

21. 2055. Q. No. 16

A product passes through two processes for completion. The output of each process is transferred to the next process at a price calculated to give a profit on 20% on the transfer price. The output of the second process is charged to finished stock on a similar basis. The following information is obtained for a period.

Items	Process I (Rs.)	Process II (Rs.)	Finished Stock (Rs.)
Opening stock	12,000	72,000	1,40,000
Direct material	80,000	1,20,000	-
Direct labor	60,000	68,000	-
Production overhead	70,000	61,000	-
Closing stock	22,000	11,000	1,00,000

The stock in process is valued at prime cost. Inter-process profit included in the opening stock of process II was Rs.6,000 and finished stock was Rs.35,000. Sales during the period are of Rs.9,00,000.

Required: (a) Process I A/c (b) Process II A/c (c) Finished stock account
(d) Statement showing actual realized profit.

Ans.: (a) Net profit: Rs.50,000 (b) Net profit: Rs.1,40,000 (c) Net profit: Rs.1,60,000 (d) Rs.3,62,436 [4 + 5 + 4+2]

22. 2054. Q. No. 16

An article is manufactured through two process I and II. Prepare a process account and sales account for each process and Profit & Loss statement. [5 + 1+5+1+3]

	Process I	Process II
Productive wages	Rs.40,000	Rs.30,000
Machines expense	Rs.20,000	Rs.10,000
Scrap sold at Rs.10	200 units	100 units
Selling price per unit	Rs.60	Rs.100

Main raw materials introduced were 2,000 units at Rs10 each. One-third output of the Process- I is transferred to warehouse for sale and balance transferred to next process. Establishment expenses of Rs.10,000 and selling and distribution expenses for the period were Rs.5,000.

Ans.: Transfer to Process II A/c: 1,200 units, Rs.52,000, Profit from process I: Rs.10,000; Profit from process II: Rs.19,000, Net profit: Rs.14,000

23. 2054. Q. No. 16, 1st

Two processes are involved before a product is manufactured. The details obtained during January of this year are.

Process	Process I	Process II	Finished
Opening stock	1,000	5,000	10,000
Direct material	10,000	20,000	-
Direct labor	8,000	12,000	-
Production overhead	5,000	10,000	-
Closing stock	4,000	8,000	15,000
Inter-process profit Connected with opening stock:	-	1,000	4,000
Profit % on transferred price	20%	20%	-
Sales	-	-	1,00,000

Required: Process Accounts finished stock Account reporting prime cost where possible and portion of the profit at each stage. [6 + 6 + 3]

Ans.: Profit: P₁: Rs.5,000; P₂: Rs.16,000; FS: Rs.25,000

Unit 10: Joint and By-Product Costing

Theoretical Questions

1. 2072 Q.No.14b

Explain the characteristics of Joint product and By-product.

[5]

Numerical Problems

1. 2060. Q. No. 5, 1st

The details of an industry producing two main products are given below:

Products	A (main)	B (By product)
Sales inputs	20,000	10,000
Unit sale price in repairs	3	2
Estimated profit of selling price	—	10%
Expenses after split off (in Rs.)		
Material	15,000	6,000
Labor	4,000	2,000
Overhead	2,000	1,000

Required: Apportionment of joint manufacturing cost of Rs.28,000 between product A and B by applying reserve cost technique. [2.5 + 2.5]

Ans.: Share in joint cost A: 19,000; B: 9,000

2. 2058. Q. No. 14

Given below are the particulars of the main product and by-product realized by a company:

	Joint cost (Rs.)	Main product (Rs.)	By-product Rs.)
Material	1,20,000	80,000	20,000
Labor	30,000	30,000	10,000
Expenses	20,000	10,000	6,000

The sales revenue realized on the sale of by-product was Rs.80,000 on which 10% profit on sales was earned.

Required: Joint cost shared by main product and by-product under net realization method. [3+2]

Ans.: Share in joint cost MP: Rs.1,34,000, BP: Rs.36,000

3. 2054. Q. No. 8, 2nd

Apportion joint cost of Rs.75,000 to the main product A and by-product B by using reverse cost method on the basis of the following information and prepare comprehensive income statement incorporating total profit earned. [1 + 3]

	Main Product A	By-Product B
Sales (Rs.)	2,50,000	1,00,000
Subsequent cost as (Rs.)	75,000	50,000
Estimated selling expenses at Percentage of sales value	20%	10%
Estimated net profit on sales (in %)	—	15%

Ans.: Share in joint cost A: Rs.50,000, B: Rs.25,000; Profit A: Rs.75,000; B: Rs.15,000

Unit 11: Absorption and Variable Costing

Numerical Problems

1. 2072 Q. No. 12

XYZ company with normal capacity of 30,000 units provides the following particulars for the year ending:

Production units	32,000
Sales units	34,000
Variable manufacturing cost per unit	Rs.8
Fixed manufacturing cost	Rs.120,000
Variable selling and administrative cost per unit	Rs.3
Fixed selling and administrative cost	Rs.60,000
Selling price per unit	Rs.20

- Required: (i) Income statement under external reporting system
 (ii) Reconciliation statement showing the profit of internal reporting system
 (iii) Give the reason for the differences in profit

[5+3+2=10]

Ans: Net income Rs.118,000

2. 2072 Q.No.14 (Old)

A manufacturing company furnishes you the following information:

Units produced during the year	11,000 units	Units sold during the year	10,000 units
Ending inventory	2,000 units	Standard variable cost	Rs.5 per unit
Normal capacity	15,000 units	Fixed factory overhead per unit	Rs.3
Fixed selling & administration cost	Rs.8,000	Unit selling price	Rs.15

Required:

- (1) Income statement under absorption costing (2) Profit under variable costing

[3+2]

Ans: (1) Net income Rs.50,000 (2) Rs.47,000

3. 2071 Q. No 9

A manufacturing company provides you the following information:

Opening stock	5,000 units
Production during the period	12,000 units
Sales during the period	15,000 units
Normal capacity	13,000 units
Selling price per unit	Rs.100

Details of cost

Prime cost	Rs.60 per unit
Variable manufacturing overhead	Rs.10 per unit
Variable selling and distribution overhead	Rs.5 per unit
Fixed manufacturing overhead	Rs.65,000
Fixed selling and distribution overhead	Rs.75,000

Required: Income statement under Absorption costing system

[5]

Ans: Net income Rs.220,000

4. 2070 Q. No 9

The income statement of a book printing and distributing house selling 4,000 sets of book in the last year printed at a capacity output is as follows:

Sales revenue (4,000 sets of book @ Rs.250 per set)	1,000,000
Less: Variable cost:	
Material cost	(200,000)
Labour cost	(180,000)

Manufacturing overheads	(200,000)
Selling and distribution overheads	(80,000)
Contribution margin	340,000
Less: Budgeted fixed costs manufacturing overheads	(200,000)
Non-manufacturing overheads	(80,000)
Net income	60,000

The book printing and distributing house has made projection of selling 4,300 sets of book for the current year. There is no beginning stock of book but expected ending stock of 200 sets of book for the current year by the printing and distributing house.

The unit cost and selling price will remain unaltered for the current year.

Required: Income statement by using absorption costing

[5]

Ans: Net income Rs.95,500

5. 2069 Q. No 9

A manufacturing company supplied the following particulars for the year ending 31st Chaitra 2064:

Sales (units)	12,000
Opening stock (units)	3,000
Production (units)	9,000
Normal capacity (units)	16,000
Raw material per unit	Rs. 10
Direct wages per unit	Rs. 5
Variable manufacturing overhead	Rs. 3 per unit
Selling price	Rs. 30 per unit
Fixed Overhead:	
Manufacturing	Rs. 50,000
Administration and selling	Rs. 30,000

Required: Income statement under Absorption Costing

[5]

Ans:Rs.54,625

6. 2068 Q. No 9

A manufacturing company with normal capacity of 40,000 units supplied you the following particulars for the year ending Chaitra 30, 2064.

Opening stock in units	20,000
Production units	50,000
Sales units	60,000
Fixed manufacturing cost	80,000
Fixed selling & administrative cost	60,000
Direct Material	Rs. 10 per unit
Direct Labour	Rs. 8 per unit
Variable manufacturing overhead unit cost	Rs. 6
Variable selling & administrative unit cost	Rs. 2
Selling price per unit	Rs. 40

Required: Income Statement under absorption costing.

[5]

Ans: 680,000

7. 2067. Q. No. 9

The fixed manufacturing overhead of an industry for last year was Rs.200,000. The fixed administrative overhead was Rs.150,000 and fixed selling and distribution overhead was Rs.75,000.

The variable costs per unit of the industry are as follows:

Material	Rs.8
Direct wages	Rs.6

Variable manufacturing overhead..... Rs.7

Variable selling and distribution overhead..... Rs.4

The normal capacity output was 40,000 units.

The industry realized 44,000 units of output during the period and it has 5,000 units of beginning finished goods in that period.

The Industry sold 45,000 units during the period at Rs.36 per unit.

Required: Income statement based on absorption costing.

[5]

Ans.: Net income = Rs.65,000

8. 2066. Q. No. 9

A manufacturing company has reported its income statement under absorption costing technique as under:

Sales revenue (Rs.45 × 10,000 units)	4,50,000
Less: Cost of goods sold:	
Beginning inventory (2,000 × Rs.27)	54,000
Variable cost (9,000 × Rs.23)	2,07,000
Fixed cost (9,000 × Rs.4).....	36,000
Ending inventory (1,000 × Rs.27)	(27,000)
	2,70,000
Gross margin before adjustment	1,80,000
Less: Fixed cost under absorbed	4,000
	Gross margin
	1,76,000
Less: Other cost	50,000
	Net income before tax
	1,26,000

Required: Income statement under variable costing technique

[5]

Ans.: Net income = Rs.1,30,000

9. 2065. Q. No. 9

A company manufactures a single product. The normal level of operation is 40,000 units.

Data for the last financial year were as follows:

Production units	30,000	Sales units	35,000
Closing stock	Nil	Selling price per unit	Rs.25
Fixed manufacturing overhead	Rs.2,00,000		
Fixed selling overhead	Rs.1,05,000		

Variable cost per unit:

Direct material	Rs.5	Direct labor	Rs.4
Other direct expenses	Rs.2	Selling overhead 4% of selling price	

Required: Income statement under absorption costing.

[5]

Ans.: Net income = Rs.1,25,000

10. 2064. Q. No. 9

The estimated annual fixed costs for the capacity output of 20,000 units are as follows:

Factory overheads	Rs.1,00,000
Office overheads	Rs.50,000
Selling and distribution overheads	Rs.75,000

The estimated variable cost per unit:

Material cost	Rs.5
Labor cost	Rs.3
Factory overheads	Rs.2
Selling and distribution overheads	Rs.2

The selling price per unit fixed is Rs.25. The factory has beginning inventory of 5,000 units and finalized the production schedule for 25,000 units with a sales forecast of 28,000 units.

Required: Budgeted absorption costing income statement.

[5]

Ans.: Net income before tax = Rs.1,24,000

11. 2063. Q. No. 9

A mill has provided the cost for the annual normal capacity output of 50,000 kg.

