ANSWER OF MODEL TEST PAPER 3

INTERMEDIATE: GROUP – II

PAPER – 4: COST AND MANAGEMENT ACCOUNTING

PART I – Case Scenario based MCQs

1. (i) (c) Output by experienced workers in 50,000 hours = $\frac{50,000}{10}$ = 5,000 units

∴ Output by new recruits = 60% of 5,000 = 3,000 units

Loss of output = 5,000 – 3,000 = 2,000 units

Total loss of output = Due to delay recruitment + Due to inexperience

= 10,000 + 2,000 = 12,000 units

(ii) (a) Contribution per unit = 20% of ₹180 = ₹ 36

Total contribution lost = ₹36 × 12,000 units = ₹ 4,32,000

(iii) (b) Cost of repairing defective units = 3,000 units × 0.2 × ₹ 25 = ₹ 15,000

(iv) (d) Calculation of loss of profit due to labour turnover

	(₹)
Loss of Contribution	4,32,000
Cost of repairing defective units	15,000
Recruitment cost	1,56,340
Training cost	1,13,180
Settlement cost of workers leaving	1,83,480
Profit forgone in 2022-23	9,00,000

(v) (c) Output by experienced workers in 50,000 hours = $\frac{50,000}{10}$ = 5,000 units

∴ Output by new recruits = 60% of 5,000 = 3,000 units

Loss of output = 5,000 – 3,000 = 2,000 units

2. (i) (b)

(ii) (a)

(iii) (b)

(iv) (c)

(v) (a)

Statement of Cost of P Ltd. for the year ended 31st December, 2023:

Sl. No.	Particulars	Amount (₹)	Amount (₹)
(i)	Material Consumed:		
	- Raw materials purchased	5,00,00,000	
	- Freight inward	9,20,600	
	Add: Opening stock of raw materials	10,00,000	
	Less: Closing stock of raw materials	(8,40,000)	5,10,80,600
(ii)	Direct employee (labour) cost:		
	- Wages paid to factory workers		25,20,000
(iii)	Direct expenses:		
	- Royalty paid for production	1,80,000	
	- Amount paid for power & fuel	3,50,000	
	- Job charges paid to job workers	3,10,000	8,40,000
	Prime Cost		5,44,40,600
(iv)	Works/ Factory overheads:		
	- Stores and spares consumed	1,10,000	
	- Repairs & Maintenance paid for plant & machinery	40,000	
	- Insurance premium paid for plant & machinery	28,200	
	- Insurance premium paid for factory building	18,800	
	- Expenses paid for pollution control and engineering & maintenance	36,000	2,33,000
	Gross factory cost		5,46,73,600
	Add: Opening value of W-I-P		8,60,000
	Less: Closing value of W-I-P		(6,60,000)
	Factory Cost		5,48,73,600
(v)	Quality control cost:		
	- Expenses paid for quality control check activities		18,000
(vi)	Research & development cost paid for improvement in production process		20,000
(vii)	Less: Realisable value on sale of scrap and waste		(48,000)
(viii)	Add: Primary packing cost		46,000
	Cost of Production		5,49,09,600
	Add: Opening stock of finished goods		12,00,000
	Less: Closing stock of finished goods		(10,50,000)

	Cost of Goods Sold		5,50,59,600
(ix)	Administrative overheads:		
	- Depreciation on office building	50,000	
	- Salary paid to General Manager	6,40,000	
	- Fee paid to independent directors	1,20,000	8,10,000
(x)	Selling overheads:		
	- Repairs & Maintenance paid for sales office building	20,000	
	- Salary paid to Manager- Sales & Marketing	5,60,000	
	- Performance bonus paid to sales staffs	1,20,000	7,00,000
(xi)	Distribution overheads:		
	- Packing cost paid for re-distribution of finished goods		80,000
	Cost of Sales		5,66,49,600

3. (d)

Variable Overhead Efficiency Variance:

= Std. rate per hour × (Std. hours for actual production – Actual hours)

