CA Intermediate - Cost & Management Accounting

May 2019 - Suggested Answers

*Question No. **1** is compulsory*

*Answer any **four** questions from the remaining **five** questions*

Que. 1(a) : [5 Marks]

Following data is available for ABC Ltd.

Standard working hours	8 hours per day of 5 days per week
Maximum Capacity	60 employees
Actual working	50 employees
Actual hours expected to be worked per four week	8,000 hours
Standard hours expected to be earned per four week	9,600 hours
Actual hours worked in the four week period	7,500 hours
Standard hours earned in the four week period	8,800 hours

The related period is four weeks.

Calculate the following Ratios :

(i) Efficiency Ratio

(ii) Activity Ratio

(iii) Standard Capacity Usage Ratio

(iv) Actual Capacity Usage Ratio

(v) Actual Usage of Budgeted Capacity Ratio

Ans. 1(a) :

This question is from Budget & Budgetary Control Topic.

Note : The language and terms used in this question by ICAI is little confusing.

(i) Efficiency Ratio:

$$= \frac{\text{Standard Hrs.}}{\text{Actual Hrs.}} \times 100 = \frac{8{,}800 \text{ hrs}}{7{,}500 \text{ hrs.}} \times 100 = \mathbf{117.33\%}$$

(ii) Activity Ratio

$$= \frac{\text{Standard Hrs.}}{\text{Budgeted Hrs.}} \times 100 = \frac{8{,}800 \text{ hrs}}{8{,}000 \text{ hrs}} \times 100 = \mathbf{110\%}$$

(iii) Standard Capacity Usage Ratio :

$$= \frac{\text{Budgeted Hours}}{\text{Max. possible hours in the budgeted period}} \times 100$$

$$= \frac{8{,}000 \text{ hours}}{9{,}600 \text{ hours}} \times 100 = \mathbf{83.33\%}$$

(iv) Actual Capacity Usage Ratio :

$$= \frac{\text{Actual Hours worked}}{\text{Max. possible working hours in a period}} \times 100$$

$$= \frac{7{,}500 \text{ hours}}{9{,}600 \text{ hours}} \times 100 = \mathbf{78.125\%}$$

(v) Actual Usage of Budgeted Capacity Ratio :

$$= \frac{\text{Actual working Hours}}{\text{Budgeted Hours}} \times 100 = \frac{7{,}500 \text{ hours}}{8{,}000 \text{ hours}} \times 100 = \mathbf{93.75\%}$$

Working Notes :

1. Maximum Capacity in a Budgeted period

   = 60 Employees x 8 Hrs. per day X 5 Days per week x 4 Weeks = 9,600 Hrs.

2. Budgeted Hours

   = 50 Employees x 8 Hrs. per day X 5 Days per week x 4 Weeks = 8,000 Hrs.

3. Actual Hours = 7,500 Hrs. (given)

4. Standard Hours required for Actual Output = 8,800 Hrs. (given)

Que. 1(b) : [5 Marks]

M/s. Zeba Private Limited allotted a standard time of 40 hours for a job and the rate per hour is ₹ 75. The actual time taken by a worker is 30 hours.

You are required to calculate the total earnings under the following plans:

(i) Halsey Premium Plan (Rate 50%)

(ii) Rowan Plan

(iii) Time Wage System

(iv) Piece Rate System

(v) Emerson Plan

Ans. 1(b) :

This question is from Labour Cost Topic.

It is a very simple and bonus question.

Such questions are covered in our classroom notes - Volume I.

Note : Emerson Plan is removed from the syllabus by ICAI from November, 2019 Exam and onwards. Hence, you may not study it.

(i) Halsey Premium plan :

= (Time taken x Rate per hour) + (50% x Time saved x Rate per hour)

= (30 hours x Rs. 75) + (50% x 10 hours x Rs. 75)

= Rs. 2,250 + Rs. 375 = **Rs. 2,625**

(ii) Rowan Premium Plan :

$$= (\text{Time taken x Rate per hour}) + \left[\frac{\text{Time saved}}{\text{Time allowed}} \times \text{Time taken x Rate per hour} \right]$$

$$= (30 \text{ hours x Rs. } 75) + \left[\frac{10}{40} \times 30 \times \text{Rs. } 75 \right]$$

= Rs. 2,250 + Rs. 562.5 = **Rs. 2,812.5 or Rs. 2,813 (approx)**

(iii) Time Wage System :

= Time taken x Rate per hour

= 30 x Rs. 75 = **Rs. 2,250**

(iv) Piece Rate System

= Std. Time x Rate per hour

= 40 x Rs. 75 = **Rs. 3,000**

Note : In absence of information regarding actual output, piece rate per unit and standard time per piece, ICAI has considered standard time required for actual output for calculation of wages. It is one and the same.

(v) Emerson Plan

Efficiency level = Std. time / Actual time = 40 / 30 = 133.33%

Wages = Time taken x (120% + 33.33%) of Rate per hour

= 30 hours x 153.33% of Rs. 75

= **Rs. 3,450**

Que. 1(c) : [5 Marks]

A Factory is engaged in the production of chemical Bomex and the course of its manufacture a by-product Cromex is produced which after further processing has a commercial value. For the month of April 2019 the following are the summarised cost data:

Particulars	Joint Expenses (₹)	Separate Expenses (₹)	
		Bomex	Cromex
Materials	1,00,000	6,000	4,000
Labour	50,000	20,000	18,000
Overheads	30,000	10,000	6,000
Selling Price per unit		100	40
Estimated profit per unit on sale of Cromex			5
Number of units produced		2,000 Units	2,000 Units

The factory uses net realisable value method for appointment of joint cost to by-products.

You are required to prepare statements showing:

(i) Joint cost allocable to Cromex

(ii) Product wise and overall profitability of the factory for April 2019.

