

THE PUBLIC ACCOUNTANTS EXAMINATIONS BOARD

A Committee of the Council of ICPAU

CPA(U) EXAMINATIONS

LEVEL THREE

MANAGEMENT DECISION AND CONTROL - PAPER 12

THURSDAY, 21 JUNE 2007

INSTRUCTIONS TO CANDIDATES:

1. Time allowed: **3 hours**
2. Section **A** has **two** compulsory questions. Question **one** carries 30 marks and question **two** carries 10 marks.
3. Section **B** has **four** questions and only **three** questions are to be attempted. Each question carries 20 marks.
4. Tables are provided on page 7.
5. Please read further instructions on the answer book.

SECTION A

Question 1

Muno Transporters Ltd, a new company, intends to introduce modern executive buses on the Kampala - Arua road. It has two options to choose from; to procure a Scania bus or a Ford bus.

Both buses have useful lives of two years. Each bus costs Shs 450 million when brand new and their estimated maintenance costs are the same. There is also no difference in the cash flows for the two buses. However, the Ford bus has no resale value while the one-year used Scania bus has a resale value of Shs 225 million provided that it has been well maintained and driven for not more than one year.

Research results revealed that net cash flows from bus services vary due to many factors including availability of customers, competition, weather, road conditions, political stability, etc.

The likelihood that business will be successful in any given year (bus filling up all the time) is 25%; the likelihood that the business will be moderate (bus filling up most of the time) is 50%; and the likelihood that the business will be poor (bus not filling up) is 25%.

In the first year of business, the company is likely to realise a net cash flow of Shs 450 million if the business is successful; Shs 300 million if the business is moderate and a net cash flow of Shs 150 million if the business is poor.

The second year of business will depend on the outcome of Year 1. If:

- (i) Year 1 is successful, success in Year 2 will yield Shs 525 million, moderate will yield Shs 450 million and poor will yield Shs 300 million respectively.
- (ii) Year 1 is moderate, success in Year 2 will yield Shs 450 million, moderate will yield Shs 300 million and poor will yield Shs 50 million.
- (iii) Year 1 is poor, success in Year 2 will yield Shs 300 million, moderate will yield Shs 150 million and poor will not yield any net cash flow, but the company will make enough money to cover all its operating costs such as fuel, repairs, salaries etc.

The cost of capital is 10% per annum.

Required

- (a) Draw the decision tree to show the outcomes of all the likely options.
(8 marks)
- (b) Advise whether, based on the expected outcomes, the Ford bus is viable.
(Use Net Present Value [NPV] as the basis of your advice).
(8 marks)

- (c) Assuming the company decides to purchase a Scania bus, advise whether it would be wise to keep the bus after Year 1 or sale it (i.e. during Year 2).
(8 marks)

- (d) Compute the NPV of the Scania bus assuming that it was sold during Year 2.

(6 marks)

(Total 30 marks)

Question 2

As the Financial Controller of your organisation, write a brief report to the Chief Executive Officer explaining what the following terms mean and how they can be applied:

- (a) Exceptional reporting. (2 marks)
(b) Activity based budgeting. (4 marks)
(c) Target costing. (4 marks)

(Total 10 marks)

SECTION C

Question 3

Excel Electricals Ltd is a local company that manufactures 'Uninterrupted Power Supply Units' commonly abbreviated as UPS.

The company has production and logistical capacity to produce 2,400 units per month. Any production beyond their optimal capacity will involve expanding the production capacity and other logistics such as storage facilities, which will increase the current fixed costs by 50%. The current factory can only be expanded up to 3,000 units per month beyond which the company would have to build a completely new factory.

The company has contracted local agents and distributors who purchase each unit at Shs 200,000.

Currently the company is producing and selling an average of 2,000 units of UPSs per month, implying there is still some spare capacity.

The monthly cost estimates of Excel Electricals Ltd based on optimal production capacity of 2,400 units are as follows:

	Shs million
Direct Labour	48
Direct material	144
Variable overheads	48
Fixed overheads	96

The Marketing Manager of Excel Electricals Ltd has convinced the Board that they should start expanding to the regional market. He is persuading them to accept the following offers:

- (i) A dealer in Rwanda will need 500 units per month at a price of Shs 180,000 per unit. He needs a discount of Shs 20,000 per unit to assist him meet other related costs.
- (ii) A dealer in DR Congo will need 300 units per month, and is willing to pay Shs 160,000 per unit. He argues that DR Congo is far, thus a bigger discount is needed.

The Board has requested you as the Finance Director to advise them on whether they should accept both orders, or only one of them based on your recommendations.

Required

- (a) Basing on computations (quantitative factors only), advise whether the order for an annual sale of 6,000 units to Rwanda should be accepted.
(8 marks)
 - (b) Basing on computations, advise whether the annual supply of 3,600 units to DR Congo should be accepted.
(6 marks)
 - (c) Basing on qualitative factors (non-computational), give reasons in support for and against the suggestions made by the Marketing Manager.
(6 marks)
- (Total 20 marks)**

Question 4

- (a) Most companies use two methods of setting prices for products: cost-plus pricing and market-based pricing.

Required:

- (i) Explain the terms cost-plus pricing and market-based pricing.
(4 marks)
 - (ii) Give **three** disadvantages of cost-plus pricing.
(3 marks)
 - (iii) Give **three** disadvantages of market-based pricing.
(3 marks)
- (b) A company manufactures a product which has a selling price of Shs 8,000 per unit. Fixed costs incurred are Shs 20 million. Sales demand and unit variable costs are uncertain, but the following forecasts have been prepared for the year 2008:

Demand (in units)	Probability	Variable cost per unit	Probability
50,000	0.3	200	0.6
70,000	0.5	400	0.4
40,000	0.2		

The unit variable costs are unaffected by the sales demand.

