

Subject Name

Cost Accounting Mock Exam Paper

Rise School Of Accountancy

Cost Accounting M OCK

Marks:100 Time: 3.15 hour

Question :1

A company is reviewing its stock policy, and has the following alternatives available for the evaluation of stock number 12 789:

(i)	Purchase stock twice monthly,	100 units
(ii)	Purchase monthly,	200 units
(iii)	Purchase every three months,	600 units
(iv)	Purchase six monthly,	1200 units
(v)	Purchase annually,	2400 units

It is ascertained that the purchase price per unit is Rs. 0.80 for deliveries up to 500 units. A 5% discount is offered by the supplier on the whole order where deliveries are 501 up to 1000, and 10% reduction on the total order for deliveries in excess of 1000. Each purchase order incurs administration costs of Rs.5. Storage, interest on capital and other costs are Rs.0.25 per unit of average stock quantity held. You are required to advise management on the optimum order size. (Marks 7)

Question:2

The following data relate to a process of a single product in a manufacturing company for the month of April 2011:

		%	Units	Rs.
(i)	Opening work-in-process		10,000	
	Degree of completion:			
	Raw materials	100		60,000
	Labour	60		36,000
	Overheads	60		18,000
(ii)	Receipts from previous process		100,000	427,500
(iii)	Expenses incurred during the month:			
	Raw materials			197,500
	Labour			345,575
	Overheads			172,800
(iv)	Closing work-in-process		7,500	
	Degree of completion:			
	Raw materials	100		
	Labour & overheads	50		

(v)	Abnormal Loss		5,000
	Degree of completion:		
	Raw materials	100	
	Labour & overheads	80	

(vi) Normal loss is 5% of current input and sold @1.5 each

Units completed are transferred to warehouse. The company uses the FIFO method of valuation.

Required: Prepare:

(a) Statement of equivalent units;	(03 marks)
(b) Statement of cost per equivalent unit and total cost;	(04 marks)
(c) Process account.	(05 marks)

Question:3

HICO Co is a manufacturing company that uses standard absorption costing and variance analysis to control its costs and revenues. The standard cost card for its single product is given below.

	Rs
Direct materials: 4 kg at Rs2.50 per kg	10
Direct labour: 2 hours at Rs12 per hour	24
Fixed overhead: 2 hours at Rs6 per direct labour	12
hour	
Standard cost per unit	46

In the most recent period, 12,000 units were produced. Budgeted production for the period was 10,000 units. Actual direct materials used cost Rs 140,400 and actual direct labour cost was Rs 345,000 for the 27,600 actual hours worked. Actual fixed overhead incurred was Rs 115,000.

HICO Co's management accountant wishes to reconcile budgeted and actual cost for the period. He has correctly calculated that the direct material price and usage variances were Rs 5,400 adverse and Rs 15,000 adverse respectively, but he has asked you to complete the reconciliation.

Required:

Calculate the following variances for the most recent period:

- (i) Direct labour rate variance;
- (ii) Direct labour efficiency variance;
- (iii) Fixed overhead expenditure variance;
- (iv) Fixed overhead capacity variance;
- (v) Fixed overhead efficiency variance.

Question : 4

A company manufactures a single product with a capacity of 150,000 units per annum. The summarized profitability statement for a year is as under:

(15Marks)

Particulars	Amount	Amount
	Rs.	Rs.
Sales: 1 00 000 units @ Rs.15 per unit		1, 500,000
Less: Expenses		
Direct materials	300,000	
Direct labor	200,000	
Production overheads – variable	60,000	
Production overheads – fixed	3,00,000	
Administrative overheads – fixed	150,000	
Selling and distribution overheads – variable	90, 000	
Selling and distribution overheads – fixed	150,000	
Total cost of sales		(1, 250,000)
Profit		250,000

You are **required** to evaluate the following options:

1) What will be the amount of sales required to earn a target profit of 25% on sales, if the packing is improved at a cost of Re.1 per unit?

2) There is an offer from a large retailer for purchasing 30, 000 units per annum subject to providing a packing with a different brand name at a cost of Rs.2 per unit. However, in this case there will be no selling and distribution expenses. Also this will not in any way affect the company's existing business. What will be the breakeven price for this additional offer?

