39407	20.33584	20.28261	20.23000
24	23.16643	23.00243	22.86018	22.65464	22.46591	22.29408	22.13915	22.00012	21.87699	21.76876	21.67553	21.59730	21.53407	21.48584	21.44261	21.40000
25	24.13743	24.00243	23.86018	23.66464	23.48591	23.32408	23.17915	23.05012	22.93699	22.83876	22.75553	22.68730	22.63407	22.59584	22.56261	22.53000
26	25.10943	25.00243	24.86018	24.67464	24.50591	24.35408	24.21915	24.10012	24.00699	23.92876	23.85553	23.79730	23.75407	23.72584	23.70261	23.68000
27	26.08243	26.00243	25.86018	25.68464	25.52591	25.38408	25.25915	25.15012	25.05699	24.97876	24.91553	24.86730	24.83407	24.81584	24.80261	24.79000
28	27.05743	27.00243	26.86018	26.69464	26.54591	26.41408	26.29915	26.20012	26.11699	26.04876	26.00553	25.97730	25.95407	25.94584	25.94261	25.94000
29	28.03443	28.00243	27.86018	27.70464	27.56591	27.44408	27.33915	27.25012	27.17699	27.11876	27.08553	27.06730	27.05407	27.05584	27.06261	27.07000
30	29.01343	29.00243	28.86018	28.71464	28.58591	28.47408	28.37915	28.29012	28.21699	28.15876	28.12553	28.10730	28.10407	28.11584	28.12261	28.13000

Source: Table A-1, Appendix A.