Direct material cost per kg is Rs.10

Direct labour cost per kg is Rs.8.

- Manufacturing overheads per kg is Rs.10 (50% fixed)
 Selling and distribution overheads per kg is Rs.4 (25% variable)
 The selling price per kg is Rs.35.
 The annual fixed administrative expenses incurred Rs.1,00,000.
 The mill sold 50,000 kg in the last year.
 The store ledger recorded 10,000 kg of beginning inventory and 15,000 kg of ending inventory in the period.
 Required: Income statement based on variable costing.

[5]
 Ans.: Rs.50,000

12. 2062. Q. No. 15

The data relating to income statement of a company have been provided below:

Normal capacity volume	25,000 units
Actual production volume	28,000 units
Sales units	30,000 units
Ending inventory	3,000 units
Variable manufacturing cost per unit	Rs.20
Fixed manufacturing cost	Rs.1,00,000
Variable selling and distribution cost	Rs.2 per unit
Fixed selling and distribution cost	Rs.50,000
Selling price per unit	Rs.30

- Required: (i) Income statement under Absorption Costing.
 (ii) Reconciled profit under variable costing.

[5 + 2]
 Ans.: (i) Rs.82,000 (ii) Rs.90,000

13. 2061. Q. No. 15

Following information was supplied by a manufacturing concern for the year ended Chaitra 30, Year 8.

Normal production capacity.	25,000 units
Variable production cost per unit	Rs.7.00
Fixed production cost	Rs.62,500
Actual production and sales	21,000 units
Non- production fixed expenses	Rs.6,250
Variable selling and administrative expenses are Rs.0.25 per units sold	
Closing stock	2,500 units
Unit selling price	Rs.16

- Required: (i) Income Statement necessary for External Reporting
 (ii) Reconcile profit under Variable Costing.

[5 + 2]
 Ans.: (a) Rs.1,15,000 (b) 1,15,000

14. 2061. Q. No. 15, 2nd time

The absorption Costing Income Statement of a company has been provided as:

Production units	22,000
Sales unit	25,000
Sales revenue @ Rs.20	5,00,000
Less: Cost of goods sold:	
Variable manufacturing cost @ Rs.10	2,20,000
Fixed manufacturing overhead cost @ Rs.4	88,000
Total cost of products @ Rs.14	3,08,000
Add: Value of beginning inventory 5,000 units @ Rs.14	70,000
Less: Value of ending inventory 2,000 units @ Rs.14	(28,000)
Total cost of goods sold @ Rs.14	3,50,000
Gross margin before adjustment	1,50,000
Add: Manufacturing overhead over absorbed	8,000
Gross margin after adjustment	1,58,000

Less: Other cost: Variable selling and distribution cost @ Rs.3	75,000
Fixed selling and distribution cost	50,000
Total other cost	<u>1,25,000</u>
Net income Before Tax	33,000

Required: (a) Income statement under variable costing. (b) Reconciliation statement. [5 + 2]
 Ans.: (a) Rs.45,000 (b) 12,000

15. 2060. Q. No. 14, 1st time

The income statement of a company based on absorption costing is given below:

Particulars	Amount (Rs)
Sales revenue @ Rs.40 each	400,000
Less: Manufacturing cost:	
Direct material @ Rs.5 each	45,000
Direct labor @ Rs.10 each	90,000
Fixed manufacturing cost @ Rs.10 each	<u>90,000</u>
	2,25,000
Add: Opening Stock 2,000 units @ Rs.25 each	<u>50,000</u>
	2,75,000
Less: Closing Stock: 1000 unit @ Rs.25 each	<u>25,000</u>
Gross profit before adjustment	1,50,000
Less: Under absorption of fixed manufacturing cost	10,000
Gross profit after adjustment	1,40,000
Less: Non manufacturing cost:	
Fixed cost	60,000
Variable cost @ Rs.4	<u>40,000</u>
	1,00,000
Net Income	40,000

Required: (a) Income statement by using variable costing [4 + 3]
 (b) Reconciliation of difference in profit.
 Ans.: (a) Rs.50,000 (b) 10,000

16. 2060. Q. No. 13, 2nd time

The following statement of a company under variable costing technique is given below:

Particulars	Amount (Rs)
Sales revenue @ Rs.20 each	3,60,000
Less: Variable cost of production @ Rs.12 per unit	2,52,000
Add: Opening Stock	12,000
Less: Closing Stock	<u>(48,000)</u>
Contribution Margin	2,16,000
Less: Non Production constant cost:	
Fixed Factory overhead	50,000
Fixed selling and administration expenses	<u>10,000</u>
Net Income	60,000
	84,000

Consider normal capacity 20,000 units

Required: (a) Income statement for external reporting (Absorption) [4 + 3]
 (b) Reconciliation statement showing reasons for differences in profit.
 Ans.: (a) Rs.91,500 (b) 75,000

17. 2059. Q. No. 13

A company uses direct costing for internal control purposes and absorption costing for external reporting purposes. The following differences are located while comparing the two statements:

Items	Variable Costing (Rs.)	Absorption Costing (Rs.)
Variable manufacturing cost for 6000 units	60,000	60,000
Fixed manufacturing cost charged	25,000	30,000
Fixed selling and administrative Cost	40,000	40,000
Variable selling cost per unit	2	2
Selling price per unit	30	30

Management also projected the following data for the inventory:

Beginning inventory units	1000
Production units	6,000
Goods available	7,000
Sales units	5,000
Closing stock units	2,000

Cost of beginning inventory is the same as the cost of production in the period.

Required:

Income statement by using absorption costing and Variable costing approach. [3.5+3.5]
Ans.: AC: Rs.30,000; VC: Rs.25,000

18. 2058. Q. No. 12

A manufacturing company with normal capacity of 50,000 units supplied you with the following particulars for the year ending Chaitra 30.....

Production	55,000 units
Sales	60,000 units
Closing stock	5,000 units
Unit variable manufacturing cost	Rs.6
Unit fixed manufacturing overhead	Rs.3
Unit variable selling and administrative cost	Rs.2
Fixed selling and administrative cost	Rs.90,000
Unit selling price	Rs.15

Required: (a) Variable costing income statement. (b) Reconciled profit under absorption costing. (Do not waste your time in preparing absorption cost statement) [5 + 2]

Ans.: (a) Rs.1,80,000 (b) Rs.1,65,000

19. 2057. Q. No. 12

A manufacturing company with normal capacity of 20,000 units furnished you the following information:

Beginning inventory units	3,000	Units produced during the year	18,000
Units sold during the year	20,000	Unit selling price	Rs.12
Standard variable cost	Rs.6.50		
Fixed factory overhead at normal capacity			50,000
Fixed selling and distribution overhead			5,000

Required: (a) Income statement under absorption costing. (b) Reconciled profit under variable costing. (Do not waste your time in preparing variable cost statement) [5 + 2]

Ans.: (a) Rs.50,000 (b) Rs.55,000

20. 2056. Q. No. 12

A manufacturing company reporting income under absorption costing system furnished you with the following data:

Year	First	Second
Opening stock	1,500 units	1,000 units
Closing stock	1,000 units	2,000 units

Standard fixed manufacturing overhead rate is Rs.45 per unit.

The company converted its income statement under absorption costing into variable costing technique and found difference in net income reporting as under. The first year showed an excess profit of Rs.22,500 and a loss of Rs.45,000 in the second year.

Required: Reconciliation statement under variable costing system explaining the reasons for difference in net income reporting. [3.5 + 3.5]

21. 2055. Q. No. 13

The summarized data of a manufacturing concern for a capacity output of 50,000 units for a year is reported as:

<u>Items</u>	<u>Unit Cost</u>
Direct materials	Rs.14
Direct labor	Rs.6
Variable manufacturing overhead	Rs.4
Variable selling expenses	Rs.2
Sales price per unit	Rs.30
Fixed manufacturing overhead	Rs.75,000 annual
Fixed selling expenses	Rs.50,000 annual
Production	45,000 units
Sales	40,000 units

Required: (a) Absorption costing income statement. (b) Reconciled profit under variable costing. (Do not waste your time in preparing variable cost statement) [5 + 2]

Ans.: (a) Rs.42,500 (b) Rs.35,000

22. 2054. Q. No. 13

Prepare variable costing income statement by reporting standard and actual manufacturing cost of goods sold. On the basis of the following details and also show the reconciled profit under absorption costing: [4+3]

Normal capacity	2,00,000 units per year
Standard variable manufacturing expenses	Rs.20 per unit
Fixed manufacturing overhead	Rs.3,00,000
Variable selling expenses	Rs.2 per unit
Fixed selling expenses	Rs.1,00,000
Unit sale price	Rs.25

The operating result for the year ending Dec of the, last year were as follows;

Sales	1,50,000 units;	Production	1,80,000 units
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Ans.: Rs.50,000, Rs.95,000

23. 2054. Q. No. 13. Cancelled

The cost abstract of an undertaking was as follows:

Direct material cost per unit	Rs.12
Direct labor cost per unit	Rs.3
Variable manufacturing cost per unit	Rs.2
Variable selling and distribution expenses per unit	Rs.1

Budgeted normal output was 1,00,000 units with Rs.2,00,000 fixed manufacturing cost. The fixed selling and distribution expenses were Rs.50,000.

The operations of the year ended Dec. of the last year were:

Opening stock	10,000 units	Production	90,000 units
Sales	80,000 units	Sales price per unit	Rs.30

Required: (a) Income statement under absorption costing.

(b) Reconciled profit under variable costing. [6 + 2]

Ans.: (a) Rs.7,30,000 (b) Rs.7,10,000

Unit 12: Cost-Volume-Profit Analysis

1. 2072 Q. No 9

Following information of a company is provided:

Fixed cost	Rs.175,000
Selling price	Rs.60 per unit
Variable cost	Rs.25 per unit

Required: V/V ratio

[2]
Ans: 0.4167 or 41.67%

2. 2072 Q. No 9

The sales revenue and total cost of a industry during two years were as follows:

Year	Sales Revenue (Rs.)	Total Cost (Rs.)
2013	800,000	740,000
2014	1,000,000	920,000

Required: (i) Profit volume ratio (ii) Fixed cost (iii) Break-even point (Rs.) (iv) Sales to earn desired profit of Rs.45,000 after tax. The corporate tax rate is 25%. (v) Profit when sales are Rs.1,200,000. [2+2+2+2+2=10]

Ans: (i) 0.1 or 10% (ii) Rs.20,000 (iii) Rs.200,000 (iv) Rs.800,000 (v) Rs.100,000

3. 2072 Q.No.11 (Old)

XYZ Company sold 250,000 units of its product at Rs.20 per unit, variable manufacturing cost of Rs.10 per unit and selling cost Rs.6 per year. Fixed manufacturing cost and selling cost are Rs.600,000 and Rs.300,000 respectively.