= ₹10 (2 hours × 11,800 units – 23,200 hours) = ₹4,000 (F)

Workings:

1. Standard cost per unit = $\frac{₹\ 2,40,000}{12,000 units}$ = ₹ 20

2. Standard cost per hour = $\frac{₹\ 2,40,000}{12,000\ units \times 2\ hours}$ = ₹10

4. (b)

Sales mix (in quantity) is 4 units of Product- A and 3 units of Product- B

Composite contribution per unit by taking weights for the product sales quantity

=Product A: **₹140 ×** $\frac{4}{7}$ + Product B: ` **70** × $\frac{3}{7}$ = ₹ 80 + ₹ 30 = ₹ 110

Composite Break-even point = $\frac{\text{Common Fixed Cost}}{\text{Composite Contribution per unit}} = \frac{₹\ 6,16,000}{₹\ 110}$

= 5,600 units

Break-even units of Product- B = 5,600× $\frac{3}{7}$ = 2,400 units

5. (d) 60 km

Let's assume distance between Delhi and Manesar is 'X'

Therefore: Xx39x2x3x26x12 = ₹ 43,80,480

X = 60

6 (a) ₹ 11,27,000

	₹
Purchase price	10,00,000
Custom duty	2,00,000
Octroi	5,000
Carriage inward	12,000
Commission on Purchase	10,000
Total Purchase	12,27,000
Opening stock of Raw Material	1,00,000
Closing stock of Raw Material	(2,00,000)
Raw Material consumed	11,27,000

7. (c) ₹ 1,80,000

costs allocated to product A is

= (60,000kg/30,000kg)*3,60,000

= 1,80,000

PART-II – Descriptive Questions

1. (a) (i) Optimum run size for empty bottle manufacture

$$= \sqrt{\frac{2 \times \text{Annual supply of empty bottles} \times \text{Set} - \text{up cost per production run}}{\text{Annual holding cost per bottle}}}$$

$$= \sqrt{\frac{2 \times 1{,}50{,}000 \text{ bottles} \times 520}{12 \text{ months} \times 0.05\text{P}}} = 16{,}125 \text{ bottles}$$

(ii) Interval between two consecutive optimum runs

$$= \frac{12 \text{ months}}{\left(\frac{\text{Annual production}}{\text{Optimum run size}}\right)}$$

$$= \frac{12 \text{ months}}{\left(\frac{1{,}50{,}000 \text{ bottles}}{16{,}125 \text{ bottles}}\right)} = \frac{12 \text{ months}}{9.30} = 1.29 \text{ months or 39 days}$$

approximately.

(iii) Minimum inventory cost per annum

= Total production run cost + Total carrying cost per annum

$$= \frac{1{,}50{,}000 \text{ bearings}}{16{,}125 \text{ bearings}} \times ₹\ 520 + (1/2)\ 16125 \text{ bottles} \times ₹\ 0.05 \times 12 \text{ months}$$

= ₹ 4,836 + ₹ 4837.50

= ₹ 9673.50

(b) Working Notes:

1. Depreciation per annum:= $\frac{\text{Purchase price - Scrap value}}{\text{Estimated life}}$

$$= \frac{₹\,4,00,000 - ₹\,10,000}{5 \text{ years}} = ₹\,78,000$$

2. Total distance travelled by mini-bus in 25 days:

   = Length of the route (two -sides) × No. of trips per day × No. of days

   = 60 km × 6 trips × 25 days = 9,000 km

3. Total Passenger-Km:

   = Total distance travelled by mini-bus in 25 days × No. of seats

   = 9,000 km × 20 seats = 1,80,000 passenger-km

Statement suggesting fare per passenger-km

Particulars	**Cost per annum ₹**	**Cost per month ₹**
Fixed expenses:		
Insurance	15,000	
Garage rent	9,000	
Road tax	3,000	
Administrative charges	5,000	
Depreciation	78,000	
Interest on loan	10,000	
	1,20,000	10,000
Running expenses:		
Repair and maintenance	15,000	1,250
Replacement of tyre-tube	3,600	300
Diesel and oil cost (9,000 km × ₹ 5)	-	45,000
Driver and conductor's salary	-	5,000
Total cost (per month)		61,550.00
Add: Profit 20% of total revenue cost or 25% of total cost		15,387.50
Total revenue		76,937.50

