

**10. 2069 Q. No. 8**

A company produces three products A, B and C. The following information is provided for consideration:

Budgeted / Product	A	B	C
Unit selling price	Rs. 50	Rs. 60	Rs. 130
Variable cost per unit	Rs. 40	Rs. 25	Rs. 50
Sales mix	2,500	1,000	500

The fixed cost for the period under consideration is Rs. 220,000.

**Required:**

- BE sales units
- BE sales units if sales mix revised to 4 : 3 : 2.
- Percentage increase in the selling price of Product A to keep at in original breakeven sales units if the selling price of Product C decreased by 20%. [2+4+4=10]

Ans: (1) 8,800 units (2) 6,492 units (3) 10.4%

**11. 2068 Q.No. 8**

A manufacturing company produces and sells three products: P, Q and R. The executives are considering to plan sales mix for break even sales. The sales units of product P and Q by them are 10,000 units and 12,000 units respectively. However, they are unable to estimate for sales units of R. Total fixed cost budgeted is Rs. 400,000. The relevant data are:

Products	P	Q	R
Selling price per unit (Rs.)	20	25	50
Variable cost in % of sales	50	40	40

**Required:** (a) Sales unit of R to achieve over all breakeven point for the company. (b) Sales units of P, Q and R to earn after tax profit of Rs. 100,000, Tax rate is 50%. [5 + 5 = 10]

Ans: (a) 4,000 units (b) Rs. 39,000 units

**12. 2068 Old Q.No. 6**

A corporation is contemplating introducing a new line of cosmetic kits for skin care. The kits would sell for Rs. 12 each. The variable costs associated with each kit amount to Rs. 4. The fixed costs associated with test marketing amount to Rs 260,000 per year.

**Required:** ① BEP in units for test marketing sales ② If the current variable cost is maintained for all units sold upto the BEP but is increased by Rs. 0.50 for the units in excess of BEP, how many units have to be sold in order to yield a net income of Rs. 150,000. ③ Sales volume that would produce an operating profit of 20 percent of sales value. [2+2+2=6]

Ans: ① 32,500 units ② 52,500 units ③ 46,429 units

**13. 2067 Q.No. 1a**

Lexi Company is making a regular sell of 25,000 ball pens at Rs. 10 each. The resulting profit on sale of 25,000 ball pens are as follows:

Sales: 25,000 ball pens @ Rs. 10 each	Rs. 250,000
Less: Variable cost @ Rs. 6 each	(150,000)
Fixed cost	(60,000)
Profit	40,000

The market index has recently gone up by 10%, therefore, overall cost would go up by the similar percentage of uprising market index.

**Required:** The percentage increase in the sales price of ball pens to earn similar amount of profit despite uprising market index on cost. [4]

Ans: 8.4%

**14. 2067 Q.No. 8**

The forecasted sales and cost of the three products manufactured by an industry are as follows:

	X	Y	Z
Sales in units	3,000	5,000	2,000
Total variable costs	Rs. 75,000	Rs. 50,000	Rs. 65,000
Segment annual fixed costs	Rs. 20,000	Rs. 60,000	Rs. 40,000

The joint annual fixed cost is Rs. 58,500.

Each unit of X will realize Rs. 40, Y will realize Rs. 50 and Z will realize Rs. 65 from the local market.

**Required:**

1. BEP in rupees of the industry
2. BEP in rupees of each product
3. Sales in rupees of the industry to earn after tax profit of Rs. 37,800 at a tax rate of 25%.

[4+3+3=10]

Ans: (1) Rs.287,903 (2) Rs.69,097; Rs.143,951; Rs.74,855 (3) Rs.369,194

**15. 2067 (Old) Q.No. 6**

The management of Alpine Company Ltd., is worried with its annual projected sales revenue since that remains insufficient to realize profit.

Products	Projected sales revenues	P/V Ratio
Musical Doll	Rs. 200,000	0.40
Laughing Doll	Rs. 300,000	0.30
Moving Doll	Rs. 500,000	0.25

The annual unallocated fixed cost of the company will be Rs. 339,250.

**Required:**

1. BEP sales if the company maintains the projected sales mix
2. Additional sales of each product to recover loss if the company plans to increase sales of individual product.