3) If an expenditure of Rs.300, 000 is made on advertising, the sales would increase from the present level of 100000 units to 120000 units at a price of Rs.18 per unit. Will that expenditure be justified?

4) If the selling price is reduced by Rs.2 per unit, there will be 100% capacity utilization. Will the reduction in selling price be justified? (Marks 15)

Question:5 (a)

Pak Ltd. manufactures and sells children's toys of high quality over an extensive market utilizing the services of skilled artists who are paid at an average rate of Rs.15 per hour. The total number of skilled hours available in a year is only 14000. The details of planned production for 2008-09; estimated cost and unit selling prices are given below:

Product [Toy]	Production Planned [Units]	Direct Materials Per Unit Rs.	Direct Labour Per Unit Rs.	Fixed Overheads Per Unit Rs.	Selling Price Per Unit Rs
Α	3000	20	10	15	70
В	4000	24	12	18	92
С	4000	32	12	18	95
D	3000	40	16	24	110
E	2000	60	20	30	180

Variable overheads costs amount to 50% of the direct labor cost. The company has estimated the following maximum and minimum demands for each product.

Particulars	Α	В	С	D	E
Maximum – Units	5000	6000	6000	4000	4000
Minimum - Units	1000	1000	1000	500	500

In order to have market share in future, company cannot reduce the sale of any product below the minimum demand in market.

Required work out profit as per the production plan of the company and also compute the optimum profit in the given situation. (15 marks)

Question:5 (b) Hammad company has decided to distribute the cost of service departments by the algebraic method. The production departments are PDN-1 and PDN-2 and the monthly data as under:

Departments	Actual Factory Overheads	Service Provided	Service Provided
	cost before distribution	SR 1	SR 2
	Rs. In million		
PDN 1	84.0	40%	50%
PDN 2	58.0	50%	30%
SR 1	20		20%
SR 2	17.6	10%	

Required:

Work out total factory overheads of producing department PND-1 and PND-2 after distribution of service department's costs. (8 marks)

Question:6 Bits and Pieces (B&P) operates a retail store selling spares and accessories for the car market. The store has previously only opened for the six days a week for the 50 working weeks in the year, considering also opening on Sunday.

The sales of the business on Monday through to Saturday averages at Rs. 10,000 per day with average gross profit of 70% earned.

B&P expected the gross profit % earned on Sunday will be 20% lower than the average earned on the other days in the week. This is because they plan to offer substantial discounts and promotions on Sunday to attract customers. Given the price reduction, Sunday sale revenue are expected to be 60% more than the average daily sale revenue for the other days. These Sunday sales estimates are for the new customers only, with no allowance being made for those customers that may transfer from other days. B&P buys all its goods from one supplier. This supplier gives a 5% discount on all purchases if annual spending exceeds Rs.1, 0000,000.

It has been agreed to pay time and a half to sales assistant that work on Sunday. The normal hourly rate is 20/hr. In total, five sales assistants will be needed for the six hours that the store will be opened on the Sunday. They will also be able to take a half day off (four hours) during the week. Staffing levels will be allowed to reduce slightly during the week to avoid extra cost being incurred.

The staff will be supervised by a manager, currently employed by the company and paid an annual salary of Rs. 80,000. If he works on Sunday he will take the equivalent time off during the week when the

assistant manager is available to cover for him at no extra cost to B&P. He will be also be paid a bonus of 1% of the extra sales generated on the Sunday project.

The store will have to be lit at cost of Rs. 30 per hour and heated at a cost of Rs.45/hr. The heating will be come on two hour before the store open in 25 "winter" weeks to make sure it is warm enough for customers to come in at opening time. The store is not heated in other weeks.

The rent of the store amount to Rs. 420,000 annum.

(15 marks)

Calculate weather the Sunday opening incremental revenue exceeds the incremental cost over a year and on this basis reach a conclusion as to whether Sunday opening is financially justifiable.

