

University of Eswatini
Department of Accounting and Finance
Main Exam Paper - Semester - II

Programme of Study : Bachelor of Commerce
Year of Study : Year Four / Level Six
Title of Paper : Advanced Management Accounting II
Course Code : ACF414/AC425/AC505
Time Allowed : **3 Hours.**

- Instructions:
1. 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 & Area under the Normal Distribution Curve**

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

Question 1

Coca cola Company in Matsapha is producing a concentrate that is exported across Africa and the Middle East. Due to the shutdown of its plant in Nigeria, Coca Cola (Eswatini) is expected to supply new markets such as Western Europe. A New equipment, the boiler is being planned for construction within THREE months, and you have been requested by the CEO to help the Project manager in planning for this project.

The activities, and their estimated completion times (in weeks) and immediate predecessor activities are listed in the accompanying table.

Activity	Predecessor activity	Estimated duration (in weeks)		
		Optimistic (a)	Most likely (m)	Pessimistic (b)
A	--	1	1	7
B	--	2	2	8
C	B	1	2	3
D	A	2	9	4
E	C,D	3	4	11
F	B	2	5	8
G	E,F	3	6	15

Required

- (i) Determine the expected time and variance for each activity. (8 marks)
- (ii) Draw the network diagram. (5 marks)
- (iii) The Project manager will like to determine the earliest and the latest start times for each activity and also slack for each activity. (5 marks)
- (iv) He also would like you to determine the critical path for the entire project as well as expected completion time for the project. (3 marks)
- (v) What is the probability that the project will be completed in 20 weeks? (5 marks)
- (vi) There are two main aims of project crashing. Identify and explain both of them. (4 marks)

[Total marks: 30]

Question 2

McMillan Production Inc. is a large paper production and publishing company located in Eswatini. The company has a business division Paper Production, which produces plain papers famously called "Typek".

McMillan Book Publishers currently purchase its plain paper (Typek) for book production from Sappi Usuthu, and management is considering sourcing the plain paper from within the company, i.e. McMillan Paper Production. The plain papers are of the same quality and of standard size. The managers of both divisions are interested in having intra-company transactions as it will be in the best interest of both divisions as well as the company as a whole.

The production capacity for the Paper Production division is 80 000 packs per month and sells to the outside vendor at E45.00 per pack. The fixed cost incurred in the manufacture of typek packs per month is E210 000.

The Book Publishers division needs 20 000 packs of Typek and it currently pays E40 per pack to the outside vendor, Sappi Usuthu. The variable cost to produce one pack of Typek is E20.

Required

- (a) Determine the acceptable range of transfer prices if the Paper Production sells 65 000 packs of Typek to outside vendors. (7 marks)
- (b) If Book Publishers proposes buying Typek packs at E36 from Paper Production, would the management of Paper Production be interested in the proposal? (2 marks)
- (c) Book Publishers proposes buying Typek packs at E36 from Paper Production. If Paper Production sells 75 000 packs of Typek per month, will the management of Paper Production still be interested in Book Publishers' proposal? (7 marks)
- (d) State four main objectives that should be considered with a transfer price? (4 marks)

[Total marks: 20]

Question 3

Cash Build is the largest retailer of building material in the Kingdom of Eswatini, with several divisions in the Kingdom. The company has its head office in Ezulwini.

The Chief Operation Officer (COO) at Head Office will be retiring at the end of the 2021/2022 financial year, and the CEO has told divisional managers that he will be using a fair method of promoting one of them to the position of COO. Historically, the company has used ROI as a measure of performance for each division with a target of 10%. A manager with the highest ROI will be at an advantage of being considered by the CEO, however the CEO is open to other performance measures, ie. Residual income. Two leading managers are being considered, that of Mbabane and Manzini division.

The draft operating statement for the year, prepared by the company's Assistant Accountant, is shown:

	Manzini Division	Mbabane Division
	E'000	E'000
Sales revenue	4,500	5,100
Controllable profits	1,200	1,400
Less apportionment of Head Office costs	(150)	(150)
Net profit	<u>900</u>	<u>1 100</u>
Opening divisional controllable net assets	<u>12,000</u>	<u>13,000</u>
Closing divisional controllable net assets	9,000	16,000

The closing balance for accounts payables for Manzini division has increased by 60% as its divisional manager wanted to increase the division's cash reserves, compare to the previous year's figure. The Mbabane division on the other hand has actually reduced its accounts payables balance by 20% compared to the previous year's balance. Mbabane division has expanded the shop with new shelving worth E2.5million installed to accommodate plumbing and electrical section. It has also acquired new accounting system for E0.5million to improve its inventory management system.

