INTERMEDIATE EXAMINATION
GROUP II
(SYLLABUS 2008)

SUGGESTED ANSWERS TO QUESTIONS
DECEMBER 2014

Paper- 8 : COST AND MANAGEMENT ACCOUNTING

Time Allowed : 3 Hours **Full Marks : 100**

The figures in the margin on the right side indicate full marks.
Question No. 1 is compulsory and answer any five from the rest.
Working notes should form part of your answer.

1. (a) Match the statement in Column I with the appropriate statement in Column II: 1x5=5

Column I		Column II	
(i)	HIFO	(A)	Direct Material Cost
(ii)	Cost Object	(B)	Labour Incentive Scheme
(iii)	Standard Costing	(C)	Activity Based Costing
(iv)	Primary Packing Material	(D)	Issue of Material
(v)	Time & Motion Study	(E)	Predetermined Cost

(b) State whether the following statements are True' or 'False': 1x5=5
- **(i) Idle time variance is always favourable.**
- **(ii) Under-absorption of overhead results in higher amount of profit.**
- **(iii) An increase in variable cost increases contribution.**
- **(iv) What was once a by-product of an industry may become main product at a later date.**
- **(v) Replacement cost is the cost of replacing existing assets at present or at a future date.**

(c) Fill in the blanks suitably: 1x5=5
- **(i) If the actual output in more than the normal output, the difference between the two is _____.**
- **(ii) Under _____ _____, employees receive a constant proportion of value added.**
- **(iii) For identifying slow moving stocks, it is necessary to compute the _____ _____ ratio.**
- **(iv) Material usage variance is the sum of _____ and _____ .**
- **(v) Where production is as per requirement of customer, the costing method used in such industries is _____.**

(d) In the following cases, one out of the four answers is correct. You are required to indicate the correct answer (= 1 mark) and give brief workings (= 1 mark): 2x5=10
- **(i) A hospital is open for 365 days, but bed occupancy is 25 patients per day for 120 days and 20 beds occupied for another 80 days. Extra beds occupied during the year is 400. The patient-days of the hospital is**
  (a) 4,000 (c) 3,500
  (b) 5,000 (d) 4,600
- **(ii) A company manufactures two products using common handling facility. The total budgeted material handling cost is ₹ 60,000. Other details are:**

Particulars	Product A	Product B
Number of units produced	30	30
Material moves per product line	5	15

Under Activity Based Costing System, material handling cost to be allocated to Product A per unit is

(a) ₹ 1,000 **(c) ₹ 1,500**

(b) ₹ 500 **(d) ₹ 2,500**

(iii) A Ltd. has fixed costs of ₹ 6,00,000 per annum. It manufactures a single product which sells for ₹ 200/unit. Its contribution is to Sales ratio is 40%. A Ltd.'s break-even in units is

(a) 7,500 **(c) 3,000**

(b) 8,000 **(d) 1,500**

(iv) The following data are given for an industry using batch costing.

Annual consumption of components – 2400 units

Setting up cost per batch – ₹ 100

Manufacturing cost/unit – ₹ 200

Carrying cost/unit – 6% per annum

Economic Batch Quantity would be

(a) 300 units **(c) 200 units**

(b) 400 units **(d) 250 units**

(v) A worker has a time rate of ₹ 15/hour. He has taken 48 hours to finish a job where Standard time is 60 hours. His total wages including Rowan Bonus for the week is

(a) ₹ 792 **(c) ₹ 840**

(b) ₹ 820 **(d) ₹ 864**

Answer:

1. (a) Matching:

Column I		Column II	
(i)	HIFO	(D)	Issue of Material
(ii)	Cost Object	(C)	Activity Based Costing
(iii)	Standard Costing	(E)	Predetermined Cost
(iv)	Primary Packing Material	(A)	Direct Material Cost
(v)	Time & Motion Study	(B)	Labour Incentive Scheme

(b) (i) False
(ii) True
(iii) False
(iv) True
(v) True

(c) (i) Abnormal gain,
(ii) Rucker Plan
(iii) Inventory Turnover / Stock Turnover
(iv) Mix variance, yield variance
(v) Job costing / Job Order Costing

(d) (i) (b) 5,000

Patient-days in a year
(25 beds x 120 days) + (20 beds x 80 days) + 400 beds
= 3,000 + 1,600 + 400
= 5,000 patient-days

(ii) (b) ₹ 500

Total move in material handling = 5 + 15 = 20

Percentage move for Product A = 5/20 = 25%
Material handling cost to be allocated to
Product A = ₹ 60,000 x 25% = ₹ 15,000
Therefore, per unit = ₹ 15,000 ÷ 30 units = ₹ 500.