Question:7 AZKA Manufacturing company is involved in manufacturing and sales of single product called AZKA. Sales and operating profits of the company for the first two quarter of the year were as follows:

	First Quarter (Rs.)	Second Quarter (Rs.)	Increase %
Sales	750,000,000	1,125,000,000	50%
Operating Profit	198,750,000	208,650,000	4.9%

Directors of the company are concerned about the lower profitability in second quarter, as despite 50% increase in sales, operating profit increased by a nominal percentage only. The other data relating to company's operations is as under:

		First	Second
		Quarter	Quarter
Sales in units	-actual	1,000,000	1,500,000
	-budgeted	1,500,000	1,500,000
Production in units	-actual	1,500,000	1,200,000
	-budgeted	1,500,000	1,500,000
Ending inventory in units		500,000	200,000
Sales price per unit	Rs.	750	750
Variable manufacturing costs per unit	Rs.	250	250
Fixed manufacturing costs	Rs.	450,000,000	450,000,000
Marketing and administrative expenses	Rs.	1,250,000	1,350,000

Required:

Required:

- a) Prepare income statement for second quarter under:
 - i) Absorption costing
 - ii) Direct costing
- b) Prepare a comparative income statement by using absorption costing method for both quarters and identify the difference to reconcile the profits (13 marks)

Cost Accounting

(Suggested Answer)

Module : D

Answer 1:

The purchase cost is not constant per unit. It is therefore not possible to use the EOQ formula. Instead the following schedule of costs should be prepared:

Evaluation of optimum order size

Size of order	No. of Annual orders	Purchase cost (WI)	Storage cost	Admin. cost	Total cost
		(Rs)	(Rs)	(Rs)	(Rs)
2400	1	1728 (0.72)	300	5	2033
			(24000/2 x.25)		
1200	2	1728 (0.72)	150	10	1888
600	4	1824 (0.76)	75	20	1919
200	12	1920 (0.80)	25	60	2005
100	24	1920 (0.80)	12.50	120	2052.50

It is recommended that two orders be placed per year for 1200 units.

	(Rs)
Calculation of cost 2(1200 × 0.80 – 10%) =	1728
Add: Storage, average quantity held 600 × 0.25 =	150
Add two orders placed per annum × 5 =	10
	Rs1888

Answer 2:

(a) Statement of equivalent units

Units input	Particulars	Units output	Ма	terial	La	bour	Ove	erhead
10,000	Opening WIP	10,000	%	Units -	% 40	Units 4,000	% 40	Units 4,000
-,	units, completed and transferred to warehouse	-,			-	,	-	,
100,000	Units completed and transferred to warehouse	82,500	100	82,500	100	82,500	100	82,500
	Closing WIP	7,500	100	7,500	50	3,750	50	3,750

	Normal loss (5%)	5,000	-	-	-	-	-	-
	Abnormal loss	5,000	100	5,000	80	4,000	80	4,000
110,000	Total	110,000		95,000		94,250		94,250

(b) Statement of cost per equivalent unit and total cost

Particulars	Previous	Material	Labour &	Total
	Process		Overhead	
Cost	427,500	197,500	518,375	
			(345,575+172800)	
Less: Recovery from sale		7,500		
of 5,000 units @ 1.5/ unit				
	427,500	190,000	518,375	
	95000	95000	94,250	
	(100,000-5000)			
Cost per equivalent unit:	4.5			
Material		2		
Conversion			5.5	
Total				12

Total cost of 92,500 completed units transferred to warehouse	Rs.
Cost of 10,000 completed opening units 114,000 + (4,000 x 5.5)	136,000
Cost of 82,500 completed units @ 12	990,000
Total cost of 92,500 completed units	1,126,000
Cost of 7,500 closing WIP units (7,500xRs. 6.5) + (3,750x5.50)	69,375
Cost of 5,000 abnormal loss units (5,000xRs. 6.5) + (4,000x5.50)	54,500
	1,249,875

(c) Process Account

Particulars	Units	Rs.	Particulars	Units	Rs.
Opening WIP	10,000	114,000	Normal loss	5,000	7,500
		(60+36+18)			(5000x1.5)
Units received	100,000	427,500	Completed units(bal)	92,500	1,126,000
Expenses					
incurred					
Material		197,500	Closing WIP	7,500	69,375
Labour		345,575	Abnormal loss	5,000	54,500
Overhead		172,800			
	110,000	1,257,375		110,000	1,257,375

