Paper 8- Cost Accounting

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Full Marks: 100 **Time allowed: 3 hours**

Part-I

Answer Question Number 1. All parts of this question are compulsory.

1. Answer the following questions

(a) Choose the most appropriate alternative for the following (you may write only the Roman numeral and the alphabet chosen for your answer): [1x10=10]

(i) **In which of the following incentive plan of payment, wages on time basis arenot guaranteed?**
- **(a) Taylor's differential piece rate system**
- **(b) Rowan plan**
- **(c) Gantt's task and bonus system**
- **(d) Halsey plan**

(ii) **Standards deals with the principles and methods of determining depreciation and amortization cost -**
- **(a) CAS 12**
- **(b) CAS 15**
- **(c) CAS 16**
- **(d) CAS 9**

(iii) **Charging to a cost center those overheads that result solely for the existenceof that cost center is known as**
- **(a) Allotment**
- **(b) Apportionment**
- **(c) Allocation**
- **(d) Absorption**

(iv) **Which of the following is not an element of works overhead?**
- **(a) Product inspector's salary**
- **(b) Sales manager's salary**
- **(c) Plant manager's salary**
- **(d) Factory repairman's wages**

(v) **Continuous stock taking is a part of –**
- **(a) Perpetual Inventory**
- **(b) Annual stock taking**
- **(c) ABC analysis**
- **(d) None of these**

(vi) **Budgets are shown in_____Terms**
- **(a) Materialistic**
- **(b) Qualitative**
- **(c) Both (b) and (c)**
- **(d) Quantitative**

(vii) **In Reconciliations Statements, Incomes shown only in financial accounts are.**
- **(a) Deducted from costing profit**
- **(b) Deducted from financial profit**

(c) Added to financial profit
(d) Ignored

(viii) In a process 8000 units are introduced during a period. 5% of input is normalloss. Closing work in progress 60% complete is 1000 units. 6600 completedunits are transferred to next process. Equivalent production for the period is:
(a) 7440 units
(b) 7200 units
(c) 5400 units
(d) 9000 units

(ix) Labour costs requiring special treatment:
(a) Idle time
(b) Overtime
(c) Fringe benefits
(d) Holiday and vacation pay

(x) Example of Direct Expenses
(a) Royalty charged on production
(b) Bonus to employee
(c) None of these
(d) Rent

Answer: 1 (a)

(i) B	(ii)C	(iii) C	(iv) B	(v) A
(vi)D	(vii)B	(viii) D	(ix) B	(x) A

(b) Match the following: **[5×1=5]**

	Column I		Column II
(i)	**Breakeven point (in Quantity)**	**A.**	**Total Earnings = R × √S×H**
(ii)	**Research and Development Cost**	**B.**	**CAS 2**
(iii)	**Barth variable sharing plan**	**C.**	**Fixed Cost/ Contribution per unit**
(iv)	**Capacity Determination**	**D.**	**It relates to net profit to total assets**
(v)	**Return on total resources**	**E.**	**CAS 14**

Answer: 1 (b)

	Column I		Column II
(i)	Return on total resources	A.	Fixed Cost/ Contribution per unit
(ii)	Barth variable sharing plan	B.	It relates to net profit to total assets
(iii)	Breakeven point (in Quantity)	C.	CAS 2
(iv)	Capacity Determination	D.	CAS 14
(v)	Research and Development Cost	E.	Total Earnings = R × √S×H

(c) Say True or False for the following question: **[5×1=5]**

(i) Variable Cost is the change in the cost due to change in activity from one level to another.

(ii) Identification of direct expenses shall be based on traceability in an economically feasible manner.

(iii) ABC analysis is based on the principle of management by exception.

(iv) **FIFO methods are followed for evaluation of equivalent production when prices are fluctuating.**

(v) **A budget manual is the summary of all functional budgets.**

Answer: 1 (c)

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

(d) Fill in the blanks: [5×1=5]

(i) **In a company there were 1200 employee on the rolls at the beginning of a year and 1180 at the end. During the year 120 persons left services and the labour turnover to flux method is 9.08%.**

(ii) **_____ nominee from the regulate like CAG, RBI to the CASB Board.**

(iii) **Reconciliations Statements, Income s shown only in Financial accounts are**

(iv) **The method of costing used in undertaking like gas companies, cinema houses, hospitals etc is known as___.**

(v) **Cash budget is a part of_____budget.**

Answer (d)

(i) 96	(ii) Four	(iii)Added to costing profit	(iv) Operating costing	(v) Financial

Part-II

Answer any five questions from question numbers 2 to 8. Each question carries 15 marks [5 ×15= 75]

2. (a) The existing Incentive system of ABC Ltd is as under:

Normal working week : 5 days of 8 hours each plus 3 late shifts of 3 hours eachDay work: ₹ 150 per hour

Late shift : ₹ 200 per hour

Average output per operator for 49 hours week i.e. including3 late shifts :125 articles.