Ans. 1(c) :

(i) Statement Showing Joint Cost Allocation to 'Cromex'

Particulars	**Cromex (₹)**
Sales (Rs. 40 x 2,000 units)	80,000
Less: Post Split Off Costs (4,000 + 18,000 + 6,000)	(28,000)
Less : Estimated Profit (Rs. 5 x 2,000 units)	(10,000)
Joint cost allocable to Cromex	42,000

(ii) Statement Showing Product Wise and Overall Profitability

Particulars	**Bromex (Rs.)**	**Cromex (Rs.)**	**Total (Rs.)**
Sales	2,00,000	80,000	2,80,000
Less: Share of Joint Expenses	*1,38,000	42,000	**1,80,000
Less: Post Split Off Costs	36,000	28,000)	64,000
Profit	26,000	10,000	36,000

(*) 1,80,000 – 42,000 (**) 1,00,000 + 50,000 + 30,000

Student Note : The question says that, "The factory uses net realisable value method for appointment of joint cost to by-products". However, the answer of ICAI is based on "Reverse Cost Method." This method is now deleted from the ICAI module, but it is used here.

We generally say that there can be 3 answers to a question. These 3 answers are : (1) Correct answer, (2) Wrong answer and (3) ICAI answer. The above answer is ICAI answer.

Que. 1(d) : [5 Marks]

M/s. Abid Private Limited disclosed a net profit of ₹ 48,408 as per cost books for the year ending 31st March 2019. However, financial accounts disclosed net loss of ₹ 15,000 for the same period. On scrutinizing both the set of books of accounts, the following information was revealed:

Works Overheads under-recovered in Cost Books	48,600
Office Overheads over-recovered in Cost Books	11,500
Dividend received on Shares	17,475
Interest on Fixed Deposits	21,650
Provision for doubtful debts	17,800
Obsolescence loss not charged in Cost Accounts	17,200
Stores adjustments (debited in Financial Accounts)	35,433
Depreciation charged in financial accounts	30,000
Depreciation recovered in Cost Accounts	35,000

Prepare a Memorandum Reconciliation Account.

Ans. 1(d) :

This question is from Cost Ledger Accounting Topic.

It is similar to the question solved in our classroom notes - Volume III.

Memorandum Reconciliation Account

Dr. Cr.

Particulars	Rs.	Particulars	Rs.
		By Net Profit as per Costing books	48,408
To Works overheads under recovered in Cost Accounts	48,600	By Office overheads over recovered in cost accounts	11,500
To Provision for doubtful debts	17,800	By Dividend received on shares	17,475
To Obsolescence loss	17,200	By Interest fixed deposit	21,650
To Store adjustment	35,433	By Depreciation charged in cost books	35,000
To Depreciation charged in financial accounts	30,000	By Net loss as per financial accounts	15,000
	1,49,033		1,49,033

Note : This question may also be solved by taking net loss as per financial accounts as basis and then moving towards profit as per costing books.

Que. 2(a) : [10 Marks]

M/s. Areeba Private Limited has a normal production capacity of 36,000 units of toys per annum. The estimated cost of production is as under :

(i)	Direct Material	Rs. 40 per unit
(ii)	Direct Labour	Rs. 30 per unit (subject to a minimum of Rs. 48,000 p.m.)
(iii)	Factory Overheads :	
	(a) Fixed	Rs. 3,60,000 per annum
	(b) Variable	Rs.10 per unit
	(c) Semi-variable	Rs. 1,08,000 per annum up to 50% capacity and additional Rs.46,800 for every 20% increase in capacity or any part thereof.

(iv) Administrative Overheads Rs. 5,18,400 per annum (fixed)
(v) Selling overheads are incurred at Rs. 8 per unit.
(vi) Each unit of raw material yields scrap which is sold at the rate of Rs. 5 per unit.
(vii) In year 2019, the factory worked at 50% capacity for the first three months but it was expected that it would work at 80% capacity for the remaining nine months.
(viii) During the first three months, the selling price per unit was Rs. 145.

You are required to:

(i) Prepare a cost sheet showing Prime Cost, Works Cost, Cost of Production and Cost of Sales.
(ii) Calculate the selling price per unit for remaining nine months to achieve the total annual profit of Rs. 8,76,600.

Ans. 2(a) :

It is a question on Cost Sheet but based on Marginal Costing Principles.

You will find a similar question in our classroom notes - Volume III (Marginal Costing).

(i) Cost Sheet of M/s. Areeba Pvt. Ltd. for the year 2019 :

Particulars	**3 Months**	**9 Months**	**Total**
Capacity utilisation	50%	80%	
Production in Units	[36,000 x 50% x 3/12] = 4,500	[36,000 x 80% x 9/12] = 21,600	26,100
	(₹)	**(₹)**	**(₹)**
Direct Material @ ₹ 40 per unit	1,80,000	8,64,000	10,44,000
Less: Scrap @ ₹ 5 per unit	(22,500)	(1,08,000)	(1,30,500)
∴ Net Materials consumed	1,57,500	7,56,000	9,13,500
Direct Wages @ ₹ 40 per unit or ₹48,000 p.m., whichever is higher	1,44,000	6,48,000	7,92,000
∴ **Prime Cost**	**3,01,500**	**14,04,000**	**17,05,500**
Factory overheads :			
- Fixed	90,000	2,70,000	3,60,000
- Variable @ ₹ 10 per unit	45,000	2,16,000	2,61,000
- Semi variable (see note below)	27,000	1,51,200	1,78,200
Works Cost	**4,63,500**	**20,41,200**	**25,04,700**
Add: Administrative overheads	1,29,600	3,88,800	5,18,400
∴ **Cost of Production**	**5,93,100**	**24,30,000**	**30,23,100**
Selling overheads @ ₹ 8 per unit	36,000	1,72,800	2,08,800
∴ **Cost of Sales**	**6,29,100**	**26,02,800**	**32,31,900**

Working Notes / Assumptions :

1. **Calculation of Semi Variable Overheads :**
   For 50% Capacity = 1,08,000 per annum
   Hence, for first 3 months = (1,08,000 x 3/12) = ₹ 27,000
   For 80% Capacity = (1,08,000 + 46,800 + 46,800) = 2,01,600 per annum
   Hence, for last 9 months = (2,01,600 x 9/12) = ₹ 1,51,200
2. Alternatively scrap of raw material can also be reduced from works cost.
3. Administrative overhead may be alternatively treated as a part of general overheads. In that case, Works Cost as well as Cost of Production will be same and Administration overheads will be added along with Selling overheads. However, cost of sales will remain the same.