(iii) (a) 7,500
Break even unit = Fixed Cost / Contribution per unit
₹ 6,00,000 ÷ 40% of ₹ 200
₹ 6,00,000 ÷ ₹ 80 = 7500 units

(iv) (c) 200 units

Econ Batch Quantity = $\sqrt{\frac{2AS}{C}}$

where
A = Annual Demand
S = Setting up cost per batch
C = Carrying cost per unit

$= \sqrt{\frac{2 \times 2,400 \times 100}{6\% \text{ of } 200}}$

$= \sqrt{40,000}$

= 200 units

(v) (d) ₹ 864
Standard Time = 60 hours
Time taken = 48 hours
Total earnings of a worker under Rowan Scheme
= (48 hours x ₹ 15) + (12 hours ÷ 60 hours x 48 hours x ₹ 15)
= ₹ 720 + ₹ 144 = ₹ 864.

2. (a) State briefly the usefulness of Break-even analysis. 5
(b) A product of XYZ Ltd. Co. passes through two processes A and B 10,000 units at a cost of ₹ 1.10 were issued to process A. Other direct expenses were as follows:

Particulars	Process A	Process B
Sundry Materials (₹)	2,000	2,000
Direct Labour (₹)	4,500	8,000
Direct Expenses (₹)	1,500	1,500

Wastage of process A was 5% and in process B 4%.
Wastage of process A was sold at ₹ 0.25 per unit and that of process B at ₹ 0.50 per unit. Overhead charges were 160% of direct labour.
Prepare Process A/c 'A' and Process A/c 'B'. 5+5=10

Answer:

2. (a) Break even analysis used to determine:
(i) The amount of profit / loss at various volume of operations.
(ii) The volume of operations required to earn a target profit.
(iii) The effect of change in variable cost on profit.
(iv) The effect of change in fixed cost on profit.
(v) The effect of change in selling price on profit.
(vi) The effect of change in sales volume on profit.

(b)

Process A - Account

Particulars	Units	₹	Particulars	Units	₹
Raw materials introduced	10,000	11,000	By Normal Loss (5% of 10,000)	500	
Add: materials		2,000	Sales of Scrap 500 x 0.25		125
Direct Labour		4,500	Transfer to Process B	9,500	26,075
Direct Expenses		1,500			
Overheads		7,200			
	10,000	26,200		10,000	26,200

Process B - Account

Particulars	Units	₹	Particulars	Units	₹
Transferred from Process - A	9,500	26,075	By Normal Loss (9500x4%)	380	
Direct materials		2,000	Sales of Scrap		190
Direct Labour		8,000	Transfer to Finished Stock A/c	9,120	50,185
Direct Expenses		1,500			
Overheads		12,800			
	9,500	50,375		9,500	50,375

3. (a) Z Ltd. has two autonomous divisions: A and B with objective to maximize divisional profits. Divn. A produces X and transfer to Divn. B. B sells X in the external market after incurring processing cost (variable) of ₹ 8 per unit.

The demand of X in the external market varies with the selling price as given below:

Demand in units in a month	Selling price per unit (₹)
2000	**50**
3000	**45**
4000	**40**

A incurs variable cost of ₹ 20 per unit of X and fixes Transfer Price at ₹ 30 per unit.

(i) Find divisional contributions and contribution of Z Ltd. at the Transfer Price of ₹ 30 per unit.