Rate per passenger-km ₹ 76,937.50/1,80,000 passenger km = 0.42743 i.e., = 0.43 i.e., 43 paise

(c) **(i)** Economic Order Quantity = $\sqrt{\frac{2AO}{C}}$

Where, A= Annual demand

O = Cost of placing an order

C = Carrying cost per unit per annum

$= \sqrt{\frac{2x(40x365)x100}{0.06x365}}$

= 365 units

(ii) Re-Order Level = Maximum usage x maximum lead time

= 40x26

= 1040 units

2. **(a)** **a.** Variable overhead absorption rate:

₹ 3,56,375 – ₹ 3,38,875 = ₹ 17,500 ÷ (16,500 – 14,500) = ₹ 8.75 per machine hour.

b. Total fixed overheads:

	₹
Total overheads at 14,500 hours	3,38,875
Variable overheads = ₹ 8.75 × 14,500	1,26,875
Total fixed overheads	2,12,000

c. Budgeted level of activity:

Let budgeted level of activity = x

$\frac{(₹\ 8.75\ x + ₹\ 2,12,000)}{x} = 22$

8.75x + ₹ 2,12,000 = 22x

2,12,000 = 13.25x

16,000 = x

Thus, budgeted level of activity = 16,000 machine hours.

d. Under/over – recovery of overheads:

	₹
Actual overheads	3,55,050
Absorbed = 15,850 hours × ₹ 22/hour	(3,48,700)
Under - recovery	6,350

e. Departmental absorption rates provide Costs which are more precise than those provided by the use of blanket absorption rates. Departmental absorption rates facilitate Variance analysis and Cost control. The application of these rates makes the task of Stock and WIP valuation easier and more precise. However the setting up and

monitoring of these rates can be time consuming and expensive. In cases where departments are similar the use of such rates may not be useful for Costing purposes.

(b) The essential features, which a good cost and management accounting system should possess, are as follows:

(a) Informative and simple: Cost and management accounting system should be tailor-made, practical, simple and capable of meeting the requirements of a business concern. The system of costing should not sacrifice the utility by introducing meticulous and unnecessary details.

(b) Accurate and authentic: The data to be used by the cost and management accounting system should be accurate and authenticated; otherwise it may distort the output of the system and a wrong decision may be taken.

(c) Uniformity and consistency: There should be uniformity and consistency in classification, treatment and reporting of cost data and related information. This is required for benchmarking and comparability of the results of the system for both horizontal and vertical analysis.

(d) Integrated and inclusive: The cost and management accounting system should be integrated with other systems like financial accounting, taxation, statistics and operational research etc. to have a complete overview and clarity in results.

3. (a) **COST LEDGER**

Dr. **Cost Ledger Account** Cr.

Particulars	₹	Particulars	₹
To Stores ledger control A/c	5,800	By Balance b/d	13,30,440
To Finished stock ledger control A/c	3,71,780	By Stores ledger control A/c	2,46,000
To Balance c/d	15,37,030	By Wages control A/c	1,01,060
		By Works overhead control A/c	43,330
		By Works overhead control A/c	1,83,020
		By Finished stock ledger control A/c	10,760
	19,14,610		19,14,610
		By Balance b/d	15,37,030

Dr.	**Stores Ledger Control Account**		Cr.
Particulars	₹	Particulars	₹
To Balance b/d	6,02,870	By Cost ledger control A/c	5,800
To Cost ledger control A/c	2,46,000	By Work-in-progress control A/c	2,54,630
		By Balance c/d	5,88,440
	8,48,870		8,48,870
To Balance b/d	5,88,440		

Dr. **Manufacturing Overhead Control Account** Cr.