Required: (1) BEP in units and sales Rs. (2) The number of units that must be sold to earn after tax profit of Rs.80,000; tax rate being 20% (3) What will be the effect on BEP if manufacturing cost (variable and fixed) increases by 10%. [2+3+3]

Ans: (1) 225,000 units (2) 250,000 units (3) 320,000 units; BE sales increase by 42.22% or 95,000 units

4. 2071 Q. No 11

Variable cost per unit	Rs.25
Selling price per unit	Rs.60
Fixed cost	Rs.175,000

Required: (1) Contribution margin ratio (2) Breakeven in unit (3) Margin of safety, if the sales volume is Rs.420,000 (4) In order to bring down the breakeven point to 4,000 units, what should be the selling price per unit. [2+2+2+2=8]

Ans: (1) 0.5833 (2) 5,000 units (3) Rs.120,000 (4) Rs.68.75

5. 2070 Q. No 11

A manufacturing company is considering to produce New Toy for Play Group. It has estimated that the each Toy would cost Rs.7 for material and Rs.5.50 for labour and mark-up would be 100% on these cost. The total fixed cost for the product would be Rs.125,000.

Required: (1) BEP value of the product (2) Sales unit to earn 20% profit on sales value (3) If the company desires an after net income from the product of Rs.42,000 with tax rate of 40%, how many units must be sold? (4) BEP units assuming variables costs increases by 20 percent. [2+2+2+2=8]

Ans: (1) Rs.250,000 (2) 16,667 units (3) 15,600 units (4) 12,500 units

6. 2069 Q. No 11

A Manufacturing Company produced & sold product Alpha for Rs. 720 per unit. The fixed costs of manufacturing and selling product Alpha are Rs. 74,880 and variable costs are Rs. 350 per unit.

Required: (1) BEP units if fixed cost increased by Rs. 11,232 (2) BEP in value if the variable cost decreased by Rs. 5 per unit (3) Sales volume (in units) required to earn after

tax profit of Rs. 25,200 if tax rate is 25% (4) The after tax income at the sales level of Rs. 260,000 if tax rate is 25%. [2+2+2+2]

Ans: 232.74 units; 0.521; Rs. 211,096.216; Rs. 44,048.33

7. 2068. Q. No 11

The annual fixed cost of a company Rs. 80,000. The selling price per units Rs. 10 and contribution margin is 40% of sales.

Required: (i) Contribution margin per unit (ii) Break even sales in units. (iii) Break even sales in value (Rs.) if fixed cost increased by 10% (iv) Required sales in value (Rs.) to earn after tax profit of Rs. 10,000, tax rate is assumed to be 50% [2+2+2+2=8]

Ans: (i) Rs. 4; (ii) 20,000 units (iii) Rs. 220,000 (iv) Rs. 250,000

8. 2067. Q. No. 11

The following information are given to you.

Sales revenue	Rs.100,00
Less variable cost	Rs.60,000
Contribution margin	40,000
Less fixed cost	30,000
Net income (profit)	10,000

Required: (1) P/V ratio (2) BEP in Rs. (3) Margin of safety (4) Required sales for after tax earning of Rs.25,000 if tax rate is 40% [8]

Ans.: (1) 0.4 (2) Rs.75,000 (3) Rs.25,000, (4) Rs.179,167.50

9. 2066. Q. No. 11

A Company provides the following trading results:

Year	Sales amount	Total costs (Rs.)
1.	Rs.2,00,000	1,60,000
2.	Rs.2,40,000	1,80,000

Required: (i) Profit volume ratio (ii) Annual fixed overhead (iii) Margin of safety for year 1 and 2 (iv) Sales to earn a profit of Rs.80,000. [8]

Ans.: (i) 0.5; Rs.60,000 (iii) 80,000 & 1,20,000; (iv) 2,80,000

10. 2065. Q. No. 11

The accounts of a company made available the following information:

Annual fixed cost is Rs.90,000.

Material cost per kg is Rs.3 & 7kg of input material is consumed by one unit of output.

Each unit needs four direct labor hours and wage per hour is Rs.4.

The variable overhead is 50% of direct labor cost.

The sales price per unit is Rs.60.

Required: (a) P/V ratio (b) BEP sales in rupees (c) Sales units to realize Rs.3 per unit profit. (d) Sales in Rs. to realize after tax profit of Rs.36,000 at a tax rate of 40%. [8]

Ans.: (a) 0.25 (b) Rs.3,60,000 (c) 7,500 units (d) Rs.6,00,000

11. 2064. Q. No. 10

A company sells its product at Rs.20 per unit in which it incurred variable cost of Rs.7.60 per unit. The annual fixed costs of company amounted to Rs.49,600.

Required: (i) Sales units to earn after tax profit of Rs.30,000 if tax rate is 45%.
 (ii) Compute BEP value assuming the fixed cost will increase by 20%
 (iii) Compute the contribution margin ratio assuming that variable cost is reduced to Rs.7.50 per unit.
 (iv) If the company can sell 5,200 units, what price would it have to charge to earn a profit of Rs.18,000? [2 × 4]

Ans.: 8,399 units (Approx); Rs.96,000; 0.625; Rs.20.60 per unit

12. 2063. Q. No. 12

A company sells its energy brass product to wholesale supermarkets for Rs.45 per piece in which it incurred Rs.20 as variable cost. The annual fixed costs of company amount to Rs.1,00,000.

Required: (a) Determine the BEP sales units (b) Determine the rupee sales volume required to earn profit of Rs.1,20,000. (c) Determine the sales volume in units to earn 20% return on sales. (d) If the company can sell 5,500 units of its product, what price would it have to charge to earn Rs.1,20,000 profit? [2×4]

Ans.: 4000 units; Rs.3,96,000; 6,250 units; Rs.60 i.e. SP↑ by Rs.15

13. 2062. Q. No. 13

The sales and cost data of a company are presented below:

Year	I.	II
Sales unit	20,000	40,000
Sales revenue	Rs.5,00,000	10,00,000
Less: Cost of sales	Rs.5,50,000	8,50,000
Operating profit	Rs.(50,000)	1,50,000

Required: (i) C/V ratio. (ii) FC for the year. (iii) BEP sales volume.

(iv) Sales volume to earn after tax profit of Rs.1,50,000. Tax rate 50% [2+2+2+2]

Ans.: 60%; Rs.2,50,000; Rs.6,25,000; Rs.13,75,000

14. 2061. Q. No. 13

The following details relate to a manufacturing firm:

Fixed overhead	Rs.3,00,000	Variable overhead	Rs.1,00,000
Direct material	Rs.4,00,000	Direct wages	Rs.3,00,000
Sales	Rs.12,00,000		

Required: (i) P.V. Ratio (ii) BEP in Rupee

(iii) Sales at a desire after tax profit of Rs.30,000 (Tax Rate 50%) [3 + 2 + 3]

Ans.: 1/3; Rs.9,00,000; Rs.10,80,000

15. 2061. Q. No. 12, 2nd

The income statement of a company has been given below:

Sales units	20,000
Sales revenue	Rs.6,00,000
Less: cost of goods sold:	
Variable manufacturing cost	3,00,000
Fixed manufacturing cost	2,00,000
Total cost of goods sold	5,00,000
Gross margin	1,00,000
Variable selling cost	1,00,000
Fixed selling cost	50,000
Total selling cost	1,50,000
Net Income Before Tax	(50,000)

Required: (i) Cost volume ratio. (ii) Breakeven sales volume in Rs. (iii) Sales volume to earn 20% on sales (units). (iv) Sales volume to earn Rs.1,00,000 after tax profit (Rs.) Tax rate 50% [2+2+2+2]

Ans.: 2/3; Rs.7,50,000; 62,500 units & Rs.13,50,000

16. 2060. Q. No. 13, 1st time

The cost accountant of X Co. Ltd. furnishes the following information:

Profit-volume ratio:	40%	Margin of safety ratio:	60%
Sales	Rs.5,00,000		

Required: (a) Margin of safety (b) Profit (c) Fixed cost [3 + 2 + 3]

Ans.: Rs.3,00,000; Rs.1,20,000; Rs.80,000

17. 2060. Q. No. 15, 2nd time

A firm purchased a certain item for Rs.80,000 and sold the same to a customer for Rs.1,00,000. Form charge a profit of 10% on sales value.

Required: (i) Fixed Cost, (ii) BEP in Rs. (iii) Required sales volume to earn after tax profit of Rs.18,000, if tax rate is 40%. [2 + 3 + 3]

Ans.: Rs.10,000; Rs.50,000; Rs.2,00,000

18. 2059. Q. No. 11

The following data of a company for a year are given:

Fixed Cost	Rs.2,00,000	Net Profit	Rs.40,000
Profit Volume Ratio	60%	Variable cost per unit	Rs.4

Required: (a) Amount of sales made during the year (b) Selling price per unit (c) Required sales for earning Rs.5,200 net profit. [3 + 2 + 3]

Ans.: Rs.4,00,000; Rs.10; Rs.3,42,000

19. 2058. Q. No. 7

The following are the information given by a trader:

Total Sales	Rs.3,60,000	Fixed Cost	Rs.1,00,000
Sales Unit	3,600 units	Variable cost per unit	Rs.60

Required: (a) P/V Ratio (b) BEP in Rs. (c) BEP in Units if selling price is reduced by 15%. [2+3+3]

Ans.: (a) 0.40 (b) Rs.2,50,000 (c) 4,000 units

20. 2057. Q. No. 8

The given information depict the operating result of a trading concern for the past two years.

Year	Sales	Net Profit/Net Loss (Rs.)
2054	Rs.5,00,000	Loss 15,000
2055	Rs.8,00,000	Profit 45,000

Required: (a) P/V Ratio (b) Amount of fixed expenses (c) Break even points in Rs. (d) Sales required earning a desired profit of Rs.75,000. [2 × 4]

Ans.: 0.20; Rs.1,15,000; Rs.5,75,000; Rs.9,50,000

21. 2056. Q. No. 8

The following information are given to you:

Fixed cost	Rs.90,000
Variable cost per unit	Rs.9
Selling price per unit	Rs.12

Required: (i) P/V Ratio (ii) BEP sales in unit and in Rs. (iii) Sales volume in Rs. to earn after tax profit of Rs.4,50,000 at a current tax rate 25%. [2 + 4 + 2]

Ans.: 0.25; 30,000 units Rs.3,60,000; Rs.27,60,000

22. 2055. Q. No. 9

The operating results of an industry of the last year are:

Particulars	First Half Year (Rs.)	Second half year (Rs.)
Sales	4,00,000	9,00,000
Profit	50,000	1,75,000

Required: (a) Contribution margin ratio. (b) Annual fixed cost (c) BEP sales volume for the year (d) Sales volume required to earn after tax profit of Rs.84,000 at 40% tax rate. [2 × 4]

Ans.: (a) 0.25 (b) Rs.100,000 (c) Rs.4,00,000 (d) Rs.9,60,000

23. 2054. Q. No. 14

A manufacturing company record has the following trading results for two periods

Period - I:	Sales Rs.5,00,000	Profit Rs.35,000
Period - II:	Sales Rs.8,00,000	Profit Rs.1,10,000

Required: (a) P/V Ratio (b) Variable cost for period I and II (c) BEP (d) Sales required to earn after tax profit of Rs.3,00,000 at 40% corporate tax. [2×4]

Ans.: 0.25; Rs.3,75,000/Rs. 6,00,000; Rs.3,60,000; Rs.23,60,000

24. 2054. Q. No. 14, Cancelled

The cost and sales figures available are:

Sales	Rs.10,00,000
Variable cost	Rs.6,00,000
Contribution	Rs.4,00,000
Fixed cost	Rs.2,50,000
Profit	Rs.1,50,000

Required: (a) BEP (b) P/V Ratio (c) Safety margin (d) Sales figure to earn after tax profit of Rs.2,40,000 at 40% corporate tax. [2×4]

Ans.: Rs.6,25,000; 0.4; Rs. 3,75,000; Rs.16,25,000

Additional Problems**Jumping fixed cost or Moving Fixed cost**

1. Following information are extracted from books of Rishab Co. Ltd.

Selling price = Rs.40

Variable cost = Rs.24

Fixed cost: Depreciation = Rs.160,000

Rent and rates = Rs.40,000

Repairs Rs.20,000 for every 10,000 units.

