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THE INSTITUTE OF CHARTERED ACCOUNTANTS OF SRI LANKA

No. of pages: 14

Corporate Level

Advanced Management Accounting

Instructions to candidates

(1) Time allowed: Reading and planning – 15 minutes
Writing – 3 hours

(2) Total: 100 marks

(3) **All questions are compulsory.**

(4) This paper consists of three sections.
Section 1:10 multiple choice questions (MCQs)
Section 2: 4 questions
Section 3: 2 questions

(5) This is a **closed book** examination

(6) Answers to all the questions should be in the answer booklet/s given to you.
Answers to Question 1 (the most appropriate answer (A, B, C or D)) should be entered in the answer booklet against the relevant question number.

(7) Begin each answer in Section 2 and Section 3 on a separate page in the answer booklet.

(8) All answers should be in the **English language** in the answer booklet/s given to you.

(9) Answers written on the answer booklets, graph papers and any other stationery distributed at the examination hall, only, are considered in marking of the answer scripts. Any other attached documents are not taken into account at the time of marking the answer scripts.

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FEBRUARY 2021

SECTION 1

All questions are compulsory.
Total marks for Section 1 is 20 marks.
Recommended time for the section is 36 minutes.

Question 01

1.1 Which of the following is a feature within an organisation which operates a just-in-time (JIT) procurement system?

A. Raw materials are ordered from the supplier at the earliest possible time.
B. Inventories of materials are maintained for production.
C. Finished goods are stocked till customer orders are placed.
D. A good relationship with customers and material suppliers.

(2 marks)

1.2 A company makes electric toy cars and sells them in the market for Rs. 2,500 each. Per item cost structure has a material cost of Rs. 1,400 and a labour cost of Rs. 50. Direct labour hourly rate is Rs. 250 and the estimated monthly labour requirement is 1,500 hours. One unit of toy consumes 0.05 machine hours and the maximum machine hours available for a month is 600 hours. Total variable production overhead costs are estimated to be Rs. 3 million a month.

The throughput accounting (TA) ratio for the binding constraint is:

A. 0.26 B. 2.82 C. 3.91 D. 4.20

(2 marks)

1.3 Backflush costing is a method of costing, associated with JIT production systems.

Which of the following are advantages of backflush costing system?

(i) It discourages non-value adding activities from the costing system.
(ii) It provides more detailed management information compared to the traditional costing system.
(iii) No complex work-in-progress entries involved as accounting entries are made after the process is completed.

A. (i) and (ii) only
B. (i) and (iii) only
C. (ii) and (iii) only
D. All of (i), (ii) and (iii)

(2 marks)

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1.4 You are preparing a presentation for the management staff of different departments on target costing and you are given the following statements.

(i) Customer requirements for quality, cost and timescales are more likely to be included in decisions in the product development stage.
(ii) This approach aims to reduce current costs in small continuous steps using various tools such as value analysis and functional analysis.
(iii) The company will focus on designing out costs prior to production, rather than cost control during live production.

Which of the above statements would you be able to use in your presentation to explain the target costing approach in the business?

A. (iii) only
B. (i) and (ii) only
C. (i) and (iii) only
D. (ii) and (iii) only

(2 marks)

1.5 Which of the following statements correctly differentiate/s the environmental management accounting (EMA) from conventional management accounting (CMA)?

(i) EMA considers both traditional cost data and environmental cost data.
(ii) EMA accounts for non-financial costs that has an impact on the environment and ignores financial costs.
(iii) EMA aims to support the external environmental management process.

A. (i) only B. (ii) only C. (iii) only D. (i) and (iii) only

(2 marks)

1.6 A cotton mill uses a standard costing system. For a month it had budgeted to produce 50 batches spending Rs. 600,000 for 2,000 labour hours. During the month 55 batches were produced incurring Rs. 900,000 for labour and the labour rate per hour was Rs. 400. Total idle time reported for the month was 120 hours.

What is the labour efficiency variance for the month?

A. Rs. 15,000 Adverse
B. Rs. 21,000 Favourable
C. Rs. 28,000 Favourable
D. Rs. 39,000 Adverse

(2 marks)

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1.7 The following statements have been presented with regard to variances computed in accordance with absorption costing system (ACS) and marginal costing system (MCS).

(i) Sales volume variance in MCS is different from that in ACS.
(ii) There is no fixed overhead expenditure variance under MCS.
(iii) There is no fixed overhead volume variance under MCS.

Which of the above statements is/are true?