Particulars	₹	Particulars	₹
To Cost ledger control A/c	1,83,020	By Balance b/d	21,050
To Cost ledger control A/c	43,330	By Work-in-progress control A/c	1,54,400
		By Balance c/d	50,900
	2,26,350		2,26,350
To Balance b/d	50,900		

Dr. **Work-in-progress Control Account** Cr.

Particulars	₹	**Particulars**	₹
To Balance b/d	2,44,730	By Finished stock ledger control A/c	4,21,670
To Wages control A/c	1,01,060	By Balance c/d	3,33,150
To Stores ledger control A/c	2,54,630		
To Works overhead control A/c	1,54,400		
	7,54,820		7,54,820
To Balance b/d	3,33,150		

Dr. **Finished Stock Ledger Control Account** Cr.

Particulars	₹	**Particulars**	₹
To Balance b/d	5,03,890	By Cost ledger control A/c	3,71,780
To Work-in-progress	4,21,670	By Balance c/d	5,64,540
To Cost ledger control A/c	10,760		
	9,36,320		9,36,320
To Balance b/d	5,64,540		

Trial Balance

	Dr. ₹	*Cr.* ₹
Cost ledger control account	—	15,37,030
Stores ledger control account	5,88,440	—
Mfg. overhead control account	50,900	—
W.I.P. control account	3,33,150	—
Finished stock ledger control account	5,64,540	—
	15,37,030	15,37,030

(b) Production budget

(For the year 2023 by quarters)

(a) Units to be produced in each quarters

Quarters

	I	II	III	IV	Total
2/3 of current quarter's sales demand	8,000	10,000	11,000	12,000	41,000
1/3 of the following quarter demand*	5,000	5,500	6,000	6,500	23,000
	13,000	15,500	17,000	18,500	64,000

(b) Statement showing direct material, variable overhead and fixed overhead

Quarters

	I	II	III	IV	Total
Units to be produced	13,000	15,500	17,000	18,500	64,000
Direct Material @ ₹ 5 Per unit	₹ 65,000	₹ 77,500	₹ 85,000	₹ 92,500	₹ 3,20,000
(Refer to Note 1)					
Direct Labour @ ₹ 6 per Unit	78,000	93,000	1,02,000	1,11,000	3,84,000
(Refer to Note 2)					
Variable overhead ₹ 1.50 per unit	19,500	23,250	25,500	27,750	96,000
(Refer to Note 3)					
Fixed Overhead	45,000	45,000	45,000	45,000	1,80,000
(Refer to Note 4)	2,07,500	2,38,750	2,57,500	2,76,250	9,80,000

(ii)	**Budgeted profit for the whole year**	₹
	Sales (61,500** units @₹ 17 per unit)	₹ 10,45,500
	Less: Total variable cost per unit (61,500** unit @ ₹ 12.50 per unit)	₹ 7,68,705
		2,76,750
	Less: Fixed cost	1,80,000
	Profit for the whole year	96,750
	Variable cost per unit:	₹
	Direct material cost (Refer to Note 1)	5.00
	Direct labour cost (Refer to Note 2)	6.00
	Variable cost (Refer to Note 3)	1.50
		12.50

Working Notes:

1. Direct material cost = 10 kgs @ ₹ 0.50 per kg = ₹ 5.00 per unit.
2. Direct labour per unit = 1 hr. 30 minutes @ ₹ 4 per hour = ₹ 6 per unit.
3. Variable overhead per unit = 1 hr. 30 minutes @ ₹ 1 per hour = ₹ 1.50 unit
4. Fixed Overhead

Budgeted production volume is 90,000 direct labour hours for the year @ ₹ 2 per hour i.e. ₹ 1,80, 000 for the year. This fixed overhead is spread over the four quarters equally.

* Inventory is given for the fourth quarter.