In order to increase output and eliminate overtime, it was decided to switch on to asystem of payment by results. The following information is obtained:

Time rate (as usual) : ₹ 150 per hourBasic time allowed for 15 articles : 5 hours

Piece -work rate : Add 30% to basic piece -rate

Premium Bonus : Add 50% to timeRequired:

Earning of the wealler produced and labour cost per article for one operator under the following systems:

(i) **Existing time -rate**

(ii) **Straight piece -work**

(iii) **Rowan system**

(iv) **Halsey premium system**

Assume that 140 articles are produced in a 40 -hour week under straight piece work, Rowan Premium System, the Halsey Premium System above and worker earns half the time saved under Halsey Premium System. [8]

2. (b) There are three production departments and two service departments in a company.The overheads of service departments are charged on percentage basis as under:

Department	Production Departments			Service Departments	
	A	B	C	P	Q
Total Overhead (₹)	9,000	6,000	3,000	702	900
Services provided by P	20%	40%	30%	-	10%
Services provided by Q	40%	20%	20%	20%	-

What is the total o/w cost for the production department? Use simultaneous equation method. [7]

Answer 2(a):

Table showing Labour Cost per Article

Method of payment	Hours Worked	Weekly earnings produced (Rs.)	Number of articles	Labour cost per article (Rs)
Existing time rate	49	7,800	125	62.40
Straight piece rate System	40	9,100	140	65
Rowan premium system	40	8571.43	140	61.22
Halsey premium system	40	8,250	140	58.93

Working Notes:

(i) Existing time rate		
Weekly wages	40 hours @ Rs 150 per hr.	= Rs 6,000
	9 hours @ Rs.200 per hr.	= Rs.1,800
		= Rs. 7,800
(ii) Piece rate system		
Basic time	5 hours for 15 articles	
	Cost of 15 articles at hourly rate of Rs150/hr	= Rs.750
	Add: 30%	= Rs.225
		= Rs.975
Rate per article	= 975/15 = Rs. 65	
Earning for the week	= 140 articles × R s . 65 = Rs.9,100	
(iii) Rowan premium system		
Basic time	5 hours for 15 articles	
	50% to time	
	7.5 hours for 15 articles or 30 minutes per article	
Time allowed for 140 articles = 70 hours		
Actual time taken for 140 articles = 40 hours		
Time saved = 30 hours		
$\text{Earnings} = (\text{HW} \times \text{RH}) + \left(\frac{\text{Time Saved}}{\text{Time Allowed}} \times \text{HW} \times \text{RH}\right)$ $= (40 \text{ hours} \times ₹ 150) + \left(\frac{30}{70} \times 40 \times ₹ 150\right)$ $= ₹ 8571.43$		

(iv) Halsey premium system:

$$\text{Earnings} = (HW \times RH) + \left[\frac{50}{100}(TA - HW) \times RH\right]$$

$$= (40 \times ₹\ 150) + \left[\frac{1}{2}(70 - 40) \times 150\right]$$

$$= ₹\ 8,250$$

Answer 2(b):

Let 'x' be the total overhead of Service Department P and 'y' be the total overhead of Service Department E. Then we have:

$x = 702 + 0.2\ y$
$y = 900 + 0.1x$
To solve the equations, rearrange it and multiply by 10 to eliminate decimals, we get:

$10x - 2y = 7,020$ ...(i)
$-x + 10y = 9,000$ ...(ii)

Multiplying equation (ii) by 10 and equation (i) by 1; and adding it in equation (i), we get:

$10x - 2y = 7,020$
$-10x + 100y = 90,000$
or $98y = 97,020$ or $y = 990$
By substituting value of y in equation (i), we get:
$10x - 2(990) = 7,020$ or $10x = (2 \times 990) + 7,020$ or $x = 900$

Apportionment of Overhead by Simultaneous Equation Method

Department	A	B	C	P	Q
Overhead (given)	9000	6000	3000	702	900
Overhead of P	180	360	270	(900)	90
Overhead of Q	396	198	198	198	(990)
Total	9576	6558	3468	-	-

3. (a) List the functions of the Cost Accounting Standard Board [6]

3. (b) Given below is the Trading and profit and Loss Account of ABC company for the year ended 31st March, 2022:

Particulars	Amount (Rs)	Particulars	Amount (Rs)
To Materials	26,40,000	By Sales (60,000 units)	60,00,000
To wages	16,10,000	By Stock (2,000 units)	1,60,000
To Factory Expenses	9,30,000	Work-in-progress: (Rs)	
To Administration Expenses	3,82,400	Materials 64,000	
To Selling Expenses	4,60,000	Wages 36,000	
To Preliminary Expenses written off	50,000	Factory Expenses 20,000	1,20,000
Net Profit	2,25,600	By Dividend Received	18,000
	62,98,000		62,98,000

The company manufactures standard units. In the Cost Accounts:

(i) Factory Expenses have been allocated to production at 25% of prime Cost;

(ii) Administrative Expenses at Rs.5 per unit produced and
(iii) Selling Expenses at RS.6 per unit sold.