[3+3=6]

Ans: (1) Rs. 11,50,000 (2) Rs.30,000; Rs.45,000; Rs.75,000

**16. 2066 Q.No. 3**

A firm has produced and sold two product X and Y. Below are the given some data relating to them:

	Product X	Product Y
Percentage of variable cost on sales	60%	40%
Sales mix in volume	40%	60%
Selling price per unit	Rs. 50	Rs. 40

The overall fixed cost for the firm is Rs. 52,000.

**Required:**

- a. Overall break even point in Rs.
- b. Overall break even point in units
- c. Total sales amount for earning Rs. 26,000 profit.

[2+2+2]

**17. 2065 Q.No. 2**

The annual income statement of a newly established company is as follows:

Sales revenue	Rs. 600,000
Less: Total costs	Rs. 640,000
Loss	(Rs. 40,000)

The company's P/V ratio is 0.25. The executive committee of the company has endorsed a special advertisement program with a provision of Rs. 20,000 for the coming year to push up sales.

**Required:** (a) Annual fixed cost of the current year (b) BEP sales after the special advertisement (c) Required sales to earn 5% profit on sales after the special advertisement [2+2+2]

Ans: (a) Rs. 190,000 and Rs. 210,000 (b) Rs. 840,000 (c) Rs. 10,50,000

**18. 2064 Q.No. 10 b**

An industry has been manufacturing two products in the brand name of Gangy G 501 and Gangy F 601.

The forecasted sales and costs are follows:

	Gangy G 501	Gangy F 601
Sales in units	6,000	4,000
Total variable costs in Rs.	150,000	120,000
Annual allocated fixed costs	60,000	50,000

The unallocated amount of annual fixed costs is Rs. 43,000. One unit of Gangy G 501 sales will realize Rs. 40 and Gangy F 601 will realize Rs. 50.

**Required:**

- (a) BEP in units of the industry  
 (b) BEP in units of each brand  
 (c) Sales in units required to earn after tax profit of Rs. 71,400 at a tax rate of 40%. [2+4+2=8]  
 Ans: (a) 9,000 units (b) 5,400 and 3,600 units (c) 16,000 units

**19. 2063 Q.No. 6**

A manufacturing firm made Rs. 216,000 profit after tax in the current year after deducting 40% tax on profit by selling 120,000 articles. The safety margin at the sales volume is 36,000 articles. Each article was sold for Rs. 40.

A component part used in manufacturing the article will no more be available in the coming year therefore would need a new component to be used. The use of the new component will increase the quality of the articles thus each article will realize Rs. 45 revenue. But the variable cost will increased by 10 percent. the fixed costs of the form will remain the same.

**Required:** (a) P/V ratio before change (b) Annual fixed costs (c) BEP sales in rupee for the current year (d) BEP sales in units for the coming year. [1+1+2+2]

Ans: (a) 25% (b) Rs. 840,000 (c) Rs. 33,60,000 (d) 70,000 units

**20. 2062 Q.No. 3**

Birat Toys Co. Ltd. Produces two types of toys- Car and Doll. For the coming year, the country expects to sell 2,000 units of Car and 4,000 units of Dolls. The projected income statement prepared on the basis of sales forecast is as follows:

	Car	Doll	Total
Sales Units	2000	4000	6000
Sales revenue	Rs. 400,000	Rs. 1,000,000	Rs. 1,400,000
Less: Variable cost	192,000	440,000	632,000
Contribution margin	208,000	560,000	768,000
Less: Direct fixed cost	88,000	112,000	200,000
Segment margin	120,000	448,000	568,000
Less: Common fixed cost			224,000
Net Income			344,000

**Required:**

- ① Break-even sales of the company and units sales of each product  
 ② The company planned to increase the sales of car by 1000 units. The extra advertising would cost an additional Rs. 70,000. Calculate overall break-even units in new strategy. [3+3]  
 Ans: (1) 3,313 units (1,104 units & 2,209 units) (2) 3,966 units; FC = Rs. 494,000

**21. 2061 Q.No. 3**

A company manufactures and sells three types of products under the brand name of X, Y and Z. The sales mix ratio of these three products in units are 4, 3 and 3 respectively. The selling price and variable cost per unit of these products are:

Product	Selling price per unit	Variable cost per unit
X	Rs. 50	Rs. 30
Y	Rs. 60	Rs. 50
Z	Rs. 100	Rs. 70

The overall break-even point at present sales mix is 10,000 units.