(ii) Examine how the company's profits would change if the Transfer price is changed to ₹ 25 per unit. 4+6=10

(b) What is scrap? How do you treat scrap in Cost Accounts? 5

Answer:

3. (a) At transfer price of ₹ 30: Cost to B is (₹ 30 + 8 = 38)

Units	SP (₹)	Cost (₹)	Contribution pu (₹)	Total contribution (₹)
2000	50	38	12	24000 (Max)
3000	45	38	7	21000
4000	40	38	2	8000

B will sell 2000 units and makes total contribution (₹)	24000
A makes total contribution on transfer of 2000 units = 2000* (30 – 20)	20000
Z Ltd. makes total contribution (₹) = 24000 + 20000	44000

At transfer price of ₹ 25: Cost to B is (₹ 25 + 8 = 33)

Units	SP (₹)	Cost (₹)	Contribution pu (₹)	Total contribution (₹)
2000	50	33	17	34,000

3000	45	33	12	36,000 (Max)
4000	40	33	7	28,000

B will sell 3000 units and makes total contribution (₹) = 36,000
A makes total contribution on transfer of 3000 units = 3000* (25 – 20) = 15000
Z Ltd. makes total contribution (₹) = 36000 + 15000 = 51,000
The company's total profit will increase by ₹ 7000 (=51000 – 44000) for change of transfer price from ₹ 30 to ₹ 25.

(b) Scrap: Scrap is a residual material resulting from a manufacturing progress. It has a recovery value and is measurable. The treatment of scrap in cost accounts is normally as per the following details.

- If the value of scrap is negligible, the good units should bear the cost of scrap and any income collected will be treated as other income.
- If the value of scrap is considerable and identifiable with the process or job, the cost of job will be transferred to scrap account and any realization from sale of such scrap will be credited to the job or process account and any unrecovered balance in the scrap account will be transferred to the Costing Profit and Loss Account.
- If scrap value is quite substantial and it is not identifiable with a particular job or process, the amount will be transferred to factory overhead account after deducting the selling cost. This will reduce the cost of production to the extent of the scrap value.

4. (a) Gupta Enterprises is operating at 60% capacity level producing and selling 60,000 units @ ₹ 100 per unit. Other relevant particulars are given below:

	Cost per units (₹)
Material	**40**
Conversion Cost (variable)	**20**
Dealer's margin (10% of sales)	**10**

Fixed cost for the period is ₹ 12,00,000.
As there is a stiff competition, it is not possible to sell all the products at the existing cost price structure. The following alternative proposals are considered:
First proposal (i) Decrease selling price by 20%.
Second Proposal (ii) Increase dealers' margin from 10% to 20%.
Select the better alternative.

Also calculate the sales volume required to maintain the same amount of profit under the alternative, which is considered better assuming that volume of sales will not be a limiting factor under such an alternative.
Also assume that fixed cost will remain constant. 3+3+2+2=10

(b) Write short notes on application of marginal costing in fixing selling price in the short run. 5

Answer:

4. (a)

Computations under existing conditions

Contribution per unit = Unit selling price – Unit variable cost
= ₹ 100 – (₹ 40 + 20 + 10) = ₹ 30

Contribution for sale of 60,000 x ₹ 30 = ₹ 18,00,000
Profit = Contribution – Fixed cost = 18,00,000 – 12,00,000 = ₹ 6,00,000

Computation under 1st alternative

(i.e., when selling price is decreased by 20%)
Revised selling price per unit (₹ 100 – 20% of ₹ 100) = ₹ 80
Variable cost per unit = ₹ 70
Revised contribution per unit = ₹ 10

$$\text{P/V Ratio} = \frac{\text{Contribution}}{\text{Sales}} \times 100 = \frac{10}{80} \times 100 = 12.5\%$$

$$\text{BEP Sales (in ₹)} = \frac{\text{Fixed Cost}}{\text{P / V Ratio}} = \frac{₹12,00,000}{12.5\%} = ₹\ 96,00,000$$

Computation under 2nd alternative
(i.e., when dealer's margin is increased to 20%)

	₹
Selling price per unit	100
Revised variable cost per unit (₹ 40+20+20)	80
Revised contribution	20

$$\text{P/V Ratio} = \frac{\text{Contribution}}{\text{Sales}} \times 100 = \frac{20}{100} \times 100 = 20\%$$

$$\text{BEP Sales (in ₹)} = \frac{\text{Fixed Cost}}{\text{P / V Ratio}} = \frac{₹12,00,000}{20\%} = ₹\ 60,00,000$$

From the above result it appears that P/V Ratio under the second alternative is higher than that under the first alternative. Also breakeven point under the second alternative sets at a lower level than under the first alternative. Therefore, second alternative i.e., increasing dealer's margin to 20% is better both in terms of profitability (as reflected from P/V ratio) and risk (as reflected from BEP).