(ii) Calculation of Selling price for nine months period :

Particulars	**Amount (₹)**
Total Cost of Sales from Cost Sheet	32,31,900
Add : Desired annual profit (given)	8,76,600
∴ Total sales value	41,08,500
Less: Sales value for first three months (₹ 145 x 4,500 units)	(6,52,500)
∴ Sales Value to be realised in next nine months	34,56,000
∴ Selling price per unit (Rs. 34,56,000 ÷ 21,600 units)	160

Que. 2(b) : [10 Marks]

KT Ltd. produces a product EMM which passes through two processes before it is completed and transferred to finished stock. The following data relate to May 2019 :

Particulars	**Process A (₹)**	**Process B (₹)**	**Finished Stock (₹)**
Opening Stock	5,000	5,500	10,000
Direct Materials	9,000	9,500	
Direct Wages	5,000	6,000	
Factory Overheads	4,600	2,030	
Closing Stock	2,000	2,490	5,000
Inter-process profit included in opening stock		1,000	4,000

Output of Process A is transferred to Process B at 25% profit on the transfer price and output of Process B is transferred to finished stock at 20% profit on the transfer price.
Stock in process is valued at prime cost. Finished stock is valued at the price at which it is received from Process B. Sales during the period are ₹ 75,000.

Prepare the Process cost accounts and Finished stock account showing the profit element at each stage.

Ans. 2(b) :

This question is from Process Costing Topic.
You will find similar questions in our classroom notes - Volume II

Process 'A' A/c

Particulars	Cost Rs.	Profit Rs.	Total Rs.
To, Opening Stock	5,000	--	5,000
To, Direct Material	9,000	--	9,000
To, Direct Wages	5,000	--	5,000
Prime cost of Production	19,000	--	19,000
Less: Closing Stock	(2,000)	--	(2,000)
Prime cost of transfer	17,000	--	17,000
To, Factory overheads	4,600	--	4,600
Total cost of Transfer	21,600	--	21,600
To, Costing P & L A/c [21,600 x 1/3]	--	7,200	7,200
By, transfer to Process 'B' A/c	21,600	7,200	28,800

Profit on Transfer = 25% on Transfer Price = 1/3rd on Cost Price

Process 'B' A/c

Particulars	Cost Rs.	Profit Rs.	Total Rs.
To, Opening Stock	4,500	1,000	5,500
To input received from Process 'A'	21,600	7,200	28,800
To, Direct Material	9,500	--	9,500
To, Direct Wages	6,000	--	6,000
Prime cost of Production	41,600	8,200	49,800
Less: Closing Stock * [2,490 x 8,200 / 49,800]	(2,080)	*(410)	(2,490)
Prime cost of transfer	39,520	7,790	47,310
To, Factory overheads	2,030	--	2,030
Total cost of Transfer	41,550	7,790	49,340
To, Costing P & L A/c [49,340 x 25%]	--	12,335	12,335
By, transfer to Finished Goods A/c	41,550	20,125	61,675

Profit on Transfer = 20% on Transfer Price = 25% on Cost Price

Finished Goods A/c

Particulars	Cost Rs.	Profit Rs.	Total Rs.
To, Opening Stock	6,000	4,000	10,000
To FG received from Process B	41,550	20,125	61,675
Total goods available for sale	47,550	24,125	71,675
Less: Closing Stock of FG [see note 2]	(3,317)	*(1,683)	(5,000)
* [5,000 x 24,125 / 71,675]			
Cost of goods sold	44,233	22,442	66,675
To, Costing P & L A/c [Bal. Fig.]	--	8,325	8,325
By, Sales A/c	44,233	30,767	75,000

Student Notes :

1. A student can present the answer in 'T' format i.e. Debit & Credit format.
2. ICAI has calculated unrealised profit on closing stock of finished goods as ₹ 1,631.
   i.e. [5,000 x 20,125 / 61,675]

   My personal opinion is that it should be calculated using 'Average Cost Method' uniformly for Process Accounts as well as Finished Goods Account.

Que. 3(a) : [10 Marks]

A gang of workers normally consists of 30 skilled workers, 15 semi-skilled workers and 10 unskilled workers. They are paid at standard rate per hour as under :

Skilled	Rs. 70
Semi-skilled	Rs. 65
Unskilled	Rs. 50

In a normal working week of 40 hours, the gang is expected to produce 2,000 units of output. During the week ended 31st March, 2019, the gang consisted of 40 skilled, 10 semi-skilled and 5 unskilled workers. The actual wages paid were at the rate of Rs. 75, Rs. 60 and Rs. 52 per hour respectively. Four hours were lost due to machine breakdown and 1,600 units were produced.

Calculate the following variances showing clearly adverse (A) or favourable (F)

(i) Labour Cost Variance

(ii) Labour Rate Variance

(iii) Labour Efficiency Variance

(iv) Labour Mix Variance

(v) Labour Idle Time Variance

Ans. 3(a) :

This question is from Standard Costing Topic.

You will find a similar question in our classroom notes - Volume III.

Working Notes :

(1) We have to first calculate Standard Hours required for actual output.

In 40 gang hours we expect to produce 2,000 units (given).

Hence, to produce actual output of 1,600 units, we need 32 standard gang hours.

Standard labour hours = Std. no. of workers in the gang x Std. gang hours

Skilled workers = 30 x 32 = 960 hours

Semi skilled workers = 15 x 32 = 480 hours

Unskilled workers = 10 x 32 = 320 hours

(2) Let's now calculate Actual Hours Paid for actual output.