Answer:3

(a) Standard cost variances

Direct labour	
Actual hours at actual rate	Rs 345,000
Actual hours at standard rate (27,600 hours x Rs 12 per hour)	Rs 331,200
Rate variance >	Rs 13,800 adverse

Actual hours at standard rate (27,600 hours x Rs 12 per hour)	Rs 331,200
Standard hours at standard rate (12,000 units x 2 hours x Rs12)	Rs 288,000
Efficiency variance >	Rs 43,200 adverse
Fixed Overhead	
Actual fixed overhead	Rs 115,000
Budgeted fixed overhead (10,000 units x Rs 12 per unit)	Rs 120,000
Expenditure variance >	Rs 5,000 favourable
Budgeted fixed overhead (10,000 units x Rs 12 per unit)	Rs 120,000
Actual hours at standard rate (27,600 hours x Rs 6 per hour)	Rs 165,600
Capacity variance >	Rs 45,600 favourable
Actual hours at standard rate (27,600 hours x Rs 6 per hour)	Rs 165,600
Standard hours at standard rate (12,000 units x 2 hours x Rs 6)	Rs 144,000
Efficiency variance >	Rs 21,600 adverse

Answer 4

Working Note No. 1

Statement Showing Total Contribution and Contribution Per Unit

Particulars	Amount	Amount
	Rs.	Rs.
Sales: 1 00 000 units @ Rs.15 per unit		1, 500,000
Less: Variable Costs:		
Direct materials	300,000	
Direct labor	200,000	
Production overheads – variable	60,000	
Selling and distribution overheads – variable	90, 000	
Total Variable Cost		(650,000)
Contribution [Sales – Total Variable Cost]		850,000

Variable Cost Per Unit = 650,000 /1, 00,000 = Rs.6.50 Contribution Per Unit = 850,000 /1, 00,000 = Rs.8.50

Working Note No. 2

Total Fixed Cost:

Production overheads :	Rs.300, 000
Administration overheads :	Rs.150, 000
S & D Overheads :	Rs.150, 000
Total fixed costs :	Rs.600, 000

1) Amount of sales required to earn a target profit of 25% on sales after improving the packing:

Present variable cost per unit [Working Note No.1] =	Rs.6.50
Additional cost of improvement in packing =	Re.1.00
Revised variable cost per unit =	<u>Rs.7.50</u>
Revised contribution per unit (15-7.5)	<u>Rs.7.50</u>

Profit/volume ratio = Rs.7.50/Rs.15 * 100 = 50%

Let X is the amount of sales to earn desired profit, the amount of sales will be computed with the help of the following formula

S = Fixed Cost + Desired Profit /Profit/Volume Ratio Therefore **S**= Rs.600, 000 + .25 **S**/50% = Rs.2,400,000 Note: Total fixed cost is given in Working Note No.2 above Amount of sales required to earn the profit is Rs. 1,240, 000 and the amount of profit is Rs.375,000 [25% of sales]

2) Evaluation of purchase offer by a large retailer: 30 000 units, additional packing cost of Rs.2 per unit

Deviced veriable east per unit :	Do 7 60
Add: Packing expenses :	Rs.2.00
Less: S & D Overheads :	Rs.0.90
Present variable cost per unit :	Rs.6.50

Revised variable cost per unit : Rs.7.60

The current selling price is Rs.15 per unit and after considering the revised variable cost, the contribution per unit works out Rs.15 – Rs.7.60 = Rs.7.40. Since the fixed costs are not going to increase, there will be additional contribution of 30 000 units * Rs.7.40 = Rs.222, 000 which will the additional profit and hence the offer can be accepted. The breakeven price for this offer will be Rs.7.60 per unit, which is equal to the variable cost per unit.

3) Evaluation of proposal of incurring additional advertising expenses of Rs.3, 00,000 Particulars Amount [Rs.]