A. (iii) only
B. (i) and (ii) only
C. (ii) and (iii) only
D. (i) and (iii) only

(2 marks)

1.8 Establishment of current capacity levels of an organisation is a main activity in the capacity planning exercise. A manufacturing company which has achieved a production level of 68,000 units of its output, has recorded an adverse fixed production overhead volume variance for the last month.

Which of the following could be true with regard to the various capacity levels of this organisation for the last month?

DC = Design capacity	BC = Budgeted capacity	EC = Effective capacity

A. DC = 80,000 units, BC = 70,000 units, EC = 68,000 units
B. DC = 75,000 units, BC = 70,000 units, EC = 80,000 units
C. DC = 80,000 units, BC = 65,000 units, EC = 75,000 units
D. DC = 80,000 units, BC = 70,000 units, EC = 70,000 units

(2 marks)

1.9 The procurement manager of a large diversified company, during the process of calling quotations for the selection of a third party security service, identified that one of the vendors from the few qualified suppliers in the market is one of his close relatives. The contract period is 3 years and the fee will be paid on a monthly basis.

Based on the TARA model approach, which course of action indicated below is the best recommendation to handle the risk by the procurement manager?

A. Do not invite the vendor to submit quotations as this transaction may create a conflict of interest on the procurement manager when working in the best interest of the company.
B. Invite the vendor to submit quotations as only a few qualified suppliers are available and also due to the close relationship it will be easy to ensure a better delivery of service.
C. Disclose the relationship to the management, invite the vendor to submit quotations and refrain from getting involved in the evaluation process.
D. Invite the vendor to submit quotations and obtain a performance bond to cover the risks of vendor non performances.

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(2 marks)

1.10 The following are some of the financial indicators of an organisation.

		Last quarter	This quarter
(i)	Sales (Rs. million)	50	90
(ii)	Trade creditors (Rs. million)	20	50
(iii)	Trade debtors (Rs. million)	30	75
(iv)	Quick ratio	0.90	1.10

Which of the above are indications of an overtrading state within an organisation?

A. (i), (ii) and (iii) only
B. (i), (iii) and (iv) only
C. (i), (ii) and (iv) only
D. All of (i), (ii), (iii) and (iv)

(2 marks)

(Total: 20 marks)

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SECTION 2

All questions are compulsory.
Total marks for Section 2 is 40 marks.
Recommended time for the section is 72 minutes.

Question 02

Nimro (Pvt) Ltd (NPL) produces three chemicals for the local market. As part of the business re-engineering process which is underway at present, the board of directors has advised to streamline all the operations of the company. For this purpose, the board has proposed to apply an activity-based costing (ABC) model to all operations and to discontinue the production of loss-making products. Product costs are currently calculated using absorption costing, where overheads are absorbed on a machine hour basis. You are the factory accountant of NPL and have obtained the following budgeted data for the next year.

	Chemical P	Chemical Q	Chemical R
Maximum market demand (kg)	75,000	50,000	30,000
Production/sales (kg)	60,000	40,000	20,000
Sales (Rs. million)	36.00	44.00	15.00
Costs:			
Direct material (Rs. million)	6.60	5.60	3.84
Direct labour (Rs. million)	5.10	4.40	2.20
Overheads (Rs. million)	12.20	24.40	4.88
Profit (Rs. million)	**12.10**	**9.60**	**4.08**

Cost driver	Chemical P	Chemical Q	Chemical R
Machine time (hours per kg)	0.10	0.30	0.12
Number of supplier orders	80	20	160
Number of production runs	80	100	60
Number of sales orders	400	100	800

Cost pool	Rs. million
Machine operating costs	14.28
Material ordering costs	10.40
Set-up costs	16.80

- Machine time is limited to 20,400 hours for the next year.

The group finance manager has made his own calculations using the above information and suggested that the production of Chemical R should be discontinued immediately, and the excess machine hours should be utilised to maximise the profitability of the factory.

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Required:

(a) **Validate** with necessary computations, the group finance manager's suggestion to discontinue production of Chemical R, based on activity-based costing.

(5 marks)

(b) **Advise** the management of NPL as to how the excess machine time subsequent to the discontinuation of Chemical R should be utilised to maximise the profitability.

(5 marks)

(Total: 10 marks)

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Question 03

Harper (Pvt) Ltd (HPL) engages in the business of manufacturing and trading of office equipment. At every month end, HPL performs a variance analysis to evaluate the performance of the department. The following extract of the variance analysis prepared comparing budgeted results, was presented at the performance review meeting.

