

**Institute of Certified Management Accountants of Sri Lanka****Managerial Level
November 2016 Examination**

Examination Date : 26th November 2016 **Number of Pages :** 06
Examination Time: 9.30 a.m. – 12.30 p.m. **Number of Questions:** 05

Instructions to candidates:

1. Time allowed is **three (3) hours**.
2. Total: **100 Marks**.
3. Answer **all** questions in Part I and any **three (3)** questions from Part II.
4. The answers should be in **English Language**.

<u>Subject</u>	<u>Subject Code</u>
Integrative Management Accounting	(IMA / ML 1 - 301)

PART I**Question No. 01 (40 Marks)**

CCC plc produces two subassemblies AB -63 and AC-67, used in manufacturing motorcycles. The company is currently using an absorption costing system that applies overhead based on direct-labor hours. The budget for the current year ending 30th September 2016 is as follows.

**CCC PLC
Budgeted Statement of Operating Margin for 2015/2016**

	AB -63	AC-67	Total
Sales in units	5,000	5,000	10,000
	Rs.	Rs.	Rs.
Sales revenue	3,400,000	4,400,000	7,800,000
<u>Cost of Goods manufactured and sold:</u>			
Inventory of finished at the beginning of the year	480,000	600,000	1,080,000
Add: Direct Material	2,000,000	3,500,000	5,500,000
Direct Labour	370,370	185,186	555,556
Applied manufacturing overhead	1,088,050	544,026	1,632,076
Cost of goods available for sales	9,938,420	4,829,212	8,767,632
Less: Inventory of finished at the end of the year	480,000	600,000	1,080,000
Cost of goods sold	3,458,420	4,229,212	7,687,632
Gross Margin	(58,420)	180,788	112,368

Manufacturing overhead was applied on the basis of labour hours

Machining	849,056
Assembly	433,962
Material handling	113,208
Inspection	235,850
Total	1,632,076

Nimal Shantha, Managing Director of CCC PLC, has been reading about a new type of costing method called activity-based costing. Nimal Shantha is convinced that the activity-based costing will cast a new light on future profit. As a result, Anil Shantha, company's Director of Cost Management, has accumulated cost pool information for this year shown on the following chart. This information is based on a product mix of 5,000 units of AB-63 and 5,000 units of AC-67.

Cost pool information for 2016/2017

Cost pool	Activity	AB-63	AC-67
Direct labour	Direct-labor hours (per product line)	10,000	5,000
Material handling	Number of parts (per unit)	5	10
Inspection	Inspection hours (per product line)	5,000	7,500
Machining	Machine hours (per product line)	15,000	30,000
Assembly	Assembly hours (per product line)	6,000	5,500

In addition, the following information is projected for the next calendar year 2016/2017

Sales in units	5,100	4,900
Beginning inventory finished goods in units	800	600
Ending inventory finished goods in units	700	700

On 1st October 2016, Managing Director is planning to increase the prices of AB-63 to Rs.710/- and AC-67 to Rs.910/-. Material costs are not expected to increase in 2016/2017, but direct labour will increase by 8%, and all manufacturing overhead costs will increase by 6%. Due to the nature of the manufacturing process, the company does not have any beginning or ending work-in –progress inventories.

CCC PLC uses a just-in-time raw material inventory system and has materials delivered to the production facility directly from the vendors. The raw material inventory both at the beginning and the end of the year is immaterial and can be ignored for the purposes of a budgeted income statement. The company uses the first-in, first-out (FIFO) inventory method.