What is the profit as per the costing P/L of the Co. and reconcile the same with the profit disclosed by the Financial Accounts. [9]

Answer 3(a):

The functions of the Cost Accounting Standard Board :-

(a) To issue the framework for the Cost Accounting Standards.

(b) To equip the Cost & Management Accounting professionals with better guidelines on cost Accounting Principles.

(c) To assists the members in preparation of uniform cost statements under variousstatutes.

(d) To provide from time to time interpretations on Cost Accounting Standards.

(e) To issue application guidance relating to particular standard.

(f) To propagate the Cost Accounting Standards and to persuade the users to adopt them in the preparation and presentation of general purpose CostStatement.

(g) To persuade the government and appropriate authorities to enforce Cost Accounting Standards, to facilitate the adoption thereof, by industry and corporate entities in order to achieve the desired objectives of standardization ofCost Accounting Practices.

(h) To educate the users about the utility and the need for compliance of Cost Accounting Standards.

Answer 3(b):

Costing P & L Account

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Particulars	Amount (Rs.)	Particulars	Amount (Rs.)
To Materials	26,40,000	By Sales (60,000 units @ Rs 100 per unit)	60,00,000
To Wages	16,10,000		
Prime Cost	42,50,000	By Closing WIP	1,20,000
To Factory Expenses (25% of Prime cost)	10,62,500	By Closing Stock of Finished Goods (2000 units @ Rs.88.75)	1,77,500
Factory Cost	53,12,500		
To Administrative Expenses (62,000 × Rs.5)	3,10,000		
Cost of production (62,000 units @ Rs.88.75 per unit)	55,02,500		
Cost of goods sold (60,000 units)	53,25,000		
To Selling Expenses (60,000 × Rs.6 per unit)	3,60,000		
Cost of Sales	56,85,000		
To Profit	3,15,000		
	62,97,500		**62,97,500**

Reconciliation Statement

	Amount (Rs)	Amount (Rs)
Profit as per Cost Accounts		3,15,000
Add: Factory Expenses over absorbed in Cost Accounts (Rs10,62,500 – Rs9,30,000)	1,32,500	
Financial income not considered in Cost Accounts	18,000	1,50,500
		4,65,500
Less: Selling Expenses under absorbed in cost accounts (Rs4,60,000 - Rs3,60,000)	(1,00,000)	
Administrative Expenses under absorbed in cost accounts (Rs3,82,400 – Rs3,10,000)	(72,400)	
Closing stock over valued in cost accounts (Rs1,77,500 – Rs1,60,000)	(17,500)	
Preliminary Expenses written off in Financial accounts only	(50,000)	2,39,900
Profit as per Financial Accounts		2,25,600

4. (a) Component 'Y' is made entirely in cost centre 100. Material cost is 6 paise percomponent and each component takes 10 minutes to produce. The machine operator is paid 72 paise per hour, and machine hour rate is Rs. 1.50. The setting up of the machine toproduce the component 'Y' takes 2 hours 20 minutes.

On the basis of this information, prepare a cost sheet showing the production and settingup cost, both in total and per component, assuming that a batch of :

(a) 10 components,

(b) 100 components, and

(c) 1000 components is produced

[7]

4. (b) The following details are extracted from the costing records of PQ Ltd., an oil mill for the year ended 31 st March, 2019. Purchased 2800 tons of oilseeds for Rs.1,40,000 and other expenses were as under:

	Crushing (Rs.)	Refining (Rs.)	Finishing (Rs.)
Cost of Labour	**12,000**	**7,000**	**5,000**
Sundry Material	**5,000**	**4,000**	**3,000**
Electric Power	**4,000**	**3,000**	**1,600**
Steam	**3,000**	**2,000**	**2,500**
Repair of Machine	**3,000**	**2,000**	**500**
Cost of Casks	**-**	**-**	**8,400**

Factory Expenses were Rs.12,000 to be apportioned on the basis of wages. 2500 tons of crude oil was produced; 2240 tons of oil was refined and finally 2200 tons of oil was finished for delivery. Realized Rs.5,000 from sale of sacks; Rs.8,000 by sale of 250 tons of oil residue and Rs.10,000 by sale of 200 tons of by- products in refining process.