Required

- (i) Calculate the return on investment (ROI) for each of the two divisions of Cash Build. (6 marks)
- (ii) Briefly discuss the performance of the two divisions for the year, including the main reasons why their performance varied from each other. Based on the ROI measure adopted by management, which of the two will be promoted to the position of COO. Explain the impact the difference in ROI could have on the behaviour of the manager of the worst performing division. (11 marks)
- (iii) Explain how switching to residual income (RI) to measure divisional performance can limit the dysfunctional behaviour in (ii) above. (3 marks)

[Total marks: 20]

Question 4

(a)

Sealy is a leading American company manufacturing mattress since 1881. It is now struggling to maintain its world market share and is now considering major restructuring to increase productivity by 10%. There are different processes involved in mattress production.

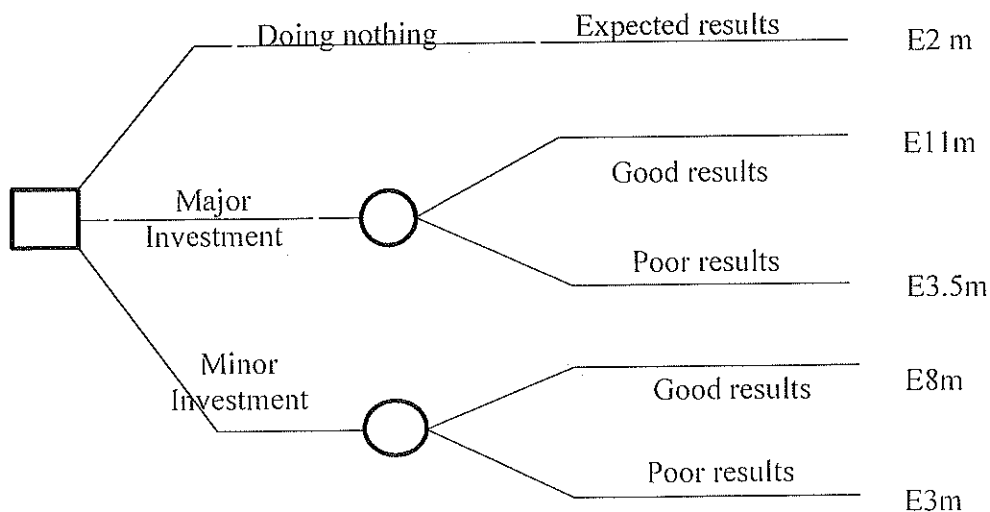
Discuss how the theory of constraints can be used to achieve Sealy's objective of increasing productivity. [15 marks]

(b)

You are the management accountant of Sports World plc, a local company involved in selling sportswear to customers in its two divisions, Manzini and Mbabane in the Kingdom of Eswatini. The Manzini division is not performing well due to several factors and management is considering the following possible actions in the fourth coming period to boost its sales:

- (1) Do nothing
- (2) Major Investment in advertising at a cost of E7 million.
- (3) Minor investment in advertising at a cost of E4 million.

The investments are expected to have variable results and the probability of good results after a major upgrade is 0.65, whereas the probability of good results after a minor upgrade is 0.8. The company is risk neutral and has prepared the following decision tree.



Required

Advise the management on the best decision to make. Show clear calculations.

(5 marks)

(c)

Alpha Apparels (Pty) Ltd plans to invest E2 000 000 immediately to purchase sewing machines for the production of face-masks and the project is expected to have a life of three years. The machines are expected to be disposed at no scrap value at the end of the project. Ignore working capital.

Production and sales for this project is expected to be 100,000 units per year. Each unit can be sold for E15 per unit and will incur the following costs (all this are year 1 figures):

Material cost	E7.00
Direct labour	E2.00
Variable overhead cost	E2.00
Fixed overhead (allocated)	E1.50
Distribution etc.	E0.50

Shareholders of ABC Co requires a nominal return of 11% which it uses as a discount rate in investment appraisal. The company pays profit tax in the same year at an annual rate of 28% per year. Tax allowable depreciation of the full value (straight-line method) of investment is allowable over the life of the project (3 years), and inflation should be 5% for all sales and costs per annum.

Required.