You are required to:

- Explain briefly the concept of just-in-time inventory and production management system. **(06 Marks)**
- List **four (4)** key features of such a system. **(08 Marks)**
- Explain how activity-based costing differs from traditional product costing method. **(08 Marks)**
- Using activity-based costing, calculate the total cost for 2016/2017 for the following cost pools: material handling, inspection, machining, and assembly. Then, calculate the pool rate per unit of the appropriate cost driver for each of the four activities. **(08 Marks)**
- Prepare a table showing for each product line the estimated 2016/2017 cost for each of the cost elements, namely: direct material, direct labour, machining, assembly, material handling and inspection. **(05 Marks)**
- Prepare a budgeted statement showing the operating margin for CCC PLC for 2016/2017, using activity-based costing. The statement should show each and a total for the company. **(05 Marks)**

(Total 40 Marks)

End of Part I

PART II

Answer any three (3) questions

Question No. 02 (20 Marks)

ABC Limited is a clothing manufacturer specializing in sustainable ladies fashion. The company has been in operation for ten years and during that time has built up a loyal and expanding customer base. ABC Limited has three signature garments, a white blouse, a navy skirt and a grey dress, all produced from organically grown and dyed linen fabric. Successful marketing and sales of these garments has resulted in the company exceeding full capacity at its current manufacturing base in Limerick. Consequently the directors are considering expanding production capacity over the next few years and are examining a number of possibilities. However, for the current year the company has a total of 15,000 machine hours and 20,000 direct labour hours available for production at its Limerick manufacturing base. Production and sales details relating to the signature garments are shown below:

	Blouse	Skirt	Dress
Direct materials: linen@ Rs.600/- per metre (metre)	1.5	1.25	2.5
Direct labour: @ Rs.1,200/- per hour (hour)	0.25	0.25	0.5
Variable overhead: 150% of direct labour cost			
Machine hours required (hour)	0.3	0.2	0.25
Sales demand for the year (units)	30,000	18,000	15,000
Selling price per unit	5,400	8,000	10,500

Budgeted fixed production overhead is estimated to be Rs.9,520,000/- per month and the company has also budgeted for selling and administration expenses of Rs.12,800,000/- per quarter.

Based on the information provided, **you are required to:**

- (a) State whether ABC Limited has sufficient production capacity to satisfy sales demand for the coming year. You should provide calculations to support your answer. **(04 Marks)**
 - (b) Compute the optimal production plan for ABC Limited for the current year, clearly showing total profit expected. **(10 Marks)**
 - (c) Explain the meaning of the following terms: (i) Opportunity cost (ii) limiting factor. **(06 Marks)**
- (Total 20 Marks)**

Question No. 03 (20 Marks)

ADB Company manufactures a wide range of specialized electrical products. The company is structured along divisional lines. "Division A" manufactures a specialized motor. Monthly production is 30,000 units and the marginal cost of production is Rs.14,000/- per unit. Half of all output is sold to external customers at a price of Rs.20,000/- The remaining output is sold within the company to the "Division B". In accordance with the company's rules, these internal transfers are made at the same price per unit as sales to external customers (i.e. Rs.20,000/-). "Division B" uses the motor as a component in the manufacture of an industrial heater, which is sold to external customers at a price of Rs.35,000/- per unit. (One motor is required for each heater). "Division B" incurs a marginal cost of Rs.10,000/- per unit, in addition to the transfer price paid for the motor. A potential new customer has offered to purchase 7,500 units per month of the industrial heater from the "Division B" at a special contract price of Rs.27,500/- each. "Division B" has sufficient spare production capacity to produce these additional heaters.

You are required to:

- (a) Assume that the “Division A” has sufficient spare production capacity to enable it to produce the additional motors required by the “Division B” to enable it to fulfill the potential customer request. In these circumstances, explain:
- (i) whether it would be in the best interests of the ADB Company to accept the potential customer order.
 - (ii) whether the existing transfer pricing arrangements motivate the division managers to take the decisions which are in the best interests of the ADB Company as a whole.

(07 Marks)

- (b) Now assume that “Division A” has no spare production capacity. If “Division A” were to produce the additional motors required by the “Division B” to enable it to fulfill the potential customer request, then the “Division A” would reduce its sales of motors to external customers.

Explain how your answer to part (a) would differ in these circumstances.