What is the total cost of the finished product? . [8]

Answer 4(a) :

Cost Sheet Component 'Y'

Particulars	Batch Size					
	10 Components		100 Components		1000 components	
	Total	Per component	Total	Per component	Total	Per component
A. Setting up Cost:						
Machine operator wages (2hours 20 minutes @ ₹ 72 p.h)	1.68	0.168	1.68	0.0168	1.68	0.00168
Overheads (2 hours 20 minutes @ ₹ 1.50 p.h)	3.50	0.350	3.50	0.0350	3.50	0.00350
B. Production Cost:						
Material cost @ ₹0.06 per component	0.60	0.060	6.00	0.0600	60.00	0.06000
Machine operator wages [Refer to W.N. (i)]	1.20	0.120	12.00	0.1200	120.00	0.12000
Overheads [Refer to W.N (ii)]	2.50	0.250	25.00	0.2500	250.00	0.25000
C. Total Cost : (A+B)	9.48	0.948	48.18	0.4818	43518	0.43518

Working Notes:

	10 Components	100 Components	1000 Components
(i) Operators Wages Time taken in minutes by machine operators and machine @ 20 minutes per component	100	1000	10000
Operators Wages @ ₹ 0.72 per hour	[100/60 × ₹ 0.72]=1.2	[1000/60×0.72] = 12	[10000/60×0.72]= 120
(ii) Overheadexpenses Total overhead expenses @ ₹1.50 per Machine	2.50	25.00	250.00
	[100/60 × ₹ 1.50]	[1000/60 × ₹ 1.50]	[10000/60 × ₹ 1.50]

Answer 4(b):

Crushing Process Account

Particulars	Tons	Amount(₹)	Particulars	Tons	Amount(₹)
To Copra	2,800	1,40,000	By Copra sacks	-	5,000
To Labour		12,000	By Copra Residue	250	8,000
To Sundry Materials		5,000	By Loss in crushing (balancing figure)	50	-

To Electric Power		4,000	By Transfer to Refining @ ₹64 per ton	2,500	1,60,000
To Steam		3,000			
To Repairs of Machines		3,000			
To Factory Expenses		6,000			
	2,800	1,73,000		2,800	1,73,000

Refining Process Account

Particulars	Tons	Amount(₹)	Particulars	Tons	Amount(₹)
To Crushing processA/c	2,500	1,60,000	By sale of byproducts	200	10,000
To Labour		7,000	By Loss in Refining Process (balancing figure)	60	-
To Sundry Materials		4,000	By Transfer to Finishing Process @ ₹ 76.5625 per ton	2,240	1,71,500
To Electric Power		3,000			
To Steam		2,000			
To Repairs of Machines		2,000			
To Factory Expenses		3,500			
	2,500	1,81,500		2,500	1,81,500

Finishing Process Account

Particulars	Tons	Amount(₹)	Particulars	Tons	Amount(₹)
To Refining ProcessA/c	2,240	1,71,500	By Loss in Finishing (balancing figure)	40	-
To Labour		5,000	By Cost of production transferred to Finished Oil A/c @ ₹ 84.82 per ton	2,200	1,86,600
To Sundry Materials		3,000			
To Electric Power		1,600			
To Steam		2,500			
To Repairs of Machines		500			
To Factory Expenses		2,500			
	2,240	1,86,600		2,240	1,86,600
To Cost of production of Finished Oil	2200	1,86,600	By Total Cost @ ₹ 88.64 per ton	2200	1,95,000
To Cost of Casks		8,400			
	2,200	1,95,000		2,200	1,95,000

5. (a) Blue Line Transport company has been given a license to ply a non air-conditioned bus between Delhi and Chandigarh covering a distance 75 km has been obtained. The Volvo bus will make 4 round trips in a day for 25 days in a month. It has a seating

capacity of 30 passengers and on an average 85% occupancy is expected throughout. The purchase price of the bus is ₹12,00,000, it has a life of 10 years with a salvage value of ₹ 20,000 at the end of its life. The details of the operating expenses are as under:

Insurance	**₹24,000 per annum**
Garage rent	**₹ 4,000 per quarter**
Road Tax	**₹ 6,000 per annum**
Repairs	**₹ 8,000 per quarter**
Administration	**₹ 2,000 per month**
Driver's salary	**₹ 6,000 per month**
Conductor's salary	**₹ 4,000 per month**
Tyres and Tubes	**₹ 6,000 per quarter**
Diesel	**₹ 22 per litre**
Oil and Sundries	**₹ 30 per 100 km run**

The bus consumes a litre of diesel for every 6 km of run. The company requires aprofit of 30% on total taking.