Calculate the net present value of investing in the new project and advise whether the investment is financially acceptable. **[10 marks]**

[Total marks: 30]

*****END OF MAIN EXAM PAPER *****

Table of the standard normal distribution values ($z \leq 0$)

$-z$	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
-0.0	0.50000	0.49601	0.49202	0.48803	0.48405	0.48006	0.47608	0.47210	0.46812	0.46414
-0.1	0.46017	0.45621	0.45224	0.44828	0.44433	0.44038	0.43644	0.43251	0.42858	0.42466
-0.2	0.42074	0.41683	0.41294	0.40905	0.40517	0.40129	0.39743	0.39358	0.38974	0.38591
-0.3	0.38209	0.37828	0.37448	0.37070	0.36693	0.36317	0.35942	0.35569	0.35197	0.34827
-0.4	0.34458	0.34090	0.33724	0.33360	0.32997	0.32636	0.32276	0.31918	0.31561	0.31207
-0.5	0.30854	0.30503	0.30153	0.29806	0.29460	0.29116	0.28774	0.28434	0.28096	0.27760
-0.6	0.27425	0.27093	0.26763	0.26435	0.26109	0.25785	0.25463	0.25143	0.24825	0.24510
-0.7	0.24196	0.23885	0.23576	0.23270	0.22965	0.22663	0.22363	0.22065	0.21770	0.21476
-0.8	0.21186	0.20897	0.20611	0.20327	0.20045	0.19766	0.19489	0.19215	0.18943	0.18673
-0.9	0.18406	0.18141	0.17879	0.17619	0.17361	0.17106	0.16853	0.16602	0.16354	0.16109
-1.0	0.15866	0.15625	0.15386	0.15151	0.14917	0.14686	0.14457	0.14231	0.14007	0.13786
-1.1	0.13567	0.13350	0.13136	0.12924	0.12714	0.12507	0.12302	0.12100	0.11900	0.11702
-1.2	0.11507	0.11314	0.11123	0.10935	0.10749	0.10565	0.10384	0.10204	0.10027	0.09853
-1.3	0.09680	0.09510	0.09342	0.09176	0.09012	0.08851	0.08692	0.08534	0.08379	0.08226
-1.4	0.08076	0.07927	0.07780	0.07636	0.07493	0.07353	0.07215	0.07078	0.06944	0.06811
-1.5	0.06681	0.06552	0.06426	0.06301	0.06178	0.06057	0.05938	0.05821	0.05705	0.05592
-1.6	0.05480	0.05370	0.05262	0.05155	0.05050	0.04947	0.04846	0.04746	0.04648	0.04551
-1.7	0.04457	0.04363	0.04272	0.04182	0.04093	0.04006	0.03920	0.03836	0.03754	0.03673
-1.8	0.03593	0.03515	0.03438	0.03363	0.03288	0.03216	0.03144	0.03074	0.03005	0.02938
-1.9	0.02872	0.02807	0.02743	0.02680	0.02619	0.02559	0.02500	0.02442	0.02385	0.02330
-2.0	0.02275	0.02222	0.02169	0.02118	0.02068	0.02018	0.01970	0.01923	0.01876	0.01831
-2.1	0.01786	0.01743	0.01700	0.01659	0.01618	0.01578	0.01539	0.01500	0.01463	0.01426
-2.2	0.01390	0.01355	0.01321	0.01287	0.01255	0.01222	0.01191	0.01160	0.01130	0.01101
-2.3	0.01072	0.01044	0.01017	0.00990	0.00964	0.00939	0.00914	0.00889	0.00866	0.00842
-2.4	0.00820	0.00798	0.00776	0.00755	0.00734	0.00714	0.00695	0.00676	0.00657	0.00639
-2.5	0.00621	0.00604	0.00587	0.00570	0.00554	0.00539	0.00523	0.00509	0.00494	0.00480
-2.6	0.00466	0.00453	0.00440	0.00427	0.00415	0.00403	0.00391	0.00379	0.00368	0.00357
-2.7	0.00347	0.00336	0.00326	0.00317	0.00307	0.00298	0.00289	0.00280	0.00272	0.00264
-2.8	0.00256	0.00248	0.00240	0.00233	0.00226	0.00219	0.00212	0.00205	0.00199	0.00193
-2.9	0.00187	0.00181	0.00175	0.00170	0.00164	0.00159	0.00154	0.00149	0.00144	0.00140
-3.0	0.00135	0.00131	0.00126	0.00122	0.00118	0.00114	0.00111	0.00107	0.00104	0.00100
-3.1	0.00097	0.00094	0.00090	0.00087	0.00085	0.00082	0.00079	0.00076	0.00074	0.00071
-3.2	0.00069	0.00066	0.00064	0.00062	0.00060	0.00058	0.00056	0.00054	0.00052	0.00050
-3.3	0.00048	0.00047	0.00045	0.00043	0.00042	0.00040	0.00039	0.00038	0.00036	0.00035
-3.4	0.00034	0.00033	0.00031	0.00030	0.00029	0.00028	0.00027	0.00026	0.00025	0.00024
-3.5	0.00023	0.00022	0.00022	0.00021	0.00020	0.00019	0.00019	0.00018	0.00017	0.00017