Supervision Rs.20,000 for every 20,000 units

Required: Ascertain BEP (in units)

[Ans: 16,250 units]

2. The contribution margin is 60% and the selling price per unit of product is Rs.50. The fixed cost for the year is Rs.60,000 for 1500 units. The firm have to spend Rs. 10,000 for additional product of 1000 units.

Required: (i) Calculate Breakeven point in units (ii) Required sales in units to earn Rs.50,000 profit

[Ans: (i) 2,333 units (ii) Rs.5,000]

Multi-product Firms

3. Find the overall breakeven point, BE Sales for each product and overall price ratio for the following three products of Pranav Company Ltd.

	Product A	Product B	Product C
Sales value mix ratio	20%	30%	50%
Variable cost to sales ratio	50%	30%	20%
Total fixed costs	Rs.71,000		

[Ans: Product A: Rs.20,000; Product B: Rs.30,000; Product C: Rs.50,000]

4. Arushi Co. Ltd. produces two products using the same raw materials and production facilities, provides you following information:

	Product A	Product B
Sales (in units).....	3,000	2,000
Selling price per unit	Rs.100	Rs.80
Materials @ Rs.2 per kg	20	10
Labour @ Rs.3 per hour	15	30
Variable Overheads @ Rs.4 per machine hour	40	16
	75	56

Total Fixed overheads = Rs.492,000

Required:

(i) BE Sales (in units/Rs.) for the company as a whole as well as each product

(ii) Overall sales (in units) to earn a desired after tax profit of Rs.500,000 tax rate 50%

[Ans: (i) Product A: 12,000 units; Product B: 8,000 units; Overall BE Sales Rs.1,840,000 (ii) Product A: 36,390 units; Product B: 24,260 units]

Unit 13: Standard Costing

Theoretical Questions

1. 2072 Q. No.15b

Differentiate between standard costing and budgetary control.

[2]

Numerical Problems

2. 2072 Q.No.10 (Old)

Standard and actual cost figures of an industry are stated below:

Standard Mix			Actual Mix		
Materials	Quantity (kg)	Rate (Rs.)	Materials	Quantity (kg)	Rate (Rs.)
X	12	10	X	660	9
Y	8	15	Y	300	16
Standard output 18 units			Actual output 900 units		

Required: Material yield, mix, usage, price and cost variance.

[5]

Ans: 480; 420; 900; 360 and 1,260 (F)

3. 2071 Q. No 10

The standard mix of a product X is as follows:

Raw material A, 40 units @ Rs.5 each

Raw material B, 60 units @ Rs.7 each

Standard loss is 10% of input. Actual mix is 34 units of A and 66 units of B. Actual prices are the same.

The actual output is 85 units

Required: Possible variances

[5]

Ans: MCV = Rs.46 (U); MPV = Nil; MUV = Rs.46 (U); MNMV = Rs.,12 (U); MYV = Rs.34 (U)

4. 2070 Q. No 11

The normal use in standard output and the actual consumption of a confectionary industry have been given below:

Standard				Actual			
Materials	Output	Rate	Cost	Materials	Output	Rate	Cost
Sugar	10 Kgs	Rs.40	Rs.400	Sugar	12 kgs	Rs.40	Rs.480
Flour	60 Kgs	Rs.20	Rs.1,200	Flour	70 kgs	Rs.20.5	Rs.1,435
Milk	30 Lts	Rs.20	Rs.600	Milk	18 Lts	Rs.19	Rs.342
	100		Rs.2,200		100		Rs.2,257
Less: Standard loss	20			Production 88 kgs of biscuits			
Output	80 kgs of biscuits						

Required: Direct materials, yield, mix, use price and cost variances

[1×5=5]

Ans: MYV = 220 (F); MMV = 40 (U); MUV = 180 (F); MPV = 17 (U); MCV = 163 (F)

5. 2069 Q. No 10

A chemical industry provided the following particulars:

Standard			Actual		
Material	Quantity	Price (Rs.)	Material	Quantity	Price (Rs.)
A	30%	10 per kg	A	125	20 per kg
B	70%	20 per kg	B	275	30 per kg

A standard loss of 5% was expected in production process.

Actual output was 370 kg.

Required: Material price, usage, mix and yield variances.

[5]

Ans: Rs. 4,000(U); Rs. 128.94(U); Rs. 50(U); Rs. 178.94(U)

6. 2068 Q. No 10

The standard cost of a chemical mixture is as follows:

40 kgs of material A at Rs. 20 per kg.
60 kgs of material B at Rs. 15 per kg.
Expected output in units is 90% of input.

The following actual cost data is given for a period

90 kgs of material A at Rs. 18 per kg
110 kgs of material B at Rs. 16 per kg
Actual output is 184 units.

Required: Material price, usage, mix and yield variance

[5]

Ans: 70(F); 25.55(F); 50 (U); 75.55 (U); 95.55 (F)

7. 2067. Q. No. 10

A manufacturing company has adopted standard costing system in its production cost control system. The following details of material standard and actual consumption have been provided.

Material	Standard		Actual	
	Qty in unit	Price/unit	Qty in unit	Price/unit
A	1	Rs.5	200	Rs.5.50
B	3	Rs.4	380	Rs.4
C	6	Rs.3	720	Rs.3.50
Standard loss 10%			Actual output 1170 units	

Required: Material mix, usage, price and cost variance

[5]

Ans.: Rs.130 (U); Rs.130 (U); Rs.460 (U); Rs.590 (U)

8. 2066. Q. No. 10

The standard materials cost to produce 138 units of a product is:

100 units of material x @ Rs.10
50 units of material y @ Rs.8

During a period, 144 units of product were produced from the usage of:

80 units of material x @ Rs.11
70 units of material y @ Rs.8

Required: (i) Material price variance (ii) Material mix variance
(iii) Material yield variance (iv) Material usage variance

[5]

Ans.: (i) Rs.80 (U); (ii) Rs.40 (F); (iii) Rs.61 (F); (iv) Rs.101 (F)

9. 2063. Q. No. 10

The detailed information regarding direct labor standard and use have been summarized below.

Standard				Actual			
Labourer	No.	Rate	Cost	Labourer	No.	Rate	Cost
Skilled	4	Rs.6	Rs.24	Skilled	5	Rs.6	Rs.30
Semi-skilled	7	Rs.4	Rs.28	Semi-skilled	5	Rs.5	Rs.25
Unskilled	9	Rs.2	Rs.18	Unskilled	10	Rs.1.80	Rs.18
	20		Rs.70		20		Rs.73
Standard output per gang hour will be 10 units				Actual output realized 430 units			
Labourers will be required to work for 40 hours in a week and they will be paid for those hours.							

Required: Direct Labor Efficiency (sub) (yield), mix, Efficiency (use) Rate and Cost variances.

[5]

Ans.: Rs.210 (F), Nil, Rs.210 (F), Rs.120 (U), Rs.90 (F)

10. 2062. Q. No. 10

A manufacturing company has adopted standard costing system in its production cost control system. The data relating to certain batches of output have been given below:

Standard:

- Material A 30% @ Rs.4 per kg
- Material B 20% @ Rs.6 per kg
- Material C 50% @ Rs.2 per kg
- Standard output 80kg of finished product.

Actual production realized 800 kg of finished product.

- Actual material used in production
- Material A 330 kg @ Rs.3.80
- Material B 180 kg @ Rs.6.50
- Material C 590 kg @ Rs.1.80

Required: Direct material yield, mix, use, price and cost variances.

Ans.: MYV = Rs.340 (U), MMV = Rs.160 (F), MUV = Rs.180 (U), MPV = Rs.94 (F), MCV = Rs.86 (U) [5]

11. 2061. Q. No. 9

Direct labor standard and other details have been provided below:

Standard				Actual			
Laborer	No.	Rate(Rs.)	Cost (Rs.)	Laborer	No.	Rate (Rs.)	Cost (Rs.)
Skilled	10	4	40	Skilled	10	4.25	42.50
Semi-skilled	20	2	40	Semi-skilled	25	1.80	45.00
Unskilled	30	1	30	Unskilled	25	1.20	30.00
Total	60		110	Total	60		117.50
Standard output per labor hour 0.5 units 40 hours in a week are paid				Actual output 1260 units 1 DLH was lost for no availability of materials			

Required: Direct Labor Efficiency Sub (yield), Mix, Idle Time, Rate & Cost variances.

Ans.: Rs.330(F); Rs.195 (U); Rs.135 (F); Rs.115 (U); Rs.100 (U), Rs.80 (U) [5]

12. 2061. Q. No. 9, 2nd

The standard labor cost and the actual labor cost incurred by a manufacturing company have been presented below:

Standard				Actual			
Labor	No.	Rate (Rs.)	Cost (Rs.)	Labor	No.	Rate (Rs.)	Cost (Rs.)
Skilled	4	6	24	Skilled	3	6.50	19.50
Semi-skilled	6	4	24	Semi-skilled	8	3.50	28
Unskilled	10	2	20	Unskilled	9	2	18
Total	20		68	Total	20		65.50
Standard output per gang hours 20 units 40 hours in a week required to work and paid				Output produced 780 units			

Required: Labor variances.

Ans.: Rs.68 (U); Nil; Rs.68 (U); Rs.100 (F); Rs.32 (F) [5]

13. 2060. Q. No. 16, 2nd

Direct material consumption details and standard have been presented below:

Standard				Actual			
Materials	Qty.	Rate (Rs.)	Cost (Rs.)	Materials	Qty.	Rate (Rs.)	Cost (Rs.)
A	30	5	150	A	25	6	150
B	30	3	90	B	35	2.80	98
C	40	2	80	C	40	2.10	84
	100		320		100		332
Less: Process Loss	20				12		
Out put	80				88		

Required: Direct material yield, mix usage, price and cost variances.

Ans.: Rs.32 (F), Rs.10 (F), Rs.42 (F); Rs.22 (F), Rs.20 (F) [5]

14. 2059. Q. No. 8

A company gives you the following standard and actual data:

Categories of Workers	Standard			Actual		
	No. of Workers	Rate per hour	Hours Worked	No. of workers	Rate per hour	Hours Worked
Grade A	50	Rs.10	100	30	Rs.15	120
Grade B	100	Rs.5	100	120	Rs.4	120

Required: (a) Labor mix variance (b) Labor efficiency Variance (sub) yield
(c) Rate variance.