You are required to prepare an annual cost sheet showing the cost per passenger kilometer and the one way fare per passenger from Delhi to Chandigarh. [8]

5. (b) Y Ltd. Undertook a contract for ₹8,00,000 on 1st January, 2022. The companyfurnishes the following details for the year ended 31st December, 2022:

	(₹)
Material consumed	**2,15,000**
Direct Expenses	**15,000**
Wages	**50,000**
Materials returned to stores	**5,000**
Materials stolen from site	**15,000**
Insurance claim admitted	**9,000**
Works expenses @ 20% on wages	
Office expenses @ 10% on works cost	
Materials in hand on 31.12.2022	**25,000**
Cash received to the extent of 90% of works certified	**4,86,000**
Cost of work uncertified	**20,000**

Plant sent to site costing ₹ 80,000 with a scrap value of ₹ 10,000 and its useful life is 5 years. The plant was used on the contract for 146 days.

Required:

Prepare Contract Account showing therein the cost of materials issued to site and the amount of profit or loss to be transferred to the profit & Loss Account . [7]

Answer 5(a)

Operating Cost Sheet

Particulars	**Workings**	**Amount (₹)**
Fixed Charges:		
Insurance		24,000
Garage rent	[4000 × 4 quarters]	16,000
Road tax		6,000
Repairs	[8,000 × 4 quarters]	32,000
Administration	[2,000 × 12]	24,000
Driver's salary	[6,000 × 12]	72,000

Conductor salary	[4,000 × 12]	48,000
Tyres & tubes	[6,000 × 4]	24,000
Depreciation	[(12,00,000 – 20,000)/10 years]	1,18,000
Variable charges :		
Diesel	[W.N. 1]	6,60,000
Oil & sundries	[30/100km × 1,80,000]	54,000
Total costs		10,78,000
Cost per passenger km	$= \frac{10,78,000}{45,90,000 \text{ passenger km}}$	= ₹ 0.235
Profit % on total taking		30%
□ Fare per passenger per km	$= \frac{0.235}{70} \times 100$	= ₹ 0.336
□ Fare for 75km	= 75 km × ₹ 0.336	₹ 25.20

Working Notes:

1. Computation of Km run:
   = 75 km × 2 × 4 × 25 days × 12 months
   = 1,80,000 Km
2. Diesel:
   $= \frac{1,80,000 \text{km}}{6 \text{km}} \times ₹ 22$
   = ₹ 6,60,000
3. Computation of passenger km
   $= 1,80,000 \text{ km} \times 30 \text{ passengers} \times \frac{85}{100}$
   = 45,90,000 passenger km
4. Depreciation is taken as a fixed charge.

Answer 5(b):

Calculation of Cost of Materials issued to site

	₹
Materials consumed	2,15,000
Add: Materials stolen	15,000
Materials returned to stores	5,000
Materials in hand (31.12.2019)	25,000
	2,60,000

Contract Account for the year ended 31st December , 2019

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Particulars		(₹)	Particulars		(₹)
To Materials issued to site		2,60,000	By Materials returned to stores		5,000
To Direct Expenses		15,000	By Insurance claim A/c (Loss of Stock)		9,000
To Wages		50,000	By Profit and Loss A/c (stolen ₹ 15,000-9000)		6,000
To Works expenses		10,000	By Materials in hand		25,000
[20% of wages]					
To Office Expenses (W.N 1)		29,560	By Work in progress:		
To Depreciation on plant (W.N.2)		5,600	Work certified	5,40,000	
To Notional profit c/d		2,34,840	Work uncertified	20,000	5,60,000
		6,05,000			6,05,000
To Profit & Loss A/c (WN 3)		1,40,904	By Notional Profit b/d		2,34,840
To Reserve c/d		93,936			
		2,34,840			**2,34,840**

Working Notes:

1. Calculation of works cost and Office expenses:

	₹
Materials consumed	2,15,000
Add: Direct Wages	50,000
Direct Expenses	15,000
Prime Cost	2,80,000
Add: Works expenses	10,000
Depreciation	5,600
Works Cost	2,95,600
Office expenses[10% of 2,95,600]	29,560

2. Calculation of Depreciation on plant:

		Amount (₹)
Original Cost of plant		80,000
Less: Residual Value		10,000
Chargeable cost of plant	[a]	70,000
Life of the plant	[b]	5 years
Annual Depreciation	[a÷b] × 146/365	5,600

3. Profit to be transferred to profit & loss Account:

$$\% \text{ of Completion} = \frac{\text{Work Certified}}{\text{Contract Price}} \times 100$$

$$= \frac{5,40,000}{8,00,000} \times 100 = 67.50\%$$

Since the completion of contract is greater than 50% but not greater than 90%, 2/3 rd of the Notional Profit in the ratio of Cash received to work certified will be transferred to profit & Loss A/c.