Table of the standard normal distribution values ($z \geq 0$)

z	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.50000	0.50399	0.50798	0.51197	0.51595	0.51994	0.52392	0.52790	0.53188	0.53586
0.1	0.53983	0.54380	0.54776	0.55172	0.55567	0.55962	0.56356	0.56749	0.57142	0.57535
0.2	0.57926	0.58317	0.58706	0.59095	0.59483	0.59871	0.60257	0.60642	0.61026	0.61409
0.3	0.61791	0.62172	0.62552	0.62930	0.63307	0.63683	0.64058	0.64431	0.64803	0.65173
0.4	0.65542	0.65910	0.66276	0.66640	0.67003	0.67364	0.67724	0.68082	0.68439	0.68793
0.5	0.69146	0.69497	0.69847	0.70194	0.70540	0.70884	0.71226	0.71566	0.71904	0.72240
0.6	0.72575	0.72907	0.73237	0.73565	0.73891	0.74215	0.74537	0.74857	0.75175	0.75490
0.7	0.75804	0.76115	0.76424	0.76730	0.77035	0.77337	0.77637	0.77935	0.78230	0.78524
0.8	0.78814	0.79103	0.79389	0.79673	0.79955	0.80234	0.80511	0.80785	0.81057	0.81327
0.9	0.81594	0.81859	0.82121	0.82381	0.82639	0.82894	0.83147	0.83398	0.83646	0.83891
1.0	0.84134	0.84375	0.84614	0.84849	0.85083	0.85314	0.85543	0.85769	0.85993	0.86214
1.1	0.86433	0.86650	0.86864	0.87076	0.87286	0.87493	0.87698	0.87900	0.88100	0.88298
1.2	0.88493	0.88686	0.88877	0.89065	0.89251	0.89435	0.89617	0.89796	0.89973	0.90147
1.3	0.90320	0.90490	0.90658	0.90824	0.90988	0.91149	0.91308	0.91466	0.91621	0.91774
1.4	0.91924	0.92073	0.92220	0.92364	0.92507	0.92647	0.92785	0.92922	0.93056	0.93189
1.5	0.93319	0.93448	0.93574	0.93699	0.93822	0.93943	0.94062	0.94179	0.94295	0.94408
1.6	0.94520	0.94630	0.94738	0.94845	0.94950	0.95053	0.95154	0.95254	0.95352	0.95449
1.7	0.95543	0.95637	0.95728	0.95818	0.95907	0.95994	0.96080	0.96164	0.96246	0.96327
1.8	0.96407	0.96485	0.96562	0.96638	0.96712	0.96784	0.96856	0.96926	0.96995	0.97062
1.9	0.97128	0.97193	0.97257	0.97320	0.97381	0.97441	0.97500	0.97558	0.97615	0.97670
2.0	0.97725	0.97778	0.97831	0.97882	0.97932	0.97982	0.98030	0.98077	0.98124	0.98169
2.1	0.98214	0.98257	0.98300	0.98341	0.98382	0.98422	0.98461	0.98500	0.98537	0.98574
2.2	0.98610	0.98645	0.98679	0.98713	0.98745	0.98778	0.98809	0.98840	0.98870	0.98899
2.3	0.98928	0.98956	0.98983	0.99010	0.99036	0.99061	0.99086	0.99111	0.99134	0.99158
2.4	0.99180	0.99202	0.99224	0.99245	0.99266	0.99286	0.99305	0.99324	0.99343	0.99361
2.5	0.99379	0.99396	0.99413	0.99430	0.99446	0.99461	0.99477	0.99492	0.99506	0.99520
2.6	0.99534	0.99547	0.99560	0.99573	0.99585	0.99598	0.99609	0.99621	0.99632	0.99643
2.7	0.99653	0.99664	0.99674	0.99683	0.99693	0.99702	0.99711	0.99720	0.99728	0.99736
2.8	0.99744	0.99752	0.99760	0.99767	0.99774	0.99781	0.99788	0.99795	0.99801	0.99807
2.9	0.99813	0.99819	0.99825	0.99831	0.99836	0.99841	0.99846	0.99851	0.99856	0.99861
3.0	0.99865	0.99869	0.99874	0.99878	0.99882	0.99886	0.99889	0.99893	0.99896	0.99900
3.1	0.99903	0.99906	0.99910	0.99913	0.99916	0.99918	0.99921	0.99924	0.99926	0.99929
3.2	0.99931	0.99934	0.99936	0.99938	0.99940	0.99942	0.99944	0.99946	0.99948	0.99950
3.3	0.99952	0.99953	0.99955	0.99957	0.99958	0.99960	0.99961	0.99962	0.99964	0.99965
3.4	0.99966	0.99968	0.99969	0.99970	0.99971	0.99972	0.99973	0.99974	0.99975	0.99976
3.5	0.99977	0.99978	0.99978	0.99979	0.99980	0.99981	0.99981	0.99982	0.99983	0.99983