[2+2+1]

Ans.: (a) Rs.12,000 (F); (b) Rs.20,000 (U); (c) Rs.3,600 (U)

15. 2058. Q. No. 9

The details regarding material are:

Standard Materials	Quantity in units	Price in Rs.	Cost in Rs.
A	30	3	90
B	30	2	60
C	40	1	40
Total	100		190
Standard loss	20%		
Material consumed		Actual output	720 units.
Materials	Quantity in units	Price in Rs.	Cost in Rs.
A	280	2.75	770
B	265	2.00	530
C	375	1.20	450
Total	920		1750

Required: Material yield, mix, usage and price Variance.

[1.25×4]

Ans.: Rs.38 (U), Rs.3 (F), Rs.35 (U), Rs.5 (U)

16. 2057. Q. No. 7

The following details of material standard and consumption have been provided:

Material	Standard			Actual		
	Qty. in unit	Price	Cost	Qty. in unit	Price	Cost
A	2	Rs.4.00	Rs.8.00	190	Rs.4.00	Rs.760.00
B	3	Rs.3.00	Rs.9.00	290	Rs.3.10	Rs.899.00
C	5	Rs.2.00	Rs.10.00	510	Rs.1.80	Rs.918.00
Total	10		Rs.27.00	990		Rs.2577.00

Standard output 8 units

Actual output 800 units

Required: Material yield, mix, use and price variances.

[1.25×4]

Ans.: Rs.27 (F), Rs.23 (F), Rs.50 (F), Rs.73 (F)

17. 2056. Q. No. 7

The details regarding labor cost have been provided as:

Type	Standard			Actual		
	Nos.	Rate /hr	Cost	Nos.	Rate/hr	Cost
Skilled	1	Rs.5.00	Rs.5.00	1	Rs.4.50	Rs.4.50
Semiskilled	3	Rs.3.00	Rs.9.00	4	Rs.3.00	Rs.12.00
Unskilled	6	Rs.2.00	Rs.12.00	5	Rs.2.20	Rs.11.00
Total	10		Rs.26.00	10		Rs.27.50

40 hours a week needed to work and paid.

Actual output produced 360 units. Standard output per gang hour is 8 units

Required: Labor efficiency sub (yield), mix, efficiency total and rate.

[2 + 2 + 1]

Ans.: Rs.130 (F); Rs.40 (U); Rs.90 (F); 20 (U)

2055. Q. No. 8

The standard cost for a product of the company shows the following material standard:

Materials	Quantity in kg	Standard price per kg in Rs.
A	4	5
B	1	10
C	5	20

The actual results for a period are:

Materials	Quantity in kg	Actual price per kg in (Rs.)
A	150	4
B	40	10
C	210	25

The standard loss is 10%. Actual output of the finished product is 380 kg

Required: (a) Material mixed variance (b) Material yield variance
(c) Material price variance

[2 + 2 + 1]

Ans.: Rs.150 (U); Rs.289 (F); Rs.900 (U)

2054. Q. No. 11. Cancelled

An article is produced by blending two raw materials:

Standard Raw materials	Composition	Rate
A	40%	Rs.5.
B.	60%	Rs.4

Standard loss in blending is 10%.

The company produces 1000 articles out of the following details during March.

Raw materials	Stock March 1 st	Stock March 31 st	Purchases during March	
	(Kg.)	(Kg.)	(Kg.)	(Rs.)
A	60	30	570	3,135
B	40	50	910	3,185

Required: (a) Material price variance (b) Materials usage variance
(c) Material mix variance (d) Material yield variance

[2×4]

Ans.: Rs.150 (F); Rs.1711.11 (U); NIL; Rs.1711.11 (U)

Overhead Variance

2070 Q. No. 12

The flexible budgeting data and other information are given below:

BA = Rs.200,000 + Rs.5 × DLH

Normal capacity	50,000 DLH
Standard time for one unit of output	is 2 DLH
Actual output	26,000 units
Actual hours worked	50,000 DLH
Actual overhead paid	Rs.455,000

Required: Overhead three variances

[5]

Ans.: CV = 8,000 (F); Efficiency variance = 10,000 (F); Spending variance = 5,000 (U)

2065 Q. No. 10

Following information is provided by a manufacturing company.

Budgeted Standard Data:

Budgeted activity level	10,000 DLHs
Standard LHs allowed	2 hrs per unit
Budgeted OH cost:	
	Variable Rs.2.6 per unit
	Fixed Rs.1.4 per unit
	Total Rs.4.0 per unit

Hourly Overhead application rate:	Variable	Rs.1.3
	<u>Fixed</u>	<u>Rs.0.7</u>
	Total	<u>Rs.2.00</u>
Budgeted Overhead cost:	Fixed	Rs.7,000
	<u>Variable</u>	<u>Rs.13,000</u>
	Total	<u>Rs.20,000</u>
Actual data:		
Overhead cost incurred:	Fixed	Rs.7,500
	<u>Variable</u>	<u>Rs.14,500</u>
	Total	<u>Rs.22,000</u>
Actual LHs used:		11,800 hours
Actual production volume		5,500 units

Required: Overhead three variance

Ans.: CV Rs.700 (F); EV Rs.1,040 (U); SV Rs.3,400

3. 2064. Q. No. 13

The flexible budgeting formula at a normal capacity volume of 10,000 machine hours is:

$$BA = Rs.50,000 + Rs.2 \times MH$$

One unit of output will need 0.5 MH

In the year a company produced 23,000 units of output, by working for 11,000 machine hours. The total overheads amounted to Rs.74,200.

Required: (i) Fixed manufacturing overhead cost capacity variance.

(ii) Variable manufacturing overheads efficiency and spending variance.

Ans.: CV = Rs.7,500 (F); EV = Rs.1,000 (F) & SV = Rs.2,200

4. 2060. Q. No. 11, 1st

Calculate three overhead variances from the data given below:

(a) Budgeted allowance = Rs.1,00,000 + Rs.3 times labor hour.

(b) Normal capacity 20,000 direct labor hour.

(c) Standard time allowed is 2 units per labor hour.

(d) Actual output recorded 45,000 units

(e) Actual labor paid 23,000 hours.

(f) Actual overhead incurred Rs.1,66,000.

Ans.: CV: Rs.12,500 (F); EV: Rs.1,500 (U); SV: Rs.3,000

5. 2058. Q.N. 8

The details regarding manufacturing overhead cost and other relevant information has been provided below:

<u>Activity Level</u>	<u>50,000 DLH</u>	<u>1,00,000 DLH</u>
Manufacturing Cost (Rs.)	3,00,000	4,00,000
Other Information:		
Normal Capacity		1,00,000 DLH
Actual DLH (standard) produced		1,02,000 DLH
Actual labor worked and paid		98,000 DLH
Actual overhead paid		Rs.4,20,500

Required: (a) Amount of fixed manufacturing cost

(b) Three overhead variances.

Ans.: Rs.2,00,000; CV: Rs.4,000 (F); EV: Rs.8,000 (F); SV: Rs.24,500

6. 2057. Q. No. 9

The flexible budgeting data and other information have been presented below:

$$BA = Rs.4,00,000 + Rs.5 \times DLH$$

Normal capacity

1,00,000 DLH

Standard time per unit of output

2 DLH

Actual output	52,000 units
Actual hours worked	98,000 DLH
Actual overhead paid	Rs.8,65,500

Required: Overhead three variance.

[2+1.5+1.5]

Ans.: CV: Rs.16,000 (F); EV: Rs.30,000 (F)SV: Rs.24,500 (F)

7. 2054. Q. No. 11

The compiled records of a company are as follows:

Particulars	Budgeted	Actual
Output (in units)	10,000	12,000
Hours	5,000	5,500
Fixed overhead cost (Rs.)	5,000	5,000
Variable overhead cost (Rs.)	20,000	27,500

Required: Three overhead variances.

[2+2+2]

Ans.: SV: Rs.5,500 (U), EV: Rs.2,000 (F), CV: Rs.1,000 (F)

Unit 14: Budgeting for Planning

Numerical Problems

1. 2072 Q. No. 15a

The following information is provided to you for the product of "AB":

Estimate sales 100,000 units

Closing stock 10% of sales

Opening stock 12,000 units

For making product "AB" two types of materials are used – material X and material Y.

Other details are as follows:

- 3 units of materials X and 4 units of material Y are required to produce one unit of product "AB".
- Closing stock of two types of material are 20% of material required for production.
- The opening stock of material X was 60,000 units and material Y was 80,000 units
- The purchase price of materials is Rs.20 and Rs.15 per unit for material X and material Y respectively.

Required: Production Budget and material purchase budget

[2+30=5]

Ans.: (i) 98,000 (ii) Material X = Rs.5,856,000; Material Y = Rs.5,856,000

2. 2071 Q. No. 15

ABC Company Limited provides the following information for preparing different budgets for three months Baisakh, Jestha and Asadh.

Months	Falgun	Chaitra	Baishak	Jestha	Ashad	Shrawan	Bhadra
Sales unit	10,000	20,000	20,000	25,000	30,000	40,000	50,000

Selling price per unit is Rs.20. Each unit of finished product will need 2 units of raw material at a cost of Rs.2 per unit and 2 direct labour hours @ Rs.3 per hour. Fixed selling and distribution cost Rs.120,000 per year and variable selling costs will be 5% of sales. The company has a policy to keep equal number of units of inventory of raw material and finished goods to meet the next month's production and sales need.

Required: (1) Production budget for 3 months ending Ashad (2) Labour cost budget for 3 months ending Ashad (3) Labour cost budget for 3 months ending Ashad (4) Distribution overhead budget for 3 months ending Ashad.

Ans.: (1) 25,000 units; 30,000 units; 40,000 units (2) Rs.120,000 (3) Rs.150,000; Rs.180,000; Rs.240,000 (4) Rs.30,000

3. 2070 Q. No. 16 OR

The sales budget, production budget and other related information of M/s Yantrasala have been provided below:

Schedule I Sales budget

Particulars/Months	Nov	Dec	Jan	Feb	Mar
Sales unit	20,000	20,000	30,000	35,000	40,000
Sales revenue (Rs.)	400,000	400,000	600,000	700,000	800,000

Schedule II Production budget

Particulars/Months	Jan	Feb	Mar	April
Production unit	35,000	40,000	40,000	35,000

Each unit of output will need 2 units of materials and material per unit will cost Rs.2. Indirect material and indirect labour per unit will be Rs.2 and Re.1 respectively. Besides, indirect materials and indirect labour the other manufacturing cost will be as under:

Supervision cost	Rs.12,000 per month
Repairs and maintenance	Rs.10,000 per month
Depreciations	Rs.3,000 per month
Rent and others	Rs.12,000 per month

Administrative, selling and distribution overhead will be 10% of goods sales. The company will be having inventory of raw materials and finished goods sufficient to meet the next months production need and sales need respectively. The inventory of different items on January 1st this year have been presented as under:

Raw materials	70,000 units
Finished goods	30,000 units

Required: (1) Material purchase budget for 1st quarter (2) Manufacturing overhead budget for 1st quarter [4+3]

Ans.: (1) Rs.160,000; Rs.160,000; Rs.140,000 (2) Rs.142,000; Rs.157,000; Rs.157,000.