$$= \frac{2}{3} \times \text{Notional profit} \times \frac{\text{Cash received}}{\text{Work Certified}}$$

$$= \frac{2}{3} \times 2,34,840 \times \frac{4,86,000}{5,40,000}$$

= ₹ 1,40,904

6. (a) The trading results of XY Limited for the two years have been:

Year	Sales (₹)	Profit /(Loss) (₹)
2022	56,00,000	8,00,000
2021	44,00,000	5,00,000

Compute the following:

(i) P/ V ratio;

(ii) Fixed costs;

(iii) Break- even sales;

(iv) Profit when Margin of safety ₹19,20,000;

(v) The sales required to earn a profit of ₹6,00,000 **[8]**

6. (b) A ball manufacturer marks an average net profit of ₹5.00 per piece on a selling price of ₹ 30.00 by producing and selling 5 ,000 pieces or 50% of the capacity. His cost of sales is

	Amount (₹)
Direct material	11.25
Direct wages	6.75
Works overheads (50% fixed)	5.50
Sales overheads (25% variable)	1.50

During the current year, he intends to produce the same number but anticipates that fixed charges will go up by 8% which direct labour price and material will increase by 10% and 8% respectively but he has no option of increasing the selling price. Under this situation, he obtains an offer for further 2 5% of the capacity. What minimum price you will recommend for acceptance to ensure the manufacturer an overall profit of ₹ 25,000. **[7]**

Answer 6(a)

(i) P/V Ratio $= \left(\frac{\text{Change in profit}}{\text{Change in sales}}\right) \times 100$

$= \left(\frac{3,00,000}{12,00,000}\right) \times 100$

$= 25\%$

(ii) Fixed Cost $= (\text{Sales} \times \text{P/V Ratio}) - \text{profit}$

$= (56,00,000 \times 25\%) - 8,00,000$

$= ₹\ 6,00,000$

(iii) Break even sales $= \left(\frac{\text{Fixed Cost}}{\text{PV Ratio}}\right)$

$= \left(\frac{6,00,000}{25\%}\right)$

$= ₹\ 24,00,000$

(iv) Margin of Safety $= \left(\frac{\text{Profit}}{\text{PV Ratio}}\right)$

$= \left(\frac{4,80,000}{25\%}\right)$

$= ₹\ 19,20,000$

(v) Sales required to earn profit of ₹ 6,00,000

$= \left(\frac{\text{Fixed cost} + \text{desired Profit}}{\text{PV Ratio}}\right)$

$= \left(\frac{6,00,000 + 6,00,000}{25\%}\right)$

$= ₹\ 48,00,000$

Answer 6(b):

Computation of Profit at present after increase in cost :

	Particulars	**Amount (₹)**
I.	Selling price	30.00
II.	Variable cost	
	Material (11.25 × 108/100)	12.15
	Labour (6.75 × 110/100)	7.425
	Works Overhead	2.75
	Sales Overhead	0.375

	Total	22.70
III.	Contribution per unit (I – II)	7.30
IV.	Total Contribution (5,000 × 7.30)	36,500
V.	Fixed cost Works OH 2.75Sales OH 1.125 [3.875 × 5,000 = 19,375 × 108/100]	20,925
	Profit (IV – V)	15,575

Computation of selling price of the order:

	(₹)
Variable cost of order (2,500 × 22.70)	56,750
Add: Required profit (25,000 – 15,575)	9,425
Sales required	66,175
Selling price of order = 66,175/2,500	26.47
[(5000/50%)*25%] = 2500 units	

7. (a) The standard material cost for 100kg of chemical D is made up:
Chemical X 30kg @ ₹ 4 per kg
Chemical Y 40 kg @ ₹ 5 per kg
Chemical Z 80 kg @ ₹ 6 per kg
In a batch 500 kg of chemical P were produced from a mix of
Chemical X 140kg @ ₹ 588
Chemical Y 220kg @ ₹ 1,056
Chemical Z 440kg @ ₹ 2,860
How do yield mix and price of factors contribute to the variance in the actual cost per 100kg of chemical P over the standard cost?
Show the variances. **[8]**

7. (b) Calculate the cash Balance for the three months ending 30th June, 2022 from the information given below; in the few of a cash budge

(i)

Month	Sales (₹)	Materials (₹)	Wages (₹)	Overheads (₹)
February	15,000	9,800	3,200	1,900
March	16,000	9,200	3,200	2,100
April	17,000	9,500	3,400	2,200
May	18,000	10,500	3,800	2,400
June	19,000	10,600	4,200	2,500