	Budget (Rs.)	**Variance (Rs.)**
Sales revenue	6,000,000	900,000 Favourable
Cost of sales:		
Material	(2,500,000)	(350,000) Adverse
Direct labour	(500,000)	(160,000) Adverse
Gross profit	**3,000,000**	**390,000 Favourable**
Selling and administrative expenses	(1,600,000)	(300,000) Adverse
Depreciation	(150,000)	50,000 Favourable
Net profit	**1,250,000**	140,000 Favourable

The following additional details were available for the month.

- Budgeted selling price was Rs. 12,000 per unit. However, the actual selling price reported was Rs. 11,500 per unit.
- Production takes place batch wise as 100 units per batch. Labour costs also include batch set-up costs of Rs. 10,000 per batch.
- 25% of selling and administrative expenses include fixed costs.

In addition, the performance review board has discussed the growth limitations when working with the traditional budgeting system. It was discussed to look for options to follow an adaptive management process rather than following fixed monthly budgets.

Required:

(a) **Prepare** a budgetary control statement to be used to evaluate the department's performance during the month.

(5 marks)

(b) **Discuss** two (02) advantages and disadvantages each in following an adaptive management process instead of fixed monthly budgets.

(3 marks)

(c) **Outline** four (04) principles to be followed by HPL in order to implement the adaptive management process.

(2 marks)

(Total: 10 marks)

Question 04

Pesto (Pvt) Ltd is manufacturing construction rammers for the export market by its international marketing division (IM division). The IM division currently purchases motors from the external market at Rs. 50,000 each since every rammer requires a motor. The local marketing division (LM division) which manufactures electrical items has put forward a proposal to the management to start manufacturing motors for the IM division.

The following information is extracted from this proposal.

Output	Motors are to be sold to the IM division for Rs. 45,000 each
Variable manufacturing costs	Rs. 30,000 per unit
Fixed costs	Rs. 5 million per month (these are incurred specifically to produce motors)

It is the policy of the company to reward managers based on their divisional performance.

The information of the IM division is as follows.

Output	Current monthly demand at the unit price of Rs. 150,000 is 1,000 units. However, the manager of the division believes that the demand could be increased by another 200 units if the price is reduced by Rs. 5,000 per unit.
Variable costs	Rs. 135,000 per unit (all inclusive)
Fixed costs	Rs. 12 million per month (these are incurred specifically to produce rammers)

Required:

(a) **Assess** the present profitability of IM division.

(1 mark)

(b) **Evaluate** the proposal forwarded by the LM division for manufacturing of motors.

(You need to compute the profitability based on the proposal for LM division, IM division and for the company as a whole)

(4 marks)

(c) **Advise** the management whether to reduce the price per rammer from a financial point of view by:

(i) computing the revised profit of each division and of the company as a whole.

(ii) briefly explaining the reaction of each division and of the top management to this change.

(5 marks)

(Total: 10 marks)

Question 05

Nawro Products (Pvt) Ltd (NPL) has just acquired a new company and is now reviewing its financial statements to develop suitable financial policies for future years. The following details were produced for the analysis of its working capital management.

- In the current year, a gross profit of 20% was earned on a total sales value of Rs. 20 million. Year-on-year sales growth was 40% for the year. However gross profit was reduced by 5% compared to the previous year results. All sales are made on credit basis.

- Other extracts of financial statements

Average debtors	Rs. 3.4 million
Average inventory	Rs. 3.2 million
Average creditors	Rs. 1.4 million
Short-term loan: Limit Rs. 3.5 million	Rs. 3.3 million

- Industry statistics

Inventory turnover period	45 days
Accounts receivable payment period	30 days
Accounts payable payment period	40 days
Year-on-year sales growth	15%

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Required:

(a) **Compute** the cash operating cycle of the company.

(3 marks)

(b) **Analyse** the current working capital management status and **identify** the main problem faced by NPL.

(4 marks)

(c) **Outline** three (03) recommendations to overcome the problem identified in (b) above.

(3 marks)

(Total: 10 marks)

SECTION 3

Both questions are compulsory.
Total marks for Section 3 is 40 marks.
Recommended time for the section is 72 minutes.

Question 06

Oxym (Pvt) Ltd (OPL), is evaluating an investment in a new product which is estimated to have a capital expenditure of Rs. 60 million at present day for machinery and equipment some of which needs to be imported. The expected production period of this new product is 5 years. The management expects the machinery and equipment to have a residual value of 10% after the production period.

- The product will be made in the excess production facility of the company which has been presently rented out to a third party. The rental income relevant for the next year is Rs. 6 million which is payable during the same year. This rental is subject to an annual increase of 10%. Once the project period ends this facility could be rented out again or utilised for future operations.