4. 2067 Q. No. 8

The Operating Budgets and the other information necessary for budgetary control system of a Trading Concern have been presented below:

Past sales and Merchandise sales Budget

Months	Falgun	Chaitra	Baishak	Jestha	Ashad'
Sales (Rs.)	40,000	600,000	500,000	600,000	800,000

The closing balances of Chaitra last year were:

Accounts payable	Rs.300,000
Merchandise inventory	Rs.300,000

Accounts receivable Rs.304,000 (which includes Rs.240,000 of Chaitra's sales and Rs.64,000 of Falgun's sales) and cash balance of Rs.20,000. 20% of sales is in cash and 80% on credit, credit sales will realised 50% in the months of Sales, 30% in next month of sales and 20% in the following next month's sales. The company purchases sufficient level of merchandise to cover the next month's sales, which is equivalent to 60% of sales. The purchase of merchandise will be paid in next month of purchase. Administration, distribution and selling expenses will be 20% of sales value and they will be payable in the month when due.

The company will maintain minimum cash balance of Rs.20,000. The company will buy a machine for Rs.150,000 on Baishakh and pay dividends of Rs.50,000 in the month of Jestha. The company has entered into agreement with Nepal Bank Ltd. for a soft loan to meet cash deficiency. The borrowing will be in multiple of 5,000 and re-payable in multiple of Rs.1,000. The bank will charge 12% per annum as interest on the amount of loan due.

Required: (1) Purchase of merchandise budget for three months ending Ashad (2) Administration, distribution and selling expenses budget for three months ending Ashad

Ans.: (a) Rs.3,60,000; Rs.4,80,00; 4,80,000; (b) Rs.1,00,000; Rs.1,20,000; Rs.1,60,000

5. 2066. Q. No. 8 OR.

The sales forecasts relating to a manufacturing company are summarized below:

Month	Baishakh	Jestha	Ashadh	Shrawan	Bhadra
Sales (in units)	30,000	30,000	40,000	40,000	30,000

Each unit of the product requires 3 units of raw materials and each unit of raw material will cost Rs.2 per unit. The company's policy is to keep enough ending inventory of raw materials and the finished product to meet productions and sales need of the next month. The beginning stock of raw materials and finished product were 90,000 units and 30,000 units respectively.

- Required: (i) Production Budget for first three month
 (ii) Material purchase budget for first three months. [4+4]
 Ans.: (i) 30,000; 40,000; 40,000 units (ii) Rs.2,40,000; Rs.2,40,000; Rs.1,80,000

6. 2064. Q. No. 16

The sales budget and other pertinent information necessary for a budgetary control system of M/S Machine Ltd. have been presented below Budget for Planning.

Particulars / Months	Sales budget					
	Poush	Magh	Falgun	Chaitra	Baishakh	Jestha
Sales unit	10,000	20,000	25,000	30,000	20,000	20,000
Sales revenue (Rs.)	2,00,000	4,00,000	5,00,000	6,00,000	4,00,000	4,00,000

50% sales will be in cash and 50% on credit. 60% of the credit sales will be realized in the month of sales and balance in the following month of sales. Every unit of finished product will need 3 units of raw materials and each unit of material will cost Rs.2. Direct labor cost per unit will be Rs.4 and manufacturing cost including depreciation cost of the machine Rs.10,000 will be Rs.80,000 per month. The selling and distributing cost will be 10% of the gross sales value. The raw material inventory each month will be sufficient to meet the next months production need. Finished goods inventory will be 50% of the sales need for the next month. A minimum cash balance of Rs.20,000 will be maintained each month. The balances of different items on 29th Poush have been summarized below:

Cash at bank Rs.20,000; Raw materials inventory 67,500 units; Finished goods inventory 10,000 units

All other expenses and purchases will be paid in the month of expenditure and purchases. The company will realize debenture worth Rs.1,00,000 at a premium of 10% & pay an interim dividend of Rs.50,000 on Poush. Interest on investment of Rs.50,000 will be received in the month of Magh. A line of credit will be available at 12% p.a. from the commercial banks to meet the temporary deficit of cash. However, the borrowing will be in Rs.10,000 and repayment in Rs.5,000.

- Required: (i) Production budget for three months ending Chaitra.
 (ii) Materials purchase budget for three month ending Chaitra.
 Ans.: (i) Units: 22500; 27500; 25000; (ii) Rs.: 165000; 150000; 120000;

7. 2063. Q. No. 16, OR.

A trading company provided the following budget and other relevant information for the 4th quarter of the year under review:

Particulars / Months	Sales Budget				
	September	October	November	December	January
Sales budget (Rs.)	5,00,000	5,50,000	6,00,000	5,00,000	4,00,000

Sales will be 50% in cash and 50% on credit. 50% of credit sales will be realized in the month of sales and balance in the following month. The gross profit margin on sales will be 40%. Merchandise purchase for sales and other expenses will be paid in the month of purchases and the expenses will be due respectively. Administrative cost will be Rs.30,000 for salary, Rs.20,000 for rent and Rs.20,000 for miscellaneous expenses including

Rs.5,000 for depreciation of office equipment. Selling and distribution cost will be 20% of the sales revenue. The company wishes to keep sufficient inventory of merchandize necessary to meet next month's sales need and a minimum cash balance of Rs.20,000. On 30th September the merchandize inventory worth of Rs.330,000 and a cash balance of Rs.20,000 were worth the company.

The company will retire debenture worth of Rs.1,00,000 at a premium of 20% in October; Soft loans at an annual interest of 12% will be available from the commercial banks to overcome cash deficiencies. The borrowing will be in a multiple of Rs.10,000 and repayment in Rs.5,000.

- Required:** (a) Merchandize purchase budget for last quarter
(b) Administrative selling and distribution cost budget for last quarter

Ans.:(a) Rs.360000; Rs.300000; Rs.240000; (b) 180000; Rs.190000; 170000

8. 2062. Q. No. 16, OR.

M/s Link Ltd., is a trading company which purchase and sales merchandise manufactured by other company. The company has adopted a budgetary system in the planning system. The data relating to the last quarter of the year have been presented below.

Sales and sales forecast						
Months	August	September	October	November	December	Jan 2004
Sales in Rs.	4,00,000	5,00,00	5,00,00	6,00,000	8,00,000	7,00,000

All sales will be on credit. Credit will realize 50% in the month of sales 30% in the next month of the sales and remaining 20% in the next following month of sales. The gross profit margin on sales will be 40%.

The purchases of merchandise and all other related expenses will be made in the month of purchase and the expenses became due. The administrative and distribution expenses excluding the depreciation on office equipment of Rs.5,000 per month will be 20% of the sales revenue. Company will retire debentures debts of Rs.2,00,000 at a premium of 10% in the month of October and buy a new computer for Rs.50,000.

As a policy company will maintain Rs.25,000 as cash balance and merchandise inventory necessary to meet next months sales.

A line of credit at an interest rate of 12% p.a. will be available from a Commercial Bank. The borrowing will be in a multiple of 5,000 and repayments in Rs.1,000 plus the interest on the amount of principal repaid.

- Required:** (i) Merchandise purchase budget for last quarter.
(ii) Administration and distribution cost budget for the last quarter.

Ans.: (i) Rs.: 3,60,000; 4,80,000; 4,20,000 (ii) Rs.: 1,05,000; 1,25,000; 1,65,000

9. 2061. Q. No. 16, OR

Kathmandu Trading Company, a company engaged in trading has presented the following information and the sales budgets:

Particulars / Months	Nov.	Dec.	Jan.	Feb.	March	April
Sales Budget	5,00,000	6,00,000	8,00,000	7,00,000	6,00,000	6,00,000

25% of sales will be in cash and balance on credit. Credit will be realized 50% in the month of sales, 25% in the following month of sales and 25% in the next following month of sales. The gross profit margin in sales will be 40%. The purchases and other cash expenses will be paid in the month of purchases and when they will be due. Administrative and selling expenses will be 10% of sales revenue excluding depreciation, which will be Rs.10,000 per month.

The merchandise inventory will be equal to what the company will need for next month sales. The beginning inventory in the month of January was of Rs.4,80,000. A minimum cash balance of Rs.20,000 will be maintained. The company will discharge the debenture

of Rs.100,000 in the month of January at a premium of 10%. A machine of Rs.2,50,000 will be purchased in the same month.

The company has a line of credit agreement with Kumari Bank Ltd. to meet cash deficiency. The borrowing will be in a multiple of Rs.10,000 and repayments will be in Rs.1,000. The bank will charge 12% p.a. as interest on balance of loan-remained unpaid.

Required: (i) Merchandise purchase budget
(ii) Administrative and selling expenses budget.

Ans.: (i) Jan. 420000; Feb. 360000; March 360000; (ii) Jan. 90000; Feb. 80000; March 70000;

2061. Q. No. 16, 2nd

M/S Blow Plast Ltd., is a toy manufacturing company. The company has followed budgetary discipline and prepares various budgets. It has provided the following budgets for reference for the first four months.

Schedule I		Sales Budget			
Particulars/Months	December	January	February	March	
Sales unit	3,000	4,000	5,000	5,000	
Sales revenue (Rs.)	3,00,000	4,00,000	5,00,000	5,00,000	
Schedule II		Production Budget			
Particulars / Months	January	February	March	April	
Production unit	5,000	5,000	4,500	4,000	

Other information:

Sales will be 30% in cash and 70% on credit, 50% credit sales will be realized in the month of sales and balance in the next month of sales. Raw materials purchases, labor cost and other expenses will be paid in the month of expenditure due and purchases. Each unit of finished toy will need 0.5 kg of plastic at Rs.40 per kg. One unit of toy will need 3 DLH and one direct labor hour will cost Rs.10. The manufacturing overhead cost excluding the depreciation cost of Rs.10,000 will be Rs.10 and selling and distribution cost will be 15% of the sales revenue. The company has a plan to buy a new blowing machine at a cost of Rs.400,000 and it will issue additional 2,000 share of Rs.100 each at a premium of 10% in the month of March.

The company keeps the sufficient inventory of raw material that will be needed to meet the production need of the next month and have Rs.20,000 as balance of cash at bank.

The balance on January were:

Raw materials 2,500 kg.	Rs.1,00,000
Cash at bank	Rs.20,000

The company has entered into agreement with a commercial bank for short-term loan. The borrowing will be in a multiple of Rs.10,000 and payments will in Rs.1,000. The bank will charge interest of 10% p.a. on the balance due.

Required: (i) Material purchase budget.
(ii) Direct labor cost budget.