(ii) Credit terms are: -
Sales/ Debtor – 10% sales are on cash, 50% of the credit sales are collected next month and the balance in the following month.
Creditors:
Materials 2 months
Wages 1 month
Overheads ½ month
(iii) Cash and bank balance on 1st April, 2022 is expected to be ₹15,000
(iv) Other relevant information is:
- **Plant and machinery will be installed in February 2022 at a cost of ₹ 1,00,000. The monthly installments of ₹ 2,000 is payable from April onwards.**

- **Dividend @ 5% on Preference share capital of ₹ 1,00,000 will be paid on 1 st June.**
- **Advance to be received for sale of vehicles ₹ 11,000 in June.**
- **Dividends from investments amounting to ₹ 5,000 are expected to receive inJune.**

[7]

Answer 7(a):

Analysis of Given Data

Amount (₹)

Chemical	Standard Data			Actual Data		
	Quantity	Price	Value(₹)	Quantity	Price	Value(₹)
A	30	4	120	28		117.60
B	40	5	200	44		211.20
C	80	6	480	88		572.00
	150		800	160		900.80
Less: Loss	50		-	60		-
	100		800	100		900.80

Computation of Required Values

Amount (₹)

Chemical	SQSP(1)	RSQSP(2)	AQSP(3)	AQAP(4)
A	30 × 4 =120	32.00 × 4 = 128.00	28 × 4 =112.00	117.60
B	40 × 5 = 200	42.67 × 5 = 213.35	44 × 5 = 220.00	211.20
C	80 × 6 = 480	85.33 × 6 = 512.00	88 × 6=528.00	572.20
	800.00	853.35	860.00	900.80

Computation of RSQ:

$$RSQ = \left(\frac{\text{SQ for that product}}{\text{SQ for all the product}}\right) \times \text{AQ for that product}$$

$$\text{For A} = \left(\frac{30}{150}\right) \times 160 = 32.00 \text{ units}$$

$$\text{For B} = \left(\frac{40}{150}\right) \times 160 = 42.67 \text{ units}$$

$$\text{For C} = \left(\frac{80}{150}\right) \times 160 = 85.33 \text{ units}$$

Where (1) SQSP = Standard cost for standard material =₹800

i. RSQSP = Revised standard cost of material = ₹853.35

ii. AQSP = Standard cost of actual material = ₹860.00

iii. AQAP = Actual cost of material = ₹900.80

Computation of required variances:

a) Material sub- usage variance = (1) - (2) = ₹53.35(A) [₹ 800 - ₹ 853.35]

b) Material mix variance = (2) – (3) = ₹ 6.65(A) [₹ 853.35 - ₹ 860]

c) Material usage variance = (1) – (3) = ₹ 60(A) [₹ 800 - ₹ 860]

d) Material price variance = (3) – (4) = ₹ 40.80(A) [₹ 860 - ₹ 900.80]

e) Material cost variance = (1) – (4) = ₹ 100.80(A) [₹ 800 - ₹ 900.80]

Answers 7(b):

Cash Budget (April – June 2019)

Particulars	April (₹)	May (₹)	June (₹)
1. Balance b/f	15,000	13,500	13,250
2. Receipts:			
Sales (W N 1)	15,650	16,650	17,650
Dividend			5,000
Advance against vehicle			11,000
Total	30,650	30,150	46,900
3. Payments:			
Materials	9,800	9,200	9,500
Wages	3,200	3,400	3,800
Overhead*	2,150	2,300	2,450
Capital expenditure	2,000	2,000	2,000
Dividend on preference shares			5,000
Total	17,150	16,900	22,750
4. Balance c/f	13,500	13,250	24,150

Working Notes:

1. Collection from debtors:

Month	Calculation	April (₹)	May (₹)	June (₹)
Feb	(15,000 – 10% of 15,000) × 50%	6750		
March	(16,000 – 10% of 16,000) × 50%	7,200	7,200	
April	(10% of 17,000)	1,700		
	(17,000 – 10% of 17,000) × 50%		7,650	7,650
May	(10% of 18,000)		1,800	
	(18,000 – 10% of 18,000) × 50%			8,100
June	(10% of 19,000)			1,900
Total		15,650	16,650	17,650

*****Overheads payment in each month is to be taken as half of the current month plus half ofthe previous month

8. Short note: (any three) **[5×3=15]**

(a) Economic Order Quantity: (EOQ)

(b) Cost Unit

(c) Difference between Financial Accounting and Cost Accounting

(d) Advantages of Marginal Costing (any five)

Answer: 8 (a)

Economic Order Quantity: (EOQ)

The total costs of a material usually consist of Buying Cost + Total Ordering Cost + Total Carrying Cost. Economic Order Quantity is 'The size of the order for which both ordering and carrying cost are minimum'.