As the normal working week is of 40 hours, everybody in the gang will be paid for 40 hours in a week.

Actual labour hours paid = Actual no. of workers in the gang x Actual gang hours paid

Skilled workers = 40 x 40 = 1,600 hours

Semi skilled workers = 10 x 40 = 400 hours

Unskilled workers = 05 x 40 = 200 hours

(3) Let's now calculate Actual Hours Worked after considering idle time of 4 hours.

Actual gang hours worked = 40 - 4 = 36 hours in a week.

Actual labour hours worked = Actual no. of workers in the gang x Actual gang hours worked

Skilled workers = 40 x 36 = 1,440 hours

Semi skilled workers = 10 x 36 = 360 hours

Unskilled workers = 05 x 36 = 180 hours

Main Answers :

1) Total Labour Cost Variances = Std. cost of actual output - Actual cost

= (Std. hours x Std. rate) – (Actual hours paid x Actual rate)

Skilled = (960 hrs. x Rs. 70) – (1600 hrs. x Rs. 75) = Rs. 52,800 (A)

Semi skilled = (480 hrs. x Rs. 65) – (400 hrs. x Rs. 60) = Rs. 7,200 (F)

Unskilled = (320 hrs. x Rs. 50) – (200 hrs. x Rs. 52) = Rs. 5,600 (F)

Total = Rs. 40,000 (A)

2) Labour Rate Variance = Actual hours paid x (Std. rate - Actual rate)

Skilled = 1600 hrs. x (Rs. 70 - Rs. 75) = Rs. 8,000 (A)

Semi skilled = 400 hrs. x (Rs. 65 - Rs. 60) = Rs. 2,000 (F)

Unskilled = 200 hrs. x (Rs. 50 - Rs. 52) = Rs. 400 (A)

Total = Rs. 6,400 (A)

3) Labour Efficiency Variance = Std. rate x (Std. Hrs. - Actual Hrs. paid)

Skilled	Rs. 70 x (960 hrs. - 1600 hrs.)	=	Rs. 44,800 (A)
Semi skilled	Rs. 65 x (480 hrs. - 400 hrs.)	=	Rs. 5,200 (F)
Unskilled	Rs. 50 x (320 hrs. - 200 hrs.)	=	Rs. 6,000 (F)
	Total	=	Rs. 33,600 (A)

4) Idle Time Variance = Std. Rate x (Actual Hrs. paid - Actual Hours worked)

Skilled	Rs. 70 x (1600 hrs. - 1,440 hrs.)	=	Rs. 11,200 (A)
Semi skilled	Rs. 65 x (400 hrs. - 360 hrs.)	=	Rs. 2,600 (A)
Unskilled	Rs. 50 x (200 hrs. - 180 hrs.)	=	Rs. 1,000 (A)
	Total	=	Rs. 14,800 (A)

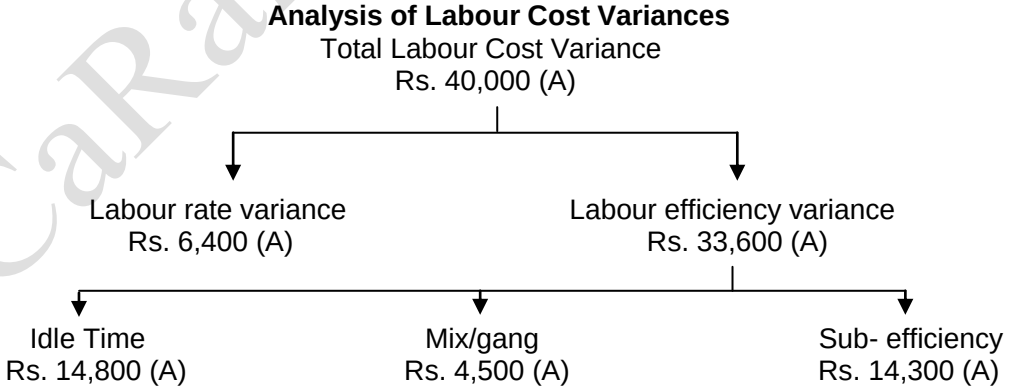
5) Labour Mix Variance = Std. Rate x (Std. mix - *Actual mix)

* Actual mix = Actual hours worked

Worker	Std. rate Rs.	Calculation	Std. mix hrs.	Actual mix hrs.	Variance Rs.
Skilled	70	1980 x 30/55	1080	1440	25,200 (A)
Semi skilled	65	1980 x 15/55	540	360	11,700 (F)
Unskilled	50	1980 x 10/55	360	180	9,000 (F)
Total			1980	1980	4,500 (A)

6) Sub-efficiency Variance = Std. Rate x (Std. hrs. - Std. mix)

Skilled	Rs. 70 x (960 hrs. - 1080 hrs.)	=	Rs. 8,400 (A)
Semi skilled	Rs. 65 x (480 hrs. - 540 hrs.)	=	Rs. 3,900 (A)
Unskilled	Rs. 50 x (320 hrs. - 360 hrs.)	=	Rs. 2,000 (A)
	Total	=	Rs. 14,300 (A)



Que. 3(b) : [10 Marks]

MNO Ltd. manufactures two types of equipment A and B and absorbs overheads on the basis of direct labour hours. The budgeted overheads and direct labour hours for the month of March 2019 are Rs.15,00,000 and 25,000 hours respectively. The information about the company's products is as follows:

Particulars	**Equipment**	
	A	**B**
Budgeted Production Volume	3,200 units	3,850 units
Direct Material Cost	₹ 350 per unit	₹ 400 per unit
Direct Labour Cost : A : 3 hours @ ₹ 120 per hour B : 4 hours @ ₹ 120 per hour	₹ 360	₹ 480

Overheads of ₹ 15,00,000 can be identified with the following three major activities:

Order Processing	₹ 3,00,000
Machine Processing	₹ 10,00,000
Product Inspection	₹ 2,00,000

These activities are driven by the number of orders processed, machine hours worked and inspection hours respectively. The data relevant to these activities is as below :

Equipment	Orders processed	Machine hours worked	Inspection hours
A	400	22,500	5,000
B	200	27,500	15,000
Total	600	50,000	20,000

Required :

(i) Prepare a statement showing the manufacturing cost per unit of each product using the absorption costing method assuming the budgeted manufacturing volume is attained.