Ans.: (i) Rs.: Jan.100000; Feb. 90000; March 80000; (ii) Jan.150000; Feb.150000; March 135000;

11. 2060. Q. No. 16, 1st

A company produces a single product. The sales forecasts of the product for different months are as follows:

Months	Baishakh	Jestha	Ashadh	Shrawan	Bhadra
Sales in units	2,000	3,000	3,000	2,000	4,000

It is planned that closing stock at the end of each month should be maintained at a level equal to half the expected sales for the next month, and raw material stock also should be equal to half of the expected consumption for the next month. Each unit of product requires

2 units of raw materials, which costs Rs.5 each. Estimated beginning inventories for the month Baishakh are as follows:

Finished goods	1,000 units	Raw material	2,500 units
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The other information is as follows:

- The selling price per unit is Rs.20. 50% of sales are in cash and remaining on credit. Out of the credit sales, 60% is collected in the month of sale and remaining in the following month. The gross sale of Chaitra last year was of Rs.50,000.
- 80% of purchases are for cash and remaining are paid after one month. The purchases for Chaitra were Rs.30,000.
- The wages and other manufacturing costs are Rs.8 per unit and that are paid for at the time when they are due.
- The ending balance of cash on last Chaitra was Rs.25,000.
- A sum of Rs.8,000 will be received in Baishakh as proceeds on sale of old furniture.
- The administrative and selling costs are Rs.10,000 for Baishakh and Rs.15,000 each for Jestha and Ashadh. These are paid in the following month. The outstanding administrative and selling cost for last Chaitra were also of Rs.10,000

Required: (a) Production Budget for 1st three month.

(b) Material consumption budget for 1st three month.

(c) Material purchase budget for 1st three months.

Ans.: (a) units: 2500; 3000; 2500; (b) units: 5000; 6000; 5000; (c) Rs.: 27 500; 27500; 27500;

12. 2060. Q. No. 16, 2nd

The Nepal Liver Ltd. has collected the following information.

Sales Particulars/Months	budget I					
	Dec.	Jan.	Feb	March	April	May
Sales in units	10,000	16,000	20,000	24,000	30,000	20,000
Sales revenue (in Rs.)	4,00,000	6,40,000	8,00,000	9,60,000	12,00,000	8,00,000

Other budgets:

Particulars /months	Jan	Feb	March
Direct labor cost budget (Rs.)	2,00,000	2,40,000	3,00,000
Manufacturing overhead cost budget (Including depreciation Rs.10,000)	1,70,000	2,02,000	2,50,000
Process and distribution budget	64,000	80,000	96,000

Sales will be 50% in cash and 50% on credit. 50% of credit sales will be realized in the month of sales and 50% in the next month. Each unit of output will required 4 units of direct material and direct material will cost Rs.2.50 per unit. The ending inventory of finished goods and raw material will be sufficient inventory to meet sales need and production need respectively.

The beginning inventory was:

Finished Goods 16,000 units; Raw Materials 60,000 units; Cash Rs.20,000
Purchases and other cost dues will be paid in the month of purchases and due. The company will purchase a machine at a cost of Rs.200,000 and pay a dividend of Rs.50,000 in the month of January. The company has intended into an agreement with a commercial bank for temporary credit at an interest rate of 12% p.a. the borrowing will be in a multiple of Rs.5000 and repayment will be Rs.1,000 plus the interest for the amount of loan repaid.

Required: (a) Production budget (b) Material purchase budget

Ans.: (a) units: 20,000; 24,000; 30,000 (b) Rs.: 2,90,000; 3,00,000; 2,00,000

13. 2059. Q. No. 16

Projected sale figures of a company are stated below.

Months	Baishakh	Jestha	Ashadh	Shrawan	Bhadra
Sales in units	15,000	30,000	50,000	40,000	60,000

	Per unit
Sales price	Rs.10
Labor cost	Rs.2
Manufacturing overhead	Rs.1.50
Selling and distribution expenses	Rs.0.50
Inventory policy: Finished goods	25% on next month's sale
Raw material	50% of next month's requirement
Consumption of raw material per unit is	2 kg
Cost of raw material per kg is	Rs.1.50

60% is cash sales and rest are credit sales. 50% of credit sales are collected in the same month and rest in the next month. Uncollected debtor of Chaitra of last year is Rs.90,000. Purchases and other expenses are paid in the relevant month.

The cash balance of Chaitra last year was Rs.26,000. The company can borrow necessary fund from bank to meet the minimum cash balance of Rs.25,000 throughout the period and the cash in excess of Rs.30,000 should be deposited into bank.

Required: For the first 3 months:

- (a) Production budget (b) Material consumption budget
(c) Material purchase budget.

[15]

Ans.: (a) units: 18,750; 35,000; 47,500; (b) Rs.: 37,500; 70,000; 95,000;

(c) Rs.: 80,625; 1,23,750; 1,38,750;

14. 2058. Q. No. 16

The sales budget and manufacturing overhead budget of a manufacturing company are presented below:

Schedule I		Sales budget					
Months	Falgun	Chaitra	Baishakh	Jestha	Ashadh	Shrawan	Bhadra
Sales in units	10,000	20,000	20,000	25,000	30,000	20,000	10,000
Sales revenue	2,00,000	4,00,000	4,00,000	5,00,000	6,00,000	4,00,000	2,00,000

Schedule II		Manufacturing overhead budget:		
Particulars /months	Baishakh (Rs.)	Jestha (Rs.)	Ashadh (Rs.)	
Indirect labor	25,000	30,000	20,000	
Indirect material	50,000	60,000	40,000	
Supervision	20,000	20,000	20,000	
Depreciation	20,000	20,000	20,000	

Each unit of finished product will need 2 units of materials at the rate of Rs.2 per unit and one direct labor hour at the rate of Rs.6 per hour. Selling and other expenses will be 5% of sales revenues. The company has a policy to keep equal inventory of raw material and finished product to meet the next month's production and sales needs respectively. A deserved minimum balance of cash will be Rs.25,000.

The balance of beginning of Baishakh was: Cash Rs.25,000, raw material 50,000 units, and finished product 20,000 units.

All sales are credit sales and credit sales will realize 60% in the month of sales, 30% in the next month and balance in the next following month.

All purchase are cash purchases and expenses are paid when they are due.

The company intends to purchase machine at a cost of Rs.150,000 in the month of Baishakh.

The company has entered in to an agreement for a line of credit to meet deficiency of cash in any month. The borrowing in a multiple of Rs.5,000 and repayment in a multiple of Rs.2,000 with 12% p.a. interest.

- Required: (a) Production budget for the months ending Ashadh
(b) Material purchased budget for the three month

Ans.: (a) units: 25000; 30000; 20000; (b) Rs.: 120000; 80000; 40000;

15. 2057. Q. No. 16

In its process of preparing budget a company prepared the following budgets:

Schedule I Months—	Past sales and Sales budget				
	Chaitra	Baisakh	Jestha	Ashadh	Shrawan
Sales revenue	4,00,000	6,00,000	7,00,000	4,00,000	3,00,000

20% of sales will be in cash and remaining 80% will be in credit. 80% of credit sales will be collected in the month of sales and remaining in the next month of sales. The gross profit margin on sales will be 40%. The desired ending inventory of merchandise will be equal to meet next month's sales need and a minimum cash balance of Rs.20,000. The operating expense, selling and distribution expenses will be 20% of sales revenue, the purchase of the month will be paid in the month of the purchase and the expenses.

The company intends to purchase a vehicle at as cost of Rs.1,20,000 in the month of Baishakh.

The company has approached a commercial bank for a line of credit to meet temporary deficiency of cash. The borrowing will be in a multiple of Rs.5,000 and repayments in Rs.1,000 together with interest of 18% p.a.

The minimum cash balance at the end of Chaitra was Rs.20,000. Beginning inventory of merchandise was Rs.3,60,000.

- Required: (a) Merchandise purchase for the three months ending Ashadh.
(b) Operation, selling and distribution budget for the three months

Ans.: (a) Rs.: 420000; 240000; 180000; (b) Rs.: 120000; 140000; 80000;

16. 2056. Q. No. 16

The past sales, forecasted sales and manufacturing overhead budget are presented below:

Schedule I Months	Past and forecasted sales						
	Falgun	Chaitra	Baishakh	Jestha	Ashadh	Shrawan	Bhadra
Sales in units	20,000	30,000	40,000	40,000	30,000	20,000	30,000

Schedule II Manufacturing overhead budget:			
Months	Baishakh (Rs.)	Jestha (Rs.)	Ashadh (Rs.)
Indirect labor	80,000	60,000	40,000
Heat, light and power	20,000	20,000	20,000
Supervision	10,000	10,000	10,000
Depreciation	10,000	10,000	10,000
Total	120,000	100,000	80,000

Selling price per unit will be Rs.20 each. All sales are credit sales, and sales will be realized 60% in the month, 30% in the next month and the balance in the next following month of sales. Purchases and all other expenses will be paid in the month of purchases and the expenses.

Each unit of finished product will need one unit of raw materials at a cost of Rs.4 and two direct labor hours @ Rs.2.50 per hour.

The ending balance of raw material and the finished product will be equal units of raw material and finished products necessary to meet productions and sales need of the next month respectively and the desired ending balance of cash of Rs.20,000.

The beginning balance of raw material and finished product were 40,000 units each and the cash balance of Rs.20,000

Required: (a) Production budget (b) Material purchase budget

Ans.: (a) units: 40,000; 30,000; 20,000; (b) Rs.:1,20,000; 80,000; 1,20,000;

17. 2055. Q. No. 16

The sales and production budget of a company is given below:

Months	Magh	Falgun	Chaitra
Sales units	4,000	5,000	6,000
Sales revenue	Rs.2,00,000	Rs.2,50,000	Rs.3,00,000
Production units	5,000	6,000	4,000

Each unit of the product requires 3 units of material A and 4 units of material B costing Rs.2 and Rs.5 per unit respectively. The company's policy is to have enough ending inventory of raw material to fill 50% of requirement for the following month. Estimated opening and closing stock of raw materials are:

Raw materials	1st Magh	31st Chaitra
A (units)	9,000	9,000
B (units)	12,000	12,000

50% of total sales are for cash and the remaining 50% will be collected equally during the following two months. The receivable as of Poush last includes Rs.50,000 of Margā sale and Rs.80,000 of Poush sales. All purchases are cash purchases. The expenses of the company are as follows:

Wages	Rs.10 per unit
Variable manufacturing cost	Rs.5 per unit
Fixed cost	Rs.10,000 per month

Additional information:

- 50% of the wages is payable in the same month and 50% on the following month. The wages outstanding for Poush was Rs.20,000.
- Variable manufacturing cost and fixed costs are to be paid during the month in which they are incurred.
- In the month to Magh, cash to be collected from share capital is Rs.150,000.
- Opening balance of cash on 1st Magh Rs.1,00,000

Required: (a) Material consumption budget (b) Material purchases budget [2+6]

Ans.: (a) A:units: 15,000; 18,000; 12,000; B: units: 20,000; 24,000; 16,000;
 (b) Rs.: 1,30,000; 1,30,000; 1,30,000

18. 2054. Q. No. 16. Cancelled

The sales forecasts relating to a manufacturing company are summarized below:

	Shrawan	Bhadra	Ashwin	Kartik
Sales (in units)	20,000	30,000	40,000	30,000

Selling price per unit is Rs.20. Each unit of output need 2 units of raw material and each unit of raw material will cost Rs.2. Labor cost and factory overhead are Rs.6 per unit. Process and distribution expenses are 20% of sales.