Revised Selling Price per unit	18.00	
Less: variable cost [working note no.1] per un	it <u>6.50</u>	
Contribution per unit	11.50	
Total contribution : 120, 000 * Rs.11.50 =		1, 380, 000
Less: Fixed cost: Current	Rs.600, 000	
Addl. Expenditure on Advertising	<u>Rs.300, 000</u>	<u>(900, 000)</u>
Profit		<u>480,000</u>

Since the amount of profit has increased from the present Rs.250, 000 to Rs.480, 000 the expenditure on advertising is justified.

4) Reduction in selling price for increasing capacity utilization to 100%

Particulars Amount	Rs.
New selling price per unit (15-2)	13.00
Less: variable cost per unit	6.50
Contribution per unit	6.50
Total Contribution 150,000 units * Rs.6.50 =	975, 000
Less: Fixed cost	(600, 000)
Profit	375,000

It can be seen that the existing profit can increase by reducing the selling price up to Rs.13 per unit and thus increasing the capacity utilization to 100% and hence the proposal is justified.

Answer 5:

In the example, the direct labour hour is the key factor or constraint. The availability of the same is only 14000 labour hours and hence the priority of the products will have to be decided as all the product cannot be produced equal to the maximum quantity. The contribution per direct labour hour will be criteria for determining the priority. In the following table the contribution per unit and per direct labour hour is shown.

Particulars	Α	В	С	D	E
Sale Price (per unit)	70	92	95	110	180
Less- variable cost per unit					
Direct material	20	24	32	40	60
Direct Labor	10	12	12	16	20
Variable Overhead	5	6	6	8	10
Contribution	35	50	45	46	90
	÷	÷	÷	÷	÷
Limiting factor (hours/unit)	0.67	0.8	0.8	1.06	1.33
Contribution Per Scarce factor (Per Direct labor Hour)	52.23	62.5	56.25	43.39	67.66
Ranking	4	2	3	5	1

1] Statement showing Contribution per Direct Labour Hour and Priority of Production

* Direct labour hours for each product is computed by dividing the direct labor cost per unit of each product by direct labor rate per hour, which is Rs.15.

The next step in the problem is to work out the amount of profit as per the production plan prepared by the company. This computation is shown in the next statement.

2] Statement showing Amount of Profit as per Production Plan of the company

Particulars	Α	В	С	D	E	
No of Units to be sold	3000	4000	4000	3000	2400	
Contribution	35	50	45	46	90	
Total contribution	105000	200000	180000	138000	216000	
Less- Total Fixed Cost (3000x15)	45000	72000	72000	72000	72000	333,000
Profit	60000	128000	108000	66000	144000	

3] Statement showing Production Plan for Optimizing Profit

Product in order of priority	Units	No of hours Required	Contribution per Unit	Total Contribution
E(500+3500)	4000	5334	90	360000
B(1000+5000)	6000	4800	50	300000
C(1000+2331)	3331 (bal)	2665	45	149895
A(1000)	1000	667	35	35000
D(500)	500	534	46	23000
		14000		867,895

Amount of maximum profit = Total Contribution – Total Fixed Cost

= Rs.8, 67,895 - Rs.3, 33,000 = Rs.5, 34, 895

** Number of units X labour hours per unit

Answer

SR-1 = Rs. 20m + 0.20SR-2 SR-1 = Rs.17.6m + 0.10 SR-1 SR-1 = Rs. 20m + 0.20(Rs.17.6m + 0.10 SR-1) 0.98 SR-1 = Rs. 23.52m SR-1 = Rs.24million SR-2 = Rs. 17.6 m + 0.10(Rs. 24 m) SR-2 = Rs. 20 million

Total PDN 1 overhead = Rs. 84m+ 0.4(SR-1) + 0.5(SR-2) = Rs. 84 m +Rs. 9.6 m + Rs. 10m = 103.6 million

Answer. BITS AND PIECES

(a) The decision to open on Sundays is to be based on incremental revenue and incremental costs:

	Ref	Rs.	Rs.
Incremental Sale	W1		800,000
Incremental cost			
Cost of Sales	W2	335,000	
Staff	W3	45,000	
Lighting	W4	9,000	
Heating	W5	9,000	
Manager's bonus	W6	8,000	
Total			(406,000)
Net incremental revenue			394,000

Conclusion

On the basis of the above it is clear that the incremental revenue exceeds the incremental costs and therefore it is financially justifiable.