(ii) Determine cost driver rates and prepare a statement showing the manufacturing cost per unit of each product using activity based costing, assuming the budgeted manufacturing volume is attained.

(iii) MNO Ltd.'s selling prices are based heavily on cost. By using direct labour hours as an application base, calculate the amount of cost distortion (under costed or over costed) for each equipment.

Ans. 3(b) :

This question is from Activity Based Costing Topic.

You will find a similar question in our classroom notes - Volume I.

(i) Overheads application base : Direct labour hours

$$\text{*Pre-determined rate} = \frac{\text{Budgeted overheads}}{\text{Budgeted direct labour hours}} = \frac{₹\ 15,00,000}{25,000\ \text{hours}} = ₹\ 60 \text{ per hr.}$$

Particulars	Equipment A (₹)	Equipment B (₹)
Direct Material cost	350	400
Direct labour cost	360	480
Overheads @ ₹ 60 per hr.	180	240
Total Cost per unit	**890**	**1,120**

(ii) Estimation of Cost-Driver Rates :

Activity	Overhead cost	Cost Driver	Cost driver rate
Order Processing	3,00,000	600 Orders processed	500
Machine processing	10,00,000	50,000 Machine hours	20
Product Inspection	2,00,000	20,000 Inspection hours	10

Product Cost Sheet using ABC :

Particulars	Equipment A (₹)	Equipment B (₹)
Direct material cost	350	400
Direct labour cost	360	480
Prime Cost (A)	710	880
Overhead Cost :		
Order processing @ ₹ 500 per order	2,00,000	1,00,000
Machine processing @ ₹ 20 per machine hour	4,50,000	5,50,000
Inspection @ ₹ 10 per inspection hour	50,000	1,50,000
Total Overhead cost	7,00,000	8,00,000
Budgeted Production Volume	3,200 units	3,850 units
Overhead cost per unit (B)	218.75	207.79
Total cost per unit (A + B)	928.75	1,087.79

(iii) Calculation of Cost Distortion :

Particulars	Equipment A (₹)	Equipment B (₹)
Unit manufacturing cost using direct labour hours as an application base	890.00	1,120.00
Unit manufacturing cost using activity based costing	928.75	1,087.79
Cost distortion	- 38.75	32.21
Comments	Under costed	Over costed

Que. 4(a) : [10 Marks]

X Ltd. distributes its goods to a regional dealer using single lorry. The dealer premises are 40 kms away by road. The capacity of the lorry is 10 tonnes. The lorry makes the journey twice a day fully loaded on the outward journey and empty on return journey. The following information is available :

Diesel Consumption	8 km per litre
Diesel Cost	Rs. 60 per litre
Engine Oil	Rs. 200 per week
Driver's Wages (fixed)	Rs. 2,500 per week
Repairs	Rs. 600 per week
Garage Rent	Rs. 800 per week
Cost of Lorry (excluding cost of tyres)	Rs. 9,50,000
Life of Lorry	1,60,000 kms
Insurance	Rs. 18,200 per annum
Cost of Tyres	Rs. 52,500
Life of Tyres	25,000 kms.
Estimated sales value of the lorry at the end of its life	Rs. 1,50,000
Vehicle License Cost	Rs. 7,800 per annum
Other Overhead Cost	Rs. 41,600 per annum

The lorry operates on a 5 day week

Required:

(i) A statement to show the total cost of operating the vehicle for the four week period analysed into Running cost and Fixed cost.

(ii) Calculate the vehicle operating cost per km and per tonne km. (Assume 52 weeks in a year)

Ans. 4(a) :

This question is from Service Costing i.e. Operating Costing Topic.
You will find similar questions in our classroom notes - Volume II.

Working Notes:

(a) Calculation of total distance travelled in 4 weeks :

= (40 km one way x 2) x 2 round trips per day x 5 days per week x 4 weeks
= 3,200 kms.

(b) Calculation of total ton kms. in 4 weeks :

= Outward journey (3,200 km / 2 x 10 tons) + Return journey (3,200 km / 2 x 0 tons)
= 16,000 ton kms.

(i) Statement showing Operating Cost for 4 weeks :

	Particulars	(₹)
A	**Fixed Charges :**	
	Engine Oil (Rs. 200 x 4 weeks)	800
	Drivers' wages (Rs. 2,500 x 4 weeks)	10,000
	Repairs (Rs. 600 x 4 weeks)	2,400
	Garage rent (Rs. 800 x 4 weeks)	3,200
	Insurance [(Rs.18,200 ÷ 52 weeks) x 4 weeks]	1,400
	Vehicle license [(Rs. 7,800 ÷ 52 weeks) x 4 weeks]	600
	Other overheads [(Rs. 41,600 ÷ 52 weeks) x 4 weeks]	3,200
	Sub total (A)	**21,600**
B	**Running / Variable Cost :**	
	Cost of diesel { (Rs. 60 ÷ 8 kms) x 3,200 kms. }	24,000
	Depreciation of vehicle $\left[\frac{9,50,000 - 1,50,000}{1,60,000 \text{ kms}} \times 3,200 \text{ kms}\right]$	16,000
	Depreciation of tyres $\left[\frac{\text{Rs. } 52,500}{25,000 \text{ km}} \times 3,200 \text{ km}\right]$	6,720
	Sub total (B)	**46,720**
C	**Total Cost (A + B)**	**68,320**

(ii) Calculation of vehicle operating cost :

Operating cost per km = $\frac{\text{Rs. } 68,320}{3,200 \text{ kms}}$ = ₹ 21.35 per km.