(07 Marks)

- (c) Critically evaluate the transfer pricing arrangements in ADB Company using your answers to parts (a) and (b) to illustrate your answer.

(06 Marks)

(Total 20 Marks)

Question No. 04 (20 Marks)

DA Company which is in the food processing business, has identified unfulfilled market demand for a type of specialist frozen fish product. DA Company has made a decision in principle to fill this gap in the market as soon as possible. However, the company has identified two alternative machines (the “Arctic” and the “Tundra”) which would be suitable for manufacturing this product and has not yet decided which one to use. The Arctic would cost Rs.20,000,000/- (payable immediately) with a useful life of 4 years and a nil residual value at the end of that time. The Tundra would cost Rs.26,000,000/- (payable immediately) with a useful life of 5 years and a nil residual value. The use of each machine would also require a working capital investment (Rs.8,000,000/- in the case of the Arctic and Rs. 9,000,000/- in the case of the Tundra). It should be assumed that any working capital investment would be made at the moment the machine is purchased and would be recovered in full at the end of the machine’s useful life. The operating cash flow (i.e., sales minus variable production costs) associated with the use of each machine would be as follows:

	Year 1 (Rs.)	Year 2 (Rs.)	Year 3 (Rs.)	Year 4 (Rs.)	Year 5 (Rs.)
Arctic	15,000,000	20,000,000	17,000,000	13,000,000	Not applicable
Tundra	18,000,000	17,000,000	17,000,000	17,000,000	17,000,000

The fixed maintenance costs of either machine would be Rs.3,000,000/- in each year of the machine’s useful life. The only exceptions to this are that maintenance costs of the Tundra would be only Rs.2,000,000/- in Year 1 and Rs.2,500,000/- in Year 2, because this machine is extremely efficient in its early years. The company pays tax on its profits (at the rate of 30%) one year in arrears. Depreciation is an allowable expense for tax purposes, at a rate of 40% on the diminishing balance basis. Loss on disposal of fixed assets is also an allowable expense for tax purposes. A discount rate of 15% per annum should be used for evaluating the Arctic and a discount rate of 20% per annum should be used for evaluating the Tundra. It should be assumed that all cash flows arise at the end of the year to which they relate, unless otherwise stated.

Using the data provided, **you are required to:**

- (a) Calculate the net present value and payback period for each of the two machines. State (giving reasons) which of the two machines you would recommend to the DA Company. **(14 Marks)**
- (b) Give a reason why DA Company may feel that it is appropriate to use a higher discount rate for evaluating the Tundra than for evaluating the Arctic. **(02 Marks)**
- (c) Why, apart from its simplicity, does the payback method continue to be one of the most commonly used methods of capital budgeting? Give two reasons. **(04 Marks)**

(Total 20 Marks)

Question No. 05 (20 Marks)

You are a trainee CMA accountant with a medium sized firm and have been asked by your manager to prepare a briefing note to explain the difference between management accounting and financial accounting, and the benefits that good management accounting information may bring to a business. It is intended that the briefing note will be distributed to existing and potential clients Small and Medium enterprises to explain the importance to their business of good management accounting information.

You are required to:

- (a) Outline the main differences between management accounting and financial accounting. **(06 Marks)**
- (b) Describe the factors that have contributed to the growth and importance of management accounting. **(06 Marks)**
- (c) Explain the role of the management accountant in terms of the type of information that he/she may provide to a business. **(08 Marks)**

(Total 20 Marks)

End of Part II

Present value table

Present value of 1.00 unit of currency, that is $(1 + r)^{-n}$ where r = interest rate; n = number of periods until payment or receipt.