Ordering Cost: The costs which are associated with the ordering of material. It includescost of staff posted for ordering of goods, expenses incurred on transportation,inspection expenses of incoming material. ..... etc

Carrying Cost: The costs for holding the inventories. It includes the cost of capitalinvested in inventories. Cost of storage, Insurance ..... etc

The assumptions underlying the Economic Ordering Quantity (EOQ): The calculation ofeconomic order of material to be purchased is subject to the following assumptions:

(a) Ordering cost per order and carrying cost per unit per annum are known and theyare fixed.
(b) Anticipated usage of material in units is known.
(c) Cost per unit of the material is constant and is known as well.
(d) The quantity of material ordered is received immediately i.e lead time is Zero.

The famous mathematician 'WILSON' derived the formula used for determining the size of order for each purchases at minimum ordering and carrying costs, which is as below : - Economic Ordering Quantity =

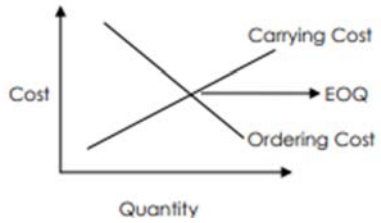
Where,

A = Annual demand /Consumption

O = Ordering Cost per order

C = Carrying Cost per unit per annum.

Graphical representation of EOQ:



(b) Cost Unit: Cost Unit is a device for the purpose of breaking up or separating costs into smaller sub divisions attributable to products or services. Cost unit can be defined as a 'Unit of product or service in relation to which costs are ascertained'. The cost unit is the narrowest possible level of cost object. It is the unit of quantity of product, service of time (or combination of these) in relation to which costs may be ascertained or expressed. We may, for instance, determine service cost per tonne of steel, per tonne - kilometre of a transport service or per machine hour. Sometimes, a single order or contract constitutes a cost unit which is known as a job. A batch which consists of a group of identical items and maintains its identity through one or more stages or production may also be taken as a cost unit. A few examples of cost units are given below:

Industry/Product	Cost Unit
Automobile	Number of vehicles
Cable	Metres/Kilometres
Cement	Tonne
Chemicals/Fertilizers	Litre/kilogram/tonne
Gas	Cubic Metre
Power -Electricity	Kilowatt Hour
Transport	Tonne-Kilometre, Passenger -Kilometre
Hospital	Patient Day
Hotel	Bed Night
Education	Student year
Telecom	Number of Calls
BPO Service	Accounts handled
Professional Service	Chargeable Hours

(c) Distinction between Financial Accounting and Cost Accounting

The main differences between Financial and Cost Accounting are as follows:

(a) It provides the information about thebusiness in a general way. i.e Profit and Loss Account, Balance Sheet of the business to owners and other outside partners.	(a) It provides information to the management for proper planning, operation, control and decision making.
(b) It classifies records and analyses the transactions in a subjective manner, i.e according to the nature of expense.	(b) It records the expenditure in an objective manner, i.e according to the purpose for which the costs areincurred.

(c) It lays emphasis on recording aspect without attaching any importance to control.	(c) It provides a detailed system of control for materials, labour and overhead costs with the help of standard costing and budgetary control.
(d) It reports operating results and financial position usually at the end ofthe year.	(d) It gives information through costreports to management as and when desired.
(e) Financial Accounts are accounts ofthe whole business. They are independent in nature.	(e) Cost Accounting is only a part ofthe financial accounts and discloses profit or loss of each product, job or service.
(f) Financial Accounts records all the commercial transactions of the business and include all expenses i.eManufacturing, Office, Selling etc	(f) Cost Accounting relates to transactions connected with Manufacturing of goods and services, means expenses whichenter into production.

(d) Advantages of Marginal Costing:

1. Marginal costing system is simple to operate than absorption costing because theydo not involve the problems of overhead apportionment and recovery.
2. Marginal costing avoids, the difficulties of having to explain the purpose and basis of overhead absorption to management that accompany absorption costing.Fluctuations in profit are easier to explain because they result from cost volume interactions and not from changes in inventory valuation.
3. It is easier to make decisions on the basis of marginal cost presentations, e.g.,marginal costing shows which products are making a contribution and which are failing to cover their avoidable (i.e., variable) costs. Under absorption costing the relevant information is difficult to gather, and there is the added danger that management may be misled by reliance on unit costs that contain an element of fixed cost.
4. Marginal costing is essentially useful to management as a technique in cost analysis and cost presentation. It enables the presentation of data in a manner useful to different levels of management for the purpose of controlling costs.Therefore, it is an important technique in cost control.
5. Future profit planning of the business enterprises can well be carried out by marginal costing. The contribution ratio and marginal cost ratios are very useful toascertain the changes in selling price, variable cost etc. Thus, marginal costing is greatly helpful in profit planning.