Operating cost per ton km = $\frac{\text{Rs. } 68,320}{16,000}$ = ₹ 4.27

Que. 4(b) : [10 Marks]

The following are the details of receipt and issue of material `CXE' in a manufacturing Co. during the month of April, 2019 :

Date	Particulars	Quantity (kg.)	Rate Per kg.
April 4	Purchase	3,000	₹ 16
April 6	Issue	1,000	
April 15	Purchase	1,500	₹ 18
April 20	Issue	1,200	
April 25	Return to supplier out of purchase made on April 15	300	
April 26	Issue	1,000	
April 28	Purchase	500	₹ 17

Opening stock as on 01.04.2019 is 1,000 kg. @ ₹ 15 per kg.
On 30th April, 2019 it was found that 50 kg of material 'CXE' was fraudulently misappropriated by the store assistant and never recovered by the company.

Required :

(i) Prepare a store ledger account under each of the following method of pricing the issue:
   (a) Weighted Average Method
   (b) LIFO

(ii) What would be the value of material consumed and value of closing stock as on 30.04.2019 as per these two methods?

Ans. 4(b) :

This question is from Material Cost Topic.
You will find similar question in our classroom notes - Volume I.

(i)(a) : Stores Ledger Account for April, 2019 using Weighted Average Method :

Date 2019	Particulars	Receipt			Issue			Balance		
		Qty. Units	Rate (Rs.)	Amt. (Rs.)	Qty. Units	Rate (Rs.)	Amt. (Rs.)	Qty. Units	Rate (Rs.)	Amt. (Rs.)
01.4	Op. stock	-	-	-	-	-	-	1,000	15.00	15,000
04.4	Purchase	3,000	16.00	48,000	-	-	-	4,000	15.75	63,000
08.4	Issues	-	-	-	1,000	15.75	15,750	3,000	15.75	47,250
15.4	Purchase	1,500	18.00	27,000	-	-	-	4,500	16.50	74,250
20.4	Issues	-	-	-	1,200	16.50	19,800	3,300	16.50	54,450
25.4	Return to supplier	-	-	-	300	18.00	5,400	3,000	16.35	49,050
26.4	Issues	-	-	-	1,000	16.35	16,350	2,000	16.35	32,700
28.4	Purchase	500	17.00	8,500	-	-	-	2,500	16.48	41,200
30.4	Abnormal Loss	-	-	-	50	16.48	824	2,450	16.48	40,376
30.4	Closing stock	-	-	-	-	-	-	2,450	16.48	40,376
	Totals	5,000		83,500	3,550		58,124			

(i)(b) : Stores Ledger Account for April, 2019 using LIFO Method :

Date 2019	Particulars	Receipt			Issue			Balance		
		Qty. Units	Rate (Rs.)	Amt. (Rs.)	Qty. Units	Rate (Rs.)	Amt. (Rs.)	Qty. Units	Rate (Rs.)	Amt. (Rs.)
01.4	Op. stock	-	-	-	-	-	-	1,000	15	15,000
04.4	Purchase	3,000	16	48,000	-	-	-	1,000 3,000	15 16	15,000 48,000
08.4	Issues	-	-	-	1,000	16	16,000	1,000 2,000	15 16	15,000 32,000
15.4	Purchase	1,500	18	27,000	-	-	-	1,000 2,000 1,500	15 16 18	15,000 32,000 27,000
20.4	Issues	-	-	-	1,200	18	21,600	1,000 2,000 300	15 16 18	15,000 32,000 5,400
25.4	Return to supplier	-	-	-	300	18	5,400	1,000 2,000	15 16	15,000 32,000
26.4	Issues	-	-	-	1,000	16	16,000	1,000 1,000	15 16	15,000 16,000
28.4	Purchase	500	17	8,500	-	-	-	1,000 1,000 500	15 16 17	15,000 16,000 8,500
30.4	Abnormal Loss	-	-	-	50	17	850	1,000 1,000 450	15 16 17	15,000 16,000 7,650
30.4	Closing stock	-	-	-	-	-	-	2,450	-	38,650
	Totals	5,000		83,500	3,550		59,850			

(ii) Value of Material Consumed and Closing Stock :

Particulars	Weighted Average Method (₹)	LIFO method (₹)
Closing Stock as on 30.04.2019 (as above)	40,376	38,650
Total of issues column (as above)	58,124	59,850
Less: Return to supplier	(5,400)	(5,400)
Less: Abnormal loss	(824)	(850)
∴ Value of Material Consumed	51,900	53,600

Que. 5(a) : [5 Marks]

M/s. Gaurav Private Limited is manufacturing and selling two products : 'BLACK' and 'WHITE' at selling price of ₹ 20 and ₹ 30 respectively.
The following sales strategy has been outlined for the financial year 2019-20 :

(i) Sales planned for the year will be ₹ 81,00,000 in the case of 'BLACK' and ₹ 54,00,000 in the case of 'WHITE'.

(ii) The selling price of 'BLACK' will be reduced by 10% and that of 'WHITE' by 20%.

(iii) Break-even is planned at 70% of the total sales of each product.

(iv) Profit for the year to be maintained at ₹ 8,26,200 in the case of 'BLACK' and ₹ 7,45,200 in the case of 'WHITE'. This would be possible by reducing the present annual fixed cost of ₹ 42,00,000 allocated at ₹ 22,00,000 to 'BLACK' and ₹ 20,00,000 to 'WHITE'.

You are required to calculate :

(1) Number of units to be sold of 'BLACK' and 'WHITE' to Break even during the financial year 2019-20.
(2) Amount of reduction in fixed cost product-wise to achieve desired profit mentioned at (iv) above.

Ans. 5(a) :

This question is from Marginal Costing Topic.