** Sales for the year is given i.e. 12,000 + 15,000+16,500 + 18,000 = 61,500 unit.

4. (a) (a) Material Price variance = Actual quantity (Std. Price – Actual Price)

A = 17200(3.5 – 4.00)	=	8600(A)
B = 36500(5.00 – 4.50)	=	18250(F)
C = 23800(4.25 – 4.30)	=	1190(A)
		8460(F)

(b) Material usage variance = Std. Price (Std. quantity for actual production – Actual quantity)

A = 3.50(6000 X 3 – 17200)	=	2800(F)
B = 5.00(6000 X 6 – 36500)	=	2500(A)
C = 4.25(6000 X 4 – 23800)	=	850(F)
		1150 (F)

(c) Labour rate variance = Actual hour paid (Std. rate – Actual rate)

Skilled labour = 24 X 45 (5.00 – 6.00) = 1080(A)

Semi-skilled labour = 12 X 45 (4.00 - 4.25) = 135(A)

Un-skilled labour = 6 X 45 (2.00 - 3.25) = 337.50(A)

1552.50(A)

(d) Labour Mix variance = Std. rate (Revised std. hours – Actual hours)

Skilled labour = 5.00(1170 - 1080) = 450(F)

Semi-skilled labour = 4.00(450 – 540) = 360(A)

Un-skilled labour = 2.00(360 – 270) = 180(F)

270(F)

(e) Labour yield variance = Std. rate per hour (Standard hours – Revised std. hours)

= 8370/1980(1900 – 1980) = 338 (A)

Working notes:

(i)

Standard				Actual		
Category of workers	Hrs.*	Rate ₹	Amount ₹	Hrs.*	Rate ₹	Amount ₹
Skilled	1170	5.00	5850.00	1080	6.00	6480.00
Semi-skilled	450	4.00	1800.00	540	4.25	2295.00
Un-skilled	360	2.00	720.00	270	3.25	877.50
	1980		8370.00	1890		9652.50

*Hrs. = No. of workers X 45 hours.

(b) Variable cost to sales = 80%

Contribution to sales = 20%

Or P/V Ratio 20%

We know that: BES x P/V Ratio = Fixed Cost

BES x 0.20 = ₹ 65,000

Or BES = ₹ 3,25,000

It is given that break-even occurs at 65% capacity.

Therefore, sales at 100% capacity = ₹ 3,25,000 / 0.65

= ₹ 5,00,000

Computation of profit at 95% Capacity

	₹
95% of capacity sales (i.e. ₹ 5,00,000 x 0.95) =	4,75,000
Less: Variable cost (i.e. ₹ 4,75,000 x 0.80) =	3,80,000
Contribution	95,000

Less: Fixed Cost		65,000
Profit		30,000

5. (a) Process- I Account

	Units	₹		*Units*	₹
To Material	10,000	45,000	By Normal wastage	300	
” Labour		6,100	” Abnormal wastage	100	628
” Overhead		9,800	(cost per unit, ₹ 6.278)		
			” Process No. 2	9,600	60,272
			(Transfer of		
			completed units)		
	10,000	60,900		10,000	60,900

Note : The cost of the abnormal wastage :

Normal Output = 10,000 units – 300 units = 9,700 units

Cost per unit of normal output = ₹ 60,900 ÷ 9,700 units = ₹ 6.278

Cost of 100 units = ₹ 6.278 × 100 = ₹ 628

Process- II Account

		Units	₹		*Units*	₹
To	Process No.1	9,600	60,272	By Normal wastage	576	–
”	Materials		23,500	(6% of 9,600)		
”	Labour		4,280	” Process No.3	9,300	1,00,845
”	Overhead		9,800	(cost per unit ₹ 10.84)		
”	Abnormal gain (cost per unit ₹ 10.84)	276	2,993			
		9,876	1,00,845		9,876	1,00,845

Note : The cost per unit is obtained by dividing ₹ 97,852 by 9,024 units, *i.e.,* 9,600 units less 576 units.