W1 Incremental Revenue

Day	Sales Rs.	Gross	Gross	Cost of
		Profit %	Profit Rs.	Sales Rs.
Average	10,000	70%		
Sunday (+60% of average)	16,000	50%	8,000	8,000
Annually (50days)	800,000		400,000	400,000
Current results (300 days)	3,000,000	70%	2,100,000	900,000
New Results	3,800,000	65.8%	2,500,000	

W2 purchasing and discount on purchasing:

Extra purchasing from Sunday trading is 800,000 - 400,000 = 400,000

Current annual purchasing is 18,000 * 50 = 900,000 New annual purchasing is (900,000+400000) * .95 = 1,235,000 Incremental cost is 1,235,000-900,000 = 335,000 (a 65,000 discount)

W3 Staff cost:

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Staff costs on Sunday are 5 staff * 6 hours * 20 per hour * 1.5 = 900 per day. Annual cost is 900 * 50 = 45,000.

W4 Lighting costs: these are 6 hours *30/hour *50 = 9,000

W5 Heating costs: heating cost in winter is 6+2 hours *45 *25 = 9,000 **W6 Manager's bonus:** this is based on the incremental revenue 800,000 * 1% = 8,000 (or 160 per day)

Answer

(a) Income statement of second quarter

000

	Absorption costing	Marginal costing
Sales (given)	1,125,000	1,125,000
Cost of sales		
Opening stock	275000	125000
	(500,000*550)	(500,000*250)
Production cost	660,000	300,000
	(1,200,000*550)	(1,200,000*250)
Closing stock	110000	50000
	(200000*550)	(200000*250)
Fixed production cost	-	450,000
	825,000	825,000
Under absorbed fixed overheads	90,000	
(300000*300)		
	915,000	825,000
Gross Profit	210,000	300,000
Marketing and administrative expenses	(1350)	(1350)
Net profit	208,650	298,650

Workings

Fixed overheads absorption rate: 450,000,000/1,500,000 = 300/unit

(B) Comparative statement:

	First quarter	Second quarter	Increase /(Decrease) in profit
Sales (given)	750000	1,125,000	375,000
Cost of sales			
Opening stock	-	275,000 (500,000*550)	(275,000)
Production cost	825000 (1,500,000*550)	660,000 (1,200,000*550)	165,000
Closing stock	275000 (500,000*550)	110,000 (200000*550)	(165,000)
	550,000	825,000	(275,000)
Under absorbed fixed overheads (300000*300)	-	90,000	(90,000)
	550,000	915,000	(365,000)
Gross Profit	200,000	210,000	10,000
Marketing and administrative expenses	(1,250)	(1,350)	(100)
Net profit	198,750	208,650	9,900

Answer

(a) Income statement of second quarter

000

	Absorption costing	Marginal costing
Sales (given)	1,125,000	1,125,000
Cost of sales		
Opening stock	275000	125000
	(500,000*550)	(500,000*250)
Production cost	660,000	300,000
	(1,200,000*550)	(1,200,000*250)
Closing stock	110000	50000
	(200000*550)	(200000*250)
Fixed production cost	-	450,000
	825,000	825,000
Under absorbed fixed overheads	90,000	
(300000*300)		
	915,000	825,000
Gross Profit	210,000	300,000
Marketing and administrative expenses	(1350)	(1350)

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Net profit	208,650	298,650

Workings

Fixed overheads absorption rate: 450,000,000/1,500,000 = 300/unit

(B) Comparative statement:

	First quarter	Second quarter	Increase /(Decrease) in profit
Sales (given)	750000	1,125,000	375,000
Cost of sales			
Opening stock	-	275,000 (500,000*550)	(275,000)
Production cost	825000 (1,500,000*550)	660,000 (1,200,000*550)	165,000
Closing stock	275000 (500,000*550)	110,000 (200000*550)	(165,000)
	550,000	825,000	(275,000)
Under absorbed fixed overheads (300000*300)	-	90,000	(90,000)
	550,000	915,000	(365,000)
Gross Profit	200,000	210,000	10,000
Marketing and administrative expenses	(1,250)	(1,350)	(100)
Net profit	198,750	208,650	9,900