Statement showing Break Even Sales & Reduction in Fixed Cost :

Particulars	Black	White
(a) Sales Planned (₹)	81,00,000	54,00,000
(b) Present Selling Price per unit (₹)	20	30
(c) Reduction in sales price in %	10%	20%
(d) Revised selling price for FY 2019-20 [b - c]	18	24
(e) Total number of Units to be sold [a / d]	4,50,000	2,25,000
(f) BEP Sales (in Units) [70% of e]	3,15,000	1,57,500
(g) Break Even sales (in ₹) [70% of a]	56,70,000	37,80,000
(h) Profit to be maintained (₹) [given]	8,26,200	7,45,200
(i) Margin of Safety (in ₹) [30% of a]	24,30,000	16,20,000
(j) P/V Ratio (Profit / Margin of Safety) x 100	34%	46%
(k) Expected Fixed Cost (₹) [BEP x P/V Ratio]	19,27,800	17,38,800
(l) Present Fixed Cost (₹) [given]	22,00,000	20,00,000
(m) Desired reduction in Fixed cost [l - k]	2,72,200	2,61,200

Que. 5(b) : [5 Marks]

M/s. Zaina Private Limited has purchased a machine costing ₹ 29,14,800 and it is expected to have a salvage value of ₹ 1,50,000 at the end of its effective life of 15 years. Ordinarily the machine is expected to run for 4,500 hours per annum but it is estimated that 300 hours per annum will be lost for normal repairs & maintenance. The other details in respect of the machine are as follows :

(i) Repair & Maintenance during the whole life of the machine are expected to be ₹ 5,40,000.

(ii) Insurance premium (per annum) 2% of the cost of the machine.

(iii) Oil and Lubricants required for operating the machine (per annum) ₹ 87,384

(iv) Power consumptions : 10 units per hour @ ₹ 7 per unit. No power consumption during repair and maintenance.

(v) Salary to operator per month ₹ 24,000. The operator devotes one third of his time to the machine.

You are required to calculate comprehensive machine hour rate.

Ans. 5(b) :

This question is from Overhead Cost Topic. It is a very simple question.
You will find similar questions in our classroom notes - Volume I.

Effective machine hours p.a. = 4,500 – 300 = 4,200 hours p.a.

Calculation of Comprehensive machine hour rate :

Particulars	**Amt. (₹) p.a.**
Repairs and Maintenance (₹ 5,40,000 ÷ 15 years)	36,000
Insurance (₹ 29,14,800 x 2%)	58,296
Oil and Lubricant	87,384
Power (4,200 hours x 10 units/hr. x ₹ 7)	2,94,000
Salary to Operator [(24,000 p.m. x 12 months) 1/3]	96,000
Depreciation $\left[\frac{29,14,800 - 1,50,000}{15 \text{ years}}\right]$	1,84,320
Total Cost p.a.	7,56,000
Comprehensive Machine Hour Rate [7,56,000 / 4,200]	180

Que. 5(c) : [10 Marks]

A contractor prepares his accounts for the year ending 31st March each year. He commenced a contract on 1st September, 2018. The following information relates to contract as on 31st March, 2019 :

Material sent to site	₹ 18,75,000
Wages paid	₹ 9,28,500
Wages outstanding at end	₹ 84,800
Sundry expenses	₹ 33,825
Material returned to supplier	₹ 15,000
Plant purchased	₹ 3,75,000
Salary to supervisor (Devotes 1/3rd of his time on contract)	₹ 15,000 per month
Material at site as on 31.03.2019	₹ 2,16,800

Some of material costing ₹ 10,000 was found unsuitable and was sold for ₹ 11,200. On 31.12.2018 plant which costs ₹ 25,000 was transferred to some other contract and on 31.01.2019 plant which costs ₹ 32,000 was returned to stores. The plant is subject to annual depreciation @ 15% on written down value method.

The contract price is ₹ 45,00,000. On 31st March, 2019 two-third of the contract was completed. The architect issued certificate covering 50% of the contract price.

Prepare Contract A/c and show the notional profit or loss as on 31st March, 2019.

Ans. 5(c) :
This question is from Contract Costing Topic.
You will find similar question in our classroom notes - Volume II.
Note : The cost of work uncertified is missing in the question. It is an important working.

Contract Account for the period from 1.09.18 to 31.03.19 (i.e. 7 months)

Particulars	**₹**	**Particulars**	**₹**
To Materials sent to site	18,75,000		
To Wages paid 9,28,500		By Material returned to Supplier	15,000
Add: Outstanding 84,800	10,13,300	By Material Sold	11,200
To Sundry Expenses	33,825	By Materials at site c/d	2,16,800
To Depreciation of Plant (see working 1 below)	31,075		
To Salary of Supervisor [1/3 x (15,000 x 7 mths.)]	35,000	By Works Cost c/d (Balancing figure)	27,46,400
To Profit on sale of material tran. to Costing P&L A/c (11,200 - 10,000)	1,200		
Totals	28,89,400	Totals	29,89,400
To Works Cost b/d	27,46,400	By Work certified (45,00,000 x 50%)	22,50,000
To Notional profit transferred to Costing P&L A/c	1,90,200	By Work uncertified (see working 2 below)	6,86,600
Totals	29,36,600	Totals	29,36,600

Working Notes :

1. Calculation of Depreciation of Plant used at site :

Period of use	Usage	Calculations	Depreciation (₹)
01.09.18 to 31.12.18	4 months	25,000 x 15% x 4/12	1,250
01.09.18 to 31.01.19	5 months	32,000 x 15% x 5/12	2,000
01.09.18 to 31.03.19	7 months	3,18,000 x 15% x 7/12	27,825
		Total Depreciation	31,075

2. Calculation of cost of work uncertified :

The works cost of 2/3rd of the contract is Rs. 27,46,400

Work uncertified = $\frac{2}{3} - \frac{1}{2} = \frac{1}{6}$ i.e. Work done – work certified

$\therefore$ Cost of work uncertified (for 1/6 portion) = 27,46,400 x $\frac{3}{2}$ x $\frac{1}{6} = 6,86,600$

Que. 6 :

Answer any FOUR of the following : [5 Marks Each]

(a) Differential between cost control and cost reduction.