- The marketing team has forecasted the following information for this new product.

	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Sales volume (units)	50,000	80,000	120,000	90,000	40,000
Selling price (Rs. per unit)	2,000	2,100	2,400	2,500	2,600

  Selling price has been pre-set after considering the inflationary factor.

- Majority of the variable cost of the product contains raw materials which are imported from middle eastern countries. As such the cost of materials is highly dependent on the economic conditions in the supplying countries. The purchasing department has made the following forecast:

	Economic condition, in countries of material suppliers		
	Unfavourable	**Neutral**	**Favourable**
Variable cost per unit (Rs.)	1,700	1,500	1,400
Probability	35%	45%	20%

  Variable cost is stated in real terms and is expected to inflate at a rate of 4% annually.

- Fixed overheads pertaining to this operation is Rs. 10 million per annum in present day value.

- Except for those which are specified, the general inflation would be 5% per annum.

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- OPL can claim tax-allowable depreciation at 20% per year on a straight-line method on the full capital expenditure. The corporate tax rate is 28% per year payable in the year in which the liability arises. OPL currently pays corporate taxes from its other operations.

OPL has a real after-tax weighted average cost of capital of 10% and a nominal after-tax weighted average cost of capital of 15.5%. Cost of equity of OPL is 20%.

Required:

(a) **Evaluate** the financial acceptability of the project based on the net present value (NPV) method.

(13 marks)

(b) **Evaluate** the risk of the project in terms of the internal rate of return (IRR).

(4 marks)

(c) OPL has made all the project related estimations prior to the COVID-19 outbreak.

Explain three (03) areas which will have elevated exposure of risk for OPL mainly due to the outbreak.

(3 marks)

(Total: 20 marks)

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Question 07

Deltan Dairies (Pvt) Ltd (DDL) is engaged in the manufacture of dairy products. DDL has two manufacturing units: milk separation and consumer goods of which the operational details are given below.

Wastages are negligible in all units/processes.

Milk separation unit

Weekly capacity of the milk separation plant is 40,000 litres, which generates two products: skim milk and cream in the ratio of 4:1. The cream output is entirely transferred to the consumer goods unit and currently the skim milk output is not further processed and entirely sold to external buyers. The weekly fixed cost of the unit is Rs. 1.65 million. The plant operates at its full capacity and the following details are available:

	Skim milk	Cream
Selling/transfer price per litre (Rs.)	125	750
Total variable costs per litre (Rs.)	105	530

Consumer goods unit

The total cream output is the only input material and is further processed in the consumer goods unit to make two products: butter and whipping spread. Products are offered in large packs and the selling price per one pack of butter is Rs. 80,000 and one pack of whipping spread is Rs. 25,000. Both products pass through two plants: mixing and packing. The maximum available machine hours for the two plants are 300 hours and 180 hours, per week, respectively. The following table shows the consumption details of the two products.

Product	Material (liters)	Direct labour hours	Other variable costs (Rs.)	Mixing plant hours	Packing plant hours
Butter (per pack)	80	4	3,000	2	1.5
Whipping spread (per pack)	20	2	4,000	1	0.5

Hourly pay for labour is Rs. 500. Whipping spread has a maximum demand of 260 packs a week.

Skim milk further processing proposal

An investor has approached to install a plant to further process skim milk to make flavoured milk packets that has a content of 250 ml. The proposal is under consideration and additional details are as follows:

- Investor will purchase the total skim milk output with a Rs. 15 rebate on the selling price and an additional variable cost of Rs. 30 will be incurred per flavoured milk pack.

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- DDL will offer one of its spare buildings which has a cost value of Rs. 6 million to set up the plant and for which the investor will pay a weekly rental of Rs. 80,000. DDL's assets are depreciated over its useful life of 5 years on a straight-line basis.

- DDL will spend an additional weekly administrative cost of Rs. 75,000 on its own account.

- The selling price per flavoured milk pack is Rs. 75 and 25% of the gross profit resulting from further processing will be shared with DDL.

Required:

(a) **Assess** the margin of safety as a percentage of budgeted sales revenue of the milk separation unit on its weekly operations.

(3 marks)

(b) **Advise** the management on the optimum weekly production units of each product of the consumer goods unit that maximises the weekly contribution of the company, using the graphical method of linear programming.

(Step by step details should be provided to convince the management).

(8 marks)

(c) **Assess** the slack quantities and shadow prices for binding resources at the optimum weekly production units if the optimum weekly production in (b) above is approved.

(4 marks)

(d) **Recommend** whether the proposal of the investor should be accepted.

(5 marks)

(Total: 20 marks)