The company's policy is to keep equal unit of output required for the next month's sales and uniform materials inventory of 30,000 units.

80% of sales are in credit and rest in cash. 50% of credit sales are collected in the same month and rest in the next month. Purchases and expenses are paid in the month when they become due.

The company holds minimum cash balance of Rs.20,000. The company has negotiation with his bank for temporary borrowing in the multiple of Rs.1,000. With interest of 12% p.a. on the loan paid. Assume that the loans are taken on the first date of the month and repaid on the last date.

Uncollected debtors of Ashadh were Rs.100,000. Opening finished goods inventory and cash balance were 20,000 units and Rs.20,000 respectively.

- Required: (a) Production budget for the first three months.
(b) Materials purchase budget for the first three months.

Ans.: (a) units: 30,000; 40,000; 30,000; (b) Rs.: 1,20,000; 1,60,000; 1,20,000;

Unit 15: Flexible Budget

Numerical Problems

1. 2072 Q.No.9 (Old)

The following information are provided:

Units	Mixed cost (Rs.)
100	600
200	700
300	800
400	900
500	1,000

Required: (1) Variable cost per unit (2) Budget for 1,200 units

[3+3]

Ans: (1) Re.1 per unit (2) Rs.1,700

2. 2070 Q. No. 10

The relevant information regarding manufacturing overhead cost need for preparing a flexible budget have been provided as under:

Activities in units	10,000	20,000
Indirect materials and labour costs	10,000	20,000
supervision and repairs costs	10,000	15,000
Rent, depreciation and other	5,000	5,000
Total cost	25,000	40,000

Required: Flexible budget for 16,000 units volume and 24,000 units volume by using flexible budgeting formula.

[2.5×2=5]

Ans: Rs.34,000 and Rs.46,000

3. 2069 Q. No. 14

A factory has an installed capacity of 60,000 units per annum. The capacity utilization for the coming year is estimated at 60% for first six months and 80% for second six months, which comes 18,000 units and 24,000 units respectively. The manufacturing cost for the product is given below:

Direct material	Rs. 10 per unit
Direct labour	Rs. 6 per unit
Variable overhead	Rs. 4 per unit
Fixed overhead	Rs. 12,000 per annum

The semi-variable overhead per annum is Rs. 60,000 at 60% capacity, which increases by Rs. 12,000 per annum for increase of every 10% of the capacity utilization or any part there of.

Required: Flexible Budget for 1st 6 months and 2nd 6 months in a columnar form.

[5]

Ans: Rs. 450,000 and 582,000

4. 2065. Q. No. 14

The cost of two different levels of output are as follows:

Output in units	25,000	35,000
Direct material	Rs.50,000	Rs.70,000
Direct labor	25,000	35,000
Direct expenses	25,000	35,000
Depreciation	6,000	6,000
Insurance	4,000	4,000
Supervision	14,500	19,500

Required: Flexible budget for 28,000 and 30,000 units

[5]

Ans.: TVC = Rs. 126,000 and Rs. 135,000; TFC = Rs. 12,000; TC = Rs. 138,000 and Rs. 147,000

5. 2063. Q. No. 11

Manufacturing overheads in a food processing company have been summarized as:

Indirect materials	Rs.1 per DLH
Indirect labour	Rs.2 per DLH
Supervision cost: Variable	Rs.0.5 per DLH
Fixed	Rs.20,000
Repairs and maintenance cost variable	Rs.1.00 per DLH
Repairs and maintenance cost fixed	Rs.30,000
Depreciation and other costs	Rs.50,000

Required: Budget for 4,000 DLHs and 6,000 DLHs by using Table Method.

[2.5 × 2]

Ans.: Rs.1,18,000, Rs.1,27,000

6. 2062. Q. No. 12

At 90% normal capacity level, the selling department of a Factory Organization attains sales for Rs.6,30,000 with following expenses:

- (a) **Administrative Expenses:**
- | | |
|------------------------------|---------------|
| Depreciation, rent and taxes | Rs.18,100 |
| Staff salary | Rs.91,500 |
| Running expenses | 2.5% of sales |
- (b) **Marketing expenses:**
- | | |
|----------------------------------|--------------|
| Wages (fixed) | Rs.17,500 |
| Salesman salaries and commission | 12% of sales |
- (c) **General expenses:**
- | | |
|----------|-------------|
| Fixed | Rs.12,500 |
| Variable | 2% of sales |

Required: Statement of flexible budget at 80% and 100% capacity level.

[5]

Ans.: Total Cost Rs.2,32,000; Rs.2,55,100

7. 2061. Q. No. 10

The cost details of a company at two levels of output have been given below:

Capacity in %	50%	100%
Output in units	10,000	20,000
Manufacturing cost	Rs.80,000	Rs.1,40,000

Required: Budget for 15,000 units, 22,000 units and 30,000 units by using flexible budgeting formula ($BA = FC + b \times LA$)

[5]

Ans.: Rs.1,10,000; Rs.1,52,000; Rs.2,00,000

8. 2061. Q. No. 14, 2nd time

On request, the manager of RM department submitted the following budget estimated on the basis of which a flexible budget is to be constructed for the department.

	Budget estimates for	
	6,000 DR hours	9,000 DR hours
Employee salaries	Rs.30,000	Rs.30,000
Repairs material – indirect	Rs.40,200	Rs.60,300
Miscellaneous expenses	Rs.13,200	Rs.16,800

Required: Flexible budget for 8,000 and 10,000 DR hours level. Assume that these levels are within the capacity volume. [5]

Ans.: Rs.99,200 and Rs.1,15,000

9. 2060. Q. No. 10, 1st

25,000 units of output at 100% capacity attained with following cost details:

Item of cost	Unit Cost Rs.
Materials	10
Labor	5
Manufacturing expenses (25% variable, 75% fixed)	8
Administrative expenses (50% variable, 50% fixed)	6
Selling expense (75% variable, 25% fixed)	4

Required: Flexible budget for 75% and 90% output level for next month. [3 + 3]

Ans.: Total cost: Rs.6,81,250; Rs.7,67,500

10. 2060. Q. No. 11, 2nd

The manufacturing overhead cost of a company is detailed below:

Level of Activities	20,000 units	40,000 units
Indirect materials	Rs.20,000	Rs.40,000
Indirect labor	Rs.40,000	Rs.80,000
Supervision ($y = a + bx$)	Rs.30,000	Rs.50,000
Maintenance ($y = a + bx$)	Rs.40,000	Rs.70,000
Depreciation	Rs.50,000	Rs.50,000
Rent and rates	Rs.10,000	Rs.10,000

Required: Budget for 30,000 units by using table method. [5]

Ans.: Total Cost: Rs.2,45,000

11. 2059. Q. No. 9

A company manufactures a single product for which market demand exists for additional quantity. At present the company is utilizing only 70% of the plant capacity and the following data are available:

Sales revenue	Rs.35,000
Selling price per unit	Rs.10
Variable cost per unit	Rs.4
Fixed cost	Rs.10,000
Step fixed cost	Rs.6,000

Additional information:

- At above 70% working capacity, the selling price falls by 10%
- The step fixed cost will remain unchanged at 60% to 80% capacity but will increase by Rs.1,000 between 80% to 100% capacity.

Required: Flexible budget for 80% and 90% of capacity. [5]

Ans.: TC: Rs.32,000; Rs.35,000; Profit: Rs.4,000, Rs.5,500

12. 2056. Q. No. 9

Cost for output level of 6,400 units are given below:

Variable Costs:

Direct labor cost	Rs.1,02,400
Direct materials costs	Rs.49,600
Direct expenses	Rs.3,200

Fixed costs:

Administrative cost	Rs.20,400
Selling and distribution	Rs.3,600
Unit selling price	Rs.35.

Required: (a) Flexible budget for 8,000 units. (b) Amount of profit at 8,000 units. [3 + 2]

Ans.: Rs.2,18,000; (b) Rs.62,000

13. 2055. Q. No. 10

Costs at two different levels of output are as follows:

Output		3,000 units	5,000 units
Direct material	(Rs.)	15,000	25,000
Direct labor	(Rs.)	30,000	50,000
Manufacturing overhead	(Rs.)	16,000	20,000
Office overhead	(Rs.)	8,000	10,000
Selling overhead	(Rs.)	3,500	4,500
Selling price per unit	(Rs.)	25	25

Required: Flexible budget for 4,000 units by showing profit.

[5]

Ans.: Total Cost Rs.91,000, Profit Rs.9,000

14. 2054. Q. No. 12, Cancelled

Out of the following expenses for a normal capacity of 10,000 units, prepare flexible budget for 80% and 90% output to be attained in the next months. [2+2]

Direct material	Rs.4,00,000
Direct labor	Rs.3,00,000
Prime cost	<u>700,000</u>

Mixed overhead:

Indirect expenses (30% variable and 70% fixed)	1,00,000
Maintenance expenses (60% variable and 40% fixed)	3,00,000
Salaries (100% fixed)	25,000
Depreciation (fixed)	50,000
Power and fuel (Variable 70% and fixed 30%)	4,00,000

Ans.: Total cost; Rs.13,37,000; Rs.14,56,000

Unit 16: Cost Reduction

Theoretical Questions

1. 2072 Q.No.5 (Old)

What do you mean by the value ratio? How is calculated? Explain with a suitable example. [2+3]

2. 2071, Q. No. 4

List out the scopes of cost reduction techniques.

[5]

3. 2070, Q. No. 4

Write short notes on use value, esteem value and cost value in value analysis.

[5]

4. 2069, Q. No. 4

State the meaning of cost reduction? Write in brief any two areas of cost reduction. [2+3]

5. 2067, Q. No. 5

Define cost reduction. How does it differ from cost control?

[3 + 2]

6. 2065, Q. No. 4, 2nd

Differentiate between cost reduction and cost control in brief.

[3 + 2]

7. 2062, Q. No. 4
Write short notes on the concept of value analysis and mention its two advantages. [3 + 2]
8. 2061, Q. No. 4
Differentiate between cost control and cost reduction. [3 + 2]
9. 2061, Q. No. 4, 2nd
Write briefly about the cost reduction and cost control. [3 + 2]
10. 2060, Q. No. 5, 2nd
"Cost control does not necessarily aim at a reduction in cost." Explain briefly. [3 + 2]
11. 2059, Q. No. 12
What are the differences between cost control and cost reduction? [3 + 2]
12. 2058, Q. No. 1
Write briefly about the application of cost reduction technique in product designing. [3 + 2]
13. 2057, Q. No. 5, 2nd
Differentiate between cost control and cost reduction. [3 + 2]
14. 2056, Q. No. 11
List out the different areas of cost reduction. [3 + 2]
15. 2055, Q. No. 12
Write short note on use value and aesthetic value. [3 + 2]
16. 2054, Q. No. 15, Cancelled
List out the scopes of cost reduction techniques and briefly explain the purchase control. [3 + 2]

Additional Questions

17. Define cost control and its techniques.
18. Define concept of value.
19. Give the advantages of value analysis.