Required:

Calculate the expected profit for this product.

(10 marks)
(Total 20 marks)

Question 5

AGRIC Ltd currently purchases two types of drugs, **AB** and **AC**. The budgeted costs for 2007 were projected as follows:

	Shs million
Direct materials	90
Direct labour	22
Variable overhead	44
Fixed overheads	50

The products details for 2007 were as follows:

Product	AB	AC
Forecast selling price per unit (Shs)	600	900
Forecast sales volume (units million)	0.5	0.2

Each unit of **AC** requires twice the amount of materials as required to produce **AB** and three times as much as labour. Variable overheads are always absorbed in proportion to labour.

In 2008, management plans to launch a new superior drug **AD**. **AD** is expected to sell at Shs 1,200. The direct unit costs of materials is estimated at Shs 300 while labour will cost Shs 200 per unit. Fixed costs are set to increase by Shs 10 million per year, and variable overheads are absorbed at thrice the rate of labour.

The forecast sales volumes for 2008 are:

Drug	Units (million)
AB	0.6
AC	0.3
AD	0.3

Required:

- (a) Calculate the projected profit for 2007 using marginal costing. (5 marks)
 - (b) Compute the projected profit for 2008 using marginal costing. State the impact of introducing a superior drug **AD** on profitability for 2008. (10 marks)
 - (c) Explain why budgeting is subject to uncertainty and give **three** ways in which this uncertainty can be overcome. (5 marks)
- (Total 20 marks)**

Question 6

- (a) Define the term profitability index. (2 marks)
- (b) AYA Ltd is planning to invest in two projects. The details are as follows:

	Post-Tax Cash Flows (Shs million)				
	Year 0	Year 1	Year 2	Year 3	Year 4
Investment R	(300)	250	200	150	400
Investment S	(200)	120	250	180	180

The company's cost of capital is 10%.

Required:

- (i) Calculate NPV of each project. (6 marks)
 - (ii) Calculate profitability index for each investment and comment on the results. (4 marks)
 - (iii) Explain how profitability index may be used when a company faces a problem of capital rationing in any single accounting period. (3 marks)
 - (iv) Explain the limitations of using a profitability index in a situation where there is capital rationing. (5 marks)
- (Total 20 marks)**

Table 1: PVIF- Present Value of Shs 1 Due at the End of n Periods

Period	9%	10%	11%	12%	13%	14%	15%	16%	18%	20%
1	0.917	0.909	0.901	0.893	0.885	0.877	0.870	0.862	0.847	0.833
2	0.842	0.826	0.812	0.797	0.783	0.769	0.756	0.743	0.718	0.694
3	0.772	0.751	0.731	0.712	0.693	0.675	0.658	0.641	0.609	0.579
4	0.708	0.683	0.659	0.636	0.613	0.592	0.572	0.552	0.516	0.482
5	0.650	0.621	0.593	0.567	0.543	0.519	0.497	0.476	0.437	0.402
6	0.596	0.564	0.535	0.507	0.480	0.456	0.432	0.410	0.370	0.335
7	0.547	0.513	0.482	0.452	0.425	0.400	0.376	0.354	0.314	0.279
8	0.502	0.467	0.434	0.404	0.376	0.351	0.327	0.305	0.266	0.233
9	0.460	0.424	0.391	0.361	0.333	0.308	0.284	0.263	0.225	0.194
10	0.422	0.386	0.352	0.322	0.295	0.270	0.247	0.227	0.191	0.162
11	0.388	0.350	0.317	0.287	0.261	0.237	0.215	0.195	0.162	0.135
12	0.356	0.319	0.286	0.257	0.231	0.208	0.187	0.168	0.137	0.112
13	0.326	0.290	0.258	0.229	0.204	0.182	0.163	0.145	0.116	0.093
14	0.299	0.263	0.232	0.205	0.181	0.160	0.141	0.125	0.099	0.078
15	0.275	0.239	0.209	0.183	0.160	0.140	0.123	0.108	0.084	0.065

TABLE 2: PVAF - Present Value of an Annuity of Shs 1 per Period for n Periods

Period	9%	10%	11%	12%	13%	14%	15%	16%	18%	20%
1	0.917	0.909	0.901	0.893	0.885	0.877	0.870	0.862	0.847	0.833
2	1.759	1.736	1.713	1.690	1.668	1.647	1.626	1.605	1.566	1.528
3	2.531	2.487	2.444	2.402	2.361	2.322	2.283	2.246	2.174	2.106
4	3.240	3.170	3.102	3.037	2.974	2.914	2.855	2.798	2.690	2.589
5	3.890	3.791	3.696	3.605	3.517	3.433	3.352	3.274	3.127	2.991
6	4.486	4.355	4.231	4.111	3.998	3.889	3.784	3.685	3.498	3.326
7	5.033	4.868	4.712	4.564	4.423	4.288	4.160	4.039	3.812	3.605
8	5.535	5.335	5.146	4.968	4.799	4.639	4.487	4.344	4.078	3.837
9	5.995	5.759	5.537	5.328	5.132	4.946	4.772	4.607	4.303	4.031
10	6.418	6.145	5.889	5.650	5.426	5.216	5.019	4.833	4.494	4.192
11	6.805	6.495	6.207	5.938	5.687	5.453	5.234	5.029	4.656	4.327
12	7.161	6.814	6.492	6.194	5.918	5.660	5.421	5.197	4.793	4.439
13	7.487	7.103	6.750	6.424	6.122	5.842	5.583	5.342	4.910	4.533
14	7.786	7.367	6.982	6.628	6.302	6.002	5.724	5.468	5.008	4.611
15	8.061	7.606	7.191	6.811	6.462	6.142	5.847	5.575	5.092	4.675