Process- III Account

		Units	*₹*			*Units*	*₹*
To	Process No. 2	9,300	1,00,845	By	Normal wastage	651	
”	Materials		11,200	”	Abnormal wastage	649	9,706
”	Labour		1,200		(Cost per unit ₹ 14.95)		
”	Overhead		16,100	”	Finished Stock	8,000	1,19,639
		9,300	1,29,345			9,300	1,29,345

Note : The calculation of the cost of abnormal wastage :

Normal Output = 9,300 units – 651 units = 8,649 units.

Cost per unit of normal output = ₹ 1,29,345 ÷ 8,649 = ₹ 14.95

Cost of 649 units is = ₹ 9706

(b) Treatment of normal and abnormal loss of material arising during storage in Cost Accounts.

The difference between the book balance and actual physical stock, which may either be gain or loss, should be transferred to Inventory Adjustment Account pending scrutiny to ascertain the reason for the difference.

If on scrutiny, the difference arrived at is considered as normal, then such a difference should be transferred to overhead control account and if abnormal, it should be debited to costing profit and loss account.

In the case of normal losses, an alternative method may be used. Under this method the price of the material issued to production may be inflated so as to cover the normal loss.

6. (a) Difference between Cost Accounting and Management Accounting

	Basis	Cost Accounting	Management Accounting
(i)	Nature	It records the quantitative aspect only.	It records both qualitative and quantitative aspect.
(ii)	Objective	It records the cost of producing a product and providing a service.	It Provides information to management for planning and co-ordination.
(iii)	Area	It only deals with cost Ascertainment.	It is wider in scope as it includes financial accounting, budgeting, taxation, planning etc.
(iv)	Recording of data	It uses both past and present figures.	It is focused with the projection of figures for future.

(v)	Development	Its development is related to industrial revolution.	It develops in accordance to the need of modern business world.
(vi)	Rules and Regulation	It follows certain principles and procedures for recording costs of different products.	It does not follow any specific rules and regulations.

(b) CVP Analysis:-Assumptions

(i) Changes in the levels of revenues and costs arise only because of changes in the number of products (or service) units produced and sold.

(ii) Total cost can be separated into two components: Fixed and variable

(iii) Graphically, the behaviour of total revenues and total cost are linear in relation to output level within a relevant range.

(iv) Selling price, variable cost per unit and total fixed costs are known and constant.

(v) All revenues and costs can be added, sub traded and compared without taking into account the time value of money.

(c) Difference between Fixed and Flexible Budgets

	Fixed Budget	**Flexible Budget**
1.	It does not change with actual volume of activity achieved. Thus it is rigid	It can be re-casted on the basis of activity level to be achieved. Thus it is not rigid.
2.	It operates on one level of activity and under one set of conditions	It consists of various budgets for different level of activity.
3.	If the budgeted and actual activity levels differ significantly, then cost ascertainment and price fixation do not give a correct picture.	It facilitates the cost ascertainment and price fixation at different levels of activity.
4.	Comparisons of actual and budgeted targets are meaningless particularly when there is difference between two levels.	It provided meaningful basis of comparison of actual and budgeted targets.

OR

(d) *Job Costing:* It is a method of costing which is used when the work is undertaken as per the customer's special requirement. When an inquiry is received from the customer, costs expected to be incurred on the job are estimated and on the basis of this estimate, a price is quoted to the

customer. Actual cost of materials, labour and overheads are accumulated and on the completion of job, these actual costs are compared with the quoted price and thus the profit or loss on it is determined.

Job costing is applicable in printing press, hardware, ship-building, heavy machinery, foundry, general engineering works, machine tools, interior decoration, repairs and other similar work.

Batch Costing: It is a variant of job costing. Under batch costing, a lot of similar units which comprises the batch may be used as a unit for ascertaining cost. In the case of batch costing separate cost sheets are maintained for each batch of products by assigning a batch number. Cost per unit in a batch is ascertained by dividing the total cost of a batch by the number of units produced in that batch.

Such a method of costing is used in the case of pharmaceutical or drug industries, readymade garment industries, industries, manufacturing electronic parts of T.V. radio sets etc.