Periods (n)	Interest rates (r)									
	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
1	0.990	0.980	0.971	0.962	0.952	0.943	0.935	0.926	0.917	0.909
2	0.980	0.961	0.943	0.925	0.907	0.890	0.873	0.857	0.842	0.826
3	0.971	0.942	0.915	0.889	0.864	0.840	0.816	0.794	0.772	0.751
4	0.961	0.924	0.888	0.855	0.823	0.792	0.763	0.735	0.708	0.683
5	0.951	0.906	0.863	0.822	0.784	0.747	0.713	0.681	0.650	0.621
6	0.942	0.888	0.837	0.790	0.746	0.705	0.666	0.630	0.596	0.564
7	0.933	0.871	0.813	0.760	0.711	0.665	0.623	0.583	0.547	0.513
8	0.923	0.853	0.789	0.731	0.677	0.627	0.582	0.540	0.502	0.467
9	0.914	0.837	0.766	0.703	0.645	0.592	0.544	0.500	0.460	0.424
10	0.905	0.820	0.744	0.676	0.614	0.558	0.508	0.463	0.422	0.386
11	0.896	0.804	0.722	0.650	0.585	0.527	0.475	0.429	0.388	0.350
12	0.887	0.788	0.701	0.625	0.557	0.497	0.444	0.397	0.356	0.319
13	0.879	0.773	0.681	0.601	0.530	0.469	0.415	0.368	0.326	0.290
14	0.870	0.758	0.661	0.577	0.505	0.442	0.388	0.340	0.299	0.263
15	0.861	0.743	0.642	0.555	0.481	0.417	0.362	0.315	0.275	0.239
16	0.853	0.728	0.623	0.534	0.458	0.394	0.339	0.292	0.252	0.218
17	0.844	0.714	0.605	0.513	0.436	0.371	0.317	0.270	0.231	0.198
18	0.836	0.700	0.587	0.494	0.416	0.350	0.296	0.250	0.212	0.180
19	0.828	0.686	0.570	0.475	0.396	0.331	0.277	0.232	0.194	0.164
20	0.820	0.673	0.554	0.456	0.377	0.312	0.258	0.215	0.178	0.149

Periods (n)	Interest rates (r)									
	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%
1	0.901	0.893	0.885	0.877	0.870	0.862	0.855	0.847	0.840	0.833
2	0.812	0.797	0.783	0.769	0.756	0.743	0.731	0.718	0.706	0.694
3	0.731	0.712	0.693	0.675	0.658	0.641	0.624	0.609	0.593	0.579
4	0.659	0.636	0.613	0.592	0.572	0.552	0.534	0.516	0.499	0.482
5	0.593	0.567	0.543	0.519	0.497	0.476	0.456	0.437	0.419	0.402
6	0.535	0.507	0.480	0.456	0.432	0.410	0.390	0.370	0.352	0.335
7	0.482	0.452	0.425	0.400	0.376	0.354	0.333	0.314	0.296	0.279
8	0.434	0.404	0.376	0.351	0.327	0.305	0.285	0.266	0.249	0.233
9	0.391	0.361	0.333	0.308	0.284	0.263	0.243	0.225	0.209	0.194
10	0.352	0.322	0.295	0.270	0.247	0.227	0.208	0.191	0.176	0.162
11	0.317	0.287	0.261	0.237	0.215	0.195	0.178	0.162	0.148	0.135
12	0.286	0.257	0.231	0.208	0.187	0.168	0.152	0.137	0.124	0.112
13	0.258	0.229	0.204	0.182	0.163	0.145	0.130	0.116	0.104	0.093
14	0.232	0.205	0.181	0.160	0.141	0.125	0.111	0.099	0.088	0.078
15	0.209	0.183	0.160	0.140	0.123	0.108	0.095	0.084	0.079	0.065
16	0.188	0.163	0.141	0.123	0.107	0.093	0.081	0.071	0.062	0.054
17	0.170	0.146	0.125	0.108	0.093	0.080	0.069	0.060	0.052	0.045
18	0.153	0.130	0.111	0.095	0.081	0.069	0.059	0.051	0.044	0.038
19	0.138	0.116	0.098	0.083	0.070	0.060	0.051	0.043	0.037	0.031
20	0.124	0.104	0.087	0.073	0.061	0.051	0.043	0.037	0.031	0.026

End of Question Paper