If the second alternative is selected, the required volume of sales to maintain the same profit i.e., 6,00,000

$$= \frac{\text{Fixed Cost + Desired Profit}}{\text{P / V Ratio}} = \frac{12,00,000 + 6,00,000}{20\%} = \frac{18,00,000}{20\%} = ₹\ 90,00,000.$$

$$\text{Required Sales units} = \frac{\text{Total Contribution}}{\text{Contribution per unit}}$$

$$= \frac{18,00,000}{20}$$

= 90,000 units

Gupta Enterprises will have to sell 90,000 units to earn the same profit as earlier.

(b) Marginal costing is helpful in determining selling price in the short run in different situations line -
(i) In times of trade depression

(ii) In times of cut throat competition
(iii) In accepting additional orders utilizing idle capacity
(iv) In introducing a new product in the market
(v) In driving out a weak competition from the market
(vi) Expanding export market.

In the short run, the management even may fix selling price below the marginal cost in times of heavy fall in demand temporarily to keep the permanent labour force intact, to keep the plants in operation and to sell the perishable goods produced etc.

5. (a) Zed manufacturing Co. Ltd. submits the following information:

(i) The units to be sold during six months ended December, 2012:

July	**5,600**
August	**8,300**
September	**10,200**
October	**9,500**
November	**9,200**
December	**9,800**

(ii) Expected sales for January, 2013 – 6,400 units,
(iii) Stock of finished goods at the beginning of July, 2012-3,800 units.
(iv) Stock of finished goods (units) at the end of each month will be equal to 25% of the sales units of that month plus 25% of the sales units of the next month.
(v) There will be no opening or closing work in progress.
(vi) Direct material cost per unit ₹ 15. Direct labour cost per unit ₹ 10 and overhead 150% of direct labour.

Based on the above information prepare monthly production budget for each of the months ended December, 2012.
Also prepare production cost budget for the said six months period. 4+4+2=10

(b) Mention the prerequisites for implementation of Budgetary Control System. 5

Answer:

5. (a) Production Budget (monthly) for 6 month ended December, 2012:

Months	Opening Stock (Units)	Sales (Units)	Closing Stock (Units)	Production (Units)
(1)	(2)	(3)	(4)	(5) = 3+4-2
2012	3800	5600	3475	5275
July	3475	8300	4625	9450
August	4625	10200	4925	10500
September	4925	9500	4675	9250
October	4675	9200	4750	9275
November	4750	9800	4050	9100
December				52850

Production Cost Budget for six month ended December, 2012

Particulars	Amount (₹)
Direct materials (52850 x ₹ 15)	7,92,750.00
Direct Labour (52850 x ₹ 10)	5,28,500.00
Over head (150% of ₹ 5,28,500)	7,92,750.00
Budgeted Production Cost	21,14,000.00

Working Notes:
Closing stock for a month = 25% of Sales unit for that month + 25% of Sales unit for the

next month.
Therefore, closing stock for July, 2012 = 25% of 5600 + 25% of 8300 = 1400 + 2075 = 3475 units.

(b) **Following are the pre-requisite of Budgetary Control System:**

(i) Fixation of objective and goal in clear terms.
(ii) Sound organization structure.
(iii) Full co-operation from all employees.
(iv) Proper education of employees.
(v) Efficient accounting system.
(vi) Formation of a budget committee.
(vii) Positive attitude of all employees to accept changes whenever necessary.
(viii) Setting Standard Cost.
(ix) Top Management support
(x) Proper organizational structure
(xi) Clear and realistic goals
(xii) Flexibility
(xiii) Participative process
(xiv) Conducive environment

6. (a) Nanu Bank operated for years under the assumption that profitability can be increased by increasing rupee volumes. But that has not been the case. Cost analysis has revealed the following:

Activity		Activity Cost (₹)	Cost/Activity Driver	Activity Capacity Used		
				Checking Accounts	Personal Loans	Gold Visa
(i)	Providing ATM Services	5,50,000	No. of transactions	2,80,000	Nil	1,60,000
(ii)	Computer Processing	55,00,000	No. of transactions	35,00,000	5,00,000	10,00,000
(iii)	Issuing Statements	44,00,000	No. of transactions	14,00,000	2,00,000	6,00,000
(iv)	Customer Inquires	19,80,000	Telephone Calls	8,50,000	2,34,000	5,00,000
		Units of product		1,50,000	25,000	40,000

You are required to

(i) Calculate cost driver rates for each activity.