(b) What are the cases when a flexible budget is found suitable?

(c) Explain integrated accounting system and state its advantages.

(d) Explain Direct Expenses and how these are measured and their treatment in cost accounting.

(e) What are the limitations of marginal costing?

Ans. 6 :

(a) Difference between Cost Control & Cost Reduction :

Cost Control	Cost Reduction
1. Cost Control aims at maintaining the costs in accordance with the established standards.	1. Cost reduction is concerned with reducing costs. It challenges all standards and endeavours to better them continuously.
2. Cost control seeks to attain lowest possible cost under existing conditions.	2. Cost reduction recognises condition as permanent since a change will result in lower cost.
3. In case of Cost Control, emphasis is on past and present.	3. In case of cost reduction it is on present and future.
4. Cost Control is a corrective function.	4. Cost reduction is a preventive function. It operates even when an efficient cost control system exists.
5. Cost control ends when targets are achieved.	5. Cost reduction has no visible end.

(b) Flexible budgeting may be resorted to under following situations:

(i) In the case of new business venture due to its typical nature it may be difficult to forecast the demand of a product accurately.

(ii) Where the business is dependent upon the mercy of nature e.g., a person dealing in wool trade may have enough market if temperature goes below the freezing point.

(iii) In the case of labour-intensive industry where the production of the concern is dependent upon the availability of labour.

Suitability for flexible budget:

1. Seasonal fluctuations in sales and/or production, for example in soft drinks industry.
2. A company which keeps on introducing new products or makes changes in the design of its products frequently.
3. Industries engaged in make-to-order business like ship building.
4. An industry which is influenced by changes in fashion; and
5. General changes in sales.

(c) Integrated Accounting System : Integrated Accounts is the name given to a system of accounting, whereby cost and financial accounts are kept in the same set of books. Obviously, then there will be no separate sets of books for Costing and Financial records. Integrated accounts provide or meet out fully the information requirement for Costing as well as for Financial Accounts. For Costing it provides information useful for ascertaining the cost of each product, job, process and operation of any other identifiable activity and for carrying necessary analysis. Integrated accounts provide relevant information which is necessary for preparing profit and loss account and the balance sheets as per the requirement of law and also helps in exercising effective control over the liabilities and assets of its business.

Advantages of Integrated Accounting System

The main advantages of Integrated Accounts are as follows:

(i) **No need for Reconciliation** – The question of reconciling costing profit and financial profit does not arise, as there is only one figure of profit.

(ii) **Less efforts –** Due to use of one set of books, there is a significant saving in efforts made.

(iii) **Less time consuming -** No delay is caused in obtaining information as it is provided from books of original entry.

(iv) **Economical process –** It is economical also as it is based on the concept of "Centralisation of Accounting Function".

(d) Direct Expense : Expenses other than direct material cost and direct employee cost, which are incurred to manufacture a product or for provision of service and can be directly traced in an economically feasible manner to a cost object. The following costs are examples for direct expenses.

(i) Royalty paid/payable for production or provision of service.

(ii) Hire charges paid for hiring specific equipment.

(iii) Cost for product/service specific design or drawing.

(iv) Cost of product/service specific software.

(v) Other expenses which are directly related with the production of goods or provision of service.

Note : The above list of expenses is not exhaustive; any other expenses which are directly attributable to product or provision of service are also included as direct expenses.

Measurement of Direct Expenses :

The direct expenses are measured at invoice or agreed price net of rebate or discount but includes duties and taxes (for which input credit not available), commission and other directly attributable costs.

In case of sub-contracting, where goods are manufactured by job workers independent of the principal entity, are measured at agreed price. Where the principal supplies some materials to the job workers, the value of such materials and other incidental expenses are added with the job charges paid to the job workers.

Treatment of Direct Expenses :

Direct Expenses forms part the prime cost for the product or service to which it can be directly traceable and attributable. In case of lump-sum payment or one time payment, the cost is amortised over the estimated production volume or benefit derived. If the expenses incurred are of insignificant amount i.e. not material, it can be treated as part of overheads.

(e) Limitations of Marginal Costing :

(i) **Difficulty in classifying fixed and variable elements :** It is difficult to classify exactly the expenses into fixed and variable category. Most of the expenses are neither totally variable nor wholly fixed. For example, various amenities provided to workers may have no relation either to volume of production or time factor.

(ii) **Dependence on key factors :** Contribution of a product itself is not a guide for optimum profitability unless it is linked with the key factor.

(iii) **Scope for Low Profitability :** Sales staff may mistake marginal cost for total cost and sell at a price; which will result in loss or low profits. Hence, sales staff should be cautioned while giving marginal cost.

(iv) **Faulty valuation :** Overheads of fixed nature cannot altogether be excluded particularly in large contracts, while valuing the work-in-progress. In order to show the correct position, fixed overheads have to be included in work-in-progress.

(v) **Unpredictable nature of Cost :** Some of the assumptions regarding the behaviour of various costs are not necessary true in a realistic situation. For example, the assumption that fixed cost will remain static throughout is not correct. Fixed cost may change from one period to another. For example, salaries bill may go up because of annual increments or due to change in pay rate etc. The variable costs do not remain constant per unit of output. There may be changes in the prices of raw materials, wage rates etc. after a certain level of output has been reached due to shortage of material, shortage of skilled labour, discount on bulk purchases etc.

(vi) **Marginal costing ignores time factor and investment :** The marginal cost of two jobs may be the same but the time taken for their completion and the cost of machines used may differ. The true cost of a job which takes longer time and uses costlier machine would be higher. This fact is not disclosed by marginal costing.

(vii) Understating of WIP : Under marginal costing finished stocks and work in progress are understated i.e. undervalued. It is valued at variable cost.

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