(ii) Calculate the cost of per unit for each product-checking Accounts, Personal Loans and Gold Visa, by using the cost driver rates computed in above (i).

4+6=10

(b) What are the objectives of Standard Costing technique? 5

Answer:

6. (a) (i) Computation of Cost Driver Rates:

	Activities	Activity cost (₹)	Cost Driver	No. of Units of Cost Driver	Cost Driver Rate (₹)
(i)	Providing ATM Service	550000	No. of transactions	440000	1.25
(ii)	Computer Processing	5500000	No. of transactions	5000000	1.10

(iii)	Issuing Statements	4400000	No. of Statements	2200000	2.00
(iv)	Customer inquires	1980000	Telephone Calls	1584000	1.25

(ii) Computation of per unit cost for each product

Activity \ Products		Checking Accounts (₹)	Personal Loans (₹)	Goldvisa (₹)
(i)	Providing ATM	280000 x 1.25 = 350000	---	16000 x 1.25 = 200000
(ii)	Computer Processing	3500000 x 1.1 = 3850000	500000 x 1.1 = 550000	1000000 x1.1 = 1100000
(iii)	Issuing Statements	1400000 x 2 = 2800000	200000 x 2 = 400000	600000 x 2 = 1200000
(iv)	Customer Inquires	850000 x 1.25 = 1062500	234000 x 1.25 = 292500	500000 x 1.25 = 625000
Total Cost (A)		8062500	1242500	3125000
Units of Product (B)		150000	25000	40000
Cost per unit of each product (A ÷ B)		₹ 53.75	₹ 49.70	₹ 78.125

(b) Objectives of Standard costing technique:

(i) To provide a formal basis for assessing performance and efficiency.
(ii) To control costs by establishing standards and analysis of variances.
(iii) To enable the principle of "Management by exception" to be practiced at the detailed, operational level.
(iv) To assist in setting budgets.
(v) The standard costs are readily available substitutes for actual average unit costs and can be used for stock and work-in-progress valuations, profit planning and decision making and as a basis of pricing where "costplus" systems are used.
(vi) To assist in assigning responsibility for non-standard performance in order to correct deficiencies or to capitalize on benefits.
(vii) To motivate staff and management.
(viii) To provide a basis for estimating.
(ix) To provide guidance on possible ways of improving performance.

7. (a) A company manufactures an Engineering product utilizing 90% capacity and produces 10800 units at a selling price of ₹ 500 per unit.
The following per unit Cost data are given:

	₹
Raw Material	**200**
Direct Labour cost	**60**
Variable Overhead	**40**
Variable Factory Overhead	**40**
Dealers commission	**20% on selling price**
Fixed Cost	**5,50,000 per annum**

The company was able to sell the entire products in the market to meet the demand of Local customers. Local market demand was for 10,800 units only.
Now, one of the dealers is willing to purchase additional 1200 units provided selling price is reduced to ₹ 400 per unit and he is also wiling to sacrifice 50% of his normal commission. Since the company has balance capacity of 10%, Management has expressed willingness to consider the proposal. Fixed costs will remain unaltered.

Management wants your views about the proposals. **4+4+2=10**

(b) State the tools and techniques which are normally used for cost reduction. **5**

Answer:

7. (a)

Statement of Profitability

Particulars	Present Production (₹)	Additional Production (₹)	Total (₹)
Production & Sales Units	10,800	1,200	12,000
Sales	54,00,000	4,80,000	58,80,000
Direct material @ ₹ 200	21,60,000	2,40,000	24,00,000
Direct Labour Cost @ ₹ 60	6,48,000	72,000	7,20,000
Variable O/H @ ₹ 40	4,32,000	48,000	4,80,000
Variable factory O/H @ ₹ 40	4,32,000	48,000	4,80,000
Commission @ 20% on selling price	10,80,000	48,000 (10% of SP)	11,28,000
Total variable cost	47,52,000	4,56,000	52,08,000
Contribution (S – V)	6,48,000	24,000	6,72,000
Less: Fixed Cost	5,50,000	---	5,50,000
Profit	98,000	24,000	1,22,000

Recommendation: The variable cost per unit of additional product will be (4,56,000 ÷ 1200) = ₹ 380. Since the proposal gives additional profit ₹ 24,000 the same should be accepted.

(b) The following tools and techniques are normally used for cost reduction:
(i) Value analysis or value engineering.
(ii) Setting standards for all elements of cost and constant comparison of actual with standard and analysis of variances.
(iii) Work study.
(iv) Job evaluation and merit rating.
(v) Quality control.
(vi) Use of techniques like Economic Order Quantity.
(vii) Classification and codification.
(viii) Standardization and simplification.
(ix) Inventory management.
(x) Benchmarking.
(xi) Standardization.
(xii) Business Process Re-engineering.

8. Write short notes on any three of the following: **5x3=15**
(a) Group Bonus Plan
(b) Cost Plus Contract
(c) Operating Costing
(d) Material Control
(e) Supply Chain Analysis

Answer:

8. (a) **Group Bonus Plan:**
Many times output of individuals cannot be measured. Similarly, the output of

individuals is dependent on the performance of the group. In such cases, rather than implementing individual bonus plan, group bonus plan is implemented. The total amount of bonus which is determined according to productivity can then be shared equally or in agreed proportion between the group members. The main objects of group bonus plans are as follows:

(i) Creation of team spirit
(ii) Elimination of excessive waste of materials and time
(iii) Recognition of group effort
(iv) Improving productivity

(b) **Cost-Plus Contract**:

This type of contract is generally adopted when the probable cost of contract cannot be ascertained in advance with reasonable accuracy. In this type of contract, the contractor receives his total cost plus a percentage of cost. These types of contract give protection to the contractor against fluctuations in profit as he is guaranteed about his Profit irrespective of actual cost. However, in order to avoid any dispute in future, it is always advisable to specify the admissible cost in advance. Similarly, the customer may also reserve the right of demanding "cost audit" in order to check the reliability of claim of the contactor regarding increase in costs.

(c) **Operating Costing**:

Operating costs are the costs incurred by undertaking which do not manufacture any product but provide a service. Such undertakings for example are – Transport concerns, Gas agencies, Electricity Undertakings; Hospitals, Theaters etc. Because of the varied nature of activities carried out by the service undertakings, the cost system used in obviously different from that followed in manufacturing concerns.

The essentials features of operating costs are as follows :

(1) The operating costs can be classified under three categories. For example in the case of transport undertaking these three categories are as follows:
   (i) Operating and running charges - It includes expenses of variable nature. For example expenses on petrol, diesel, lubricating oil, and grease etc.
   (ii) Maintenance Charges – These expenses are of semi-variable nature and includes the cost of tyres and tubes, repairs and maintenance, spares and accessories, overhaul etc.
   (iii) Fixed or standing charges: These includes garage rent, insurance, road licence, depreciation, interest on capital, salary of operating manager etc.
(2) The cost unit used is a double unit like passenger – mile, Kilowatt – hour etc. it can be implemented in all firms of transport, airlines, bus-service, etc. and by all firms of Distribution Undertakings.

(d) **Material Control**:

Is defined as systematic control and regulation of purchase storage and usage of materials in such a way as to maintain an even-flow of production and at the same time avoiding excessive investment in inventories. Efficient material control minimizes losses and wastage of materials which is not possible otherwise.

In other words, it is a system which ensures provision of right quantity of materials, right quality at the right time with the minimum investment in inventory.

(e) **Supply Chain Analysis:**

It means flow of goods and services and information from the initial sources of materials and sources to the delivery of products to customers regardless of whether their activities occur in the same organization or in other organization. Customers expect improved performance from companies through the supply chain. They

expect that the companies should perform all these activities in an efficient manner so as to reduce costs and also maintain quality of the product and the products available easily for them.