**Required:**

1. Fixed cost for the firm  
 2. Sales units of each product if desired profit is Rs. 200,000. [3+3]  
 Ans: (1) Rs. 200,000 (2) 8,000 units; 6,000 units; 6,000 units



**22. 2060 Q.No. 2**

A company produces three products A, B and C. The variable cost incurred by the company for these products are:

Product	Variable cost
A	Rs. 252,000
B	Rs. 72,000
C	Rs. 24,000

The company produced and sold of Rs. 600,000 for the period.

The fixed cost for the period will be Rs. 168,000.

**Required:**

1. Break-even sales volume in Rs. for each product and for the company as a whole.
2. Profit at sales volume by using profit volume ratio.
3. Required sales for earning a profit of Rs. 126,000.

[2+2+2]

Ans: (1) Rs. 400,000 (2) Rs. 84,000 (3) Rs. 700,000

**23. 2059 Q.No. 3**

A company sells three different products— A, B and C. The top executives are considering to plan sales mix for break even sales. The sales units of products A and B have been estimated by them are 5,000 and 6,000 units respectively.

However, they are unable to estimate for sales units of C. Total fixed cost budgeted is Rs. 200,000.

The variable cost ratios based on sales are:

Product A	50%
Product B	40%
Product C	40%

The selling price per unit has been fixed as:

Product A	Rs. 20
Product B	Rs. 25
Product C	Rs. 50

**Required:**

1. Sales units of C to achieve overall break-even point for the company.
2. Sales units of A, B and C to earn a profit of Rs. 50,000.

[3+3]

Ans: (1) 20,000 units (2) 6,250 units; 7,500 units and 2,500 units

**24. 2058 Q.No. 9(a)**

The production budget of a company for the coming year is presented below:

Sales units	20,000
Add: Ending stock	5,000
	25,000
Less: Beginning stock	10,000
Production units	15,000

The costing department informed that the variable cost per unit in the coming year will increase by 25%. The fixed cost for the year is estimated at Rs. 250,000. The selling price per unit is fixed at Rs. 40 per unit. The variable cost of the beginning stock is Rs. 24 per unit.

**Required:**

1. Break-even point in units for the coming year.
2. Profit on projected sales.
3. Required sales units for earning Rs. 20,000 profit.

[13+3+2]

Ans: (1) 19,000 units (2) Rs. 10,000 (c) Rs. 21,000

**MBA****25. 2064 Q.No. 4**

A company manufactures three products A, B and C from the same manufacturing facilities. The cost details of three products are:

Products	Sales units	Selling price per unit	Variable cost per unit
A	15,000	Rs. 50	Rs. 30
B	9,000	Rs. 30	Rs. 20
C	6,000	Rs. 20	Rs. 10

The overall fixed cost for the firm is Rs. 300,000.

**Required:**

- Determine the break-even sales units for each product and for the company as a whole.
- What sales units would the company's break-even if the product of C is stopped and new sales mix of 3:2 for A and B is developed in the projected sales?
- Determine the profit on new sales mix if the expected total sales units of A and B is 30,000 units.

[8+6+6]

Ans: (i) 10,000 units; 6,000 units; 4,000 units (ii) 11,250 units; 7,500 units

**26. 2059 Q.No. 6**

A company manufactures and sells two types of products under the brand name of P<sub>1</sub> and P<sub>2</sub>. The sales mix in value comprises 60% and 40% respectively. The variable cost of each product is:

Product P<sub>1</sub> = 60% of the selling price

Product P<sub>2</sub> = 50% of the selling price

The overall fixed cost for the firm is Rs. 8,800. The selling price per unit of P<sub>1</sub> and P<sub>2</sub> is Rs. 12 and Rs. 8 respectively.

**Required:**

- Overall break-even point in Rs. at present sales mix.
- Sales mix ratio in units at present.
- Profit or loss if sales mix ratio in units revised to 1500: 500.
- The proposed sales mix to earn a profit of Rs. 560, with the total sales of two products being 2,000 units.

[20]

Ans: (1) Rs. 12,000 & Rs. 8,000 (2) 10,000 units (3) Rs. 400 (4) 1,700 units & 300 units

**27. 2058 Q.No. 1(a)**

A company produced and sells three products P<sub>1</sub>, P<sub>2</sub> and P<sub>3</sub>. Selected data on these products show the following:

Products	Sales units	Selling price per unit	Variable cost per unit
P <sub>1</sub>	6,000	Rs. 25	Rs. 15
P <sub>2</sub>	9,000	Rs. 20	Rs. 10
P <sub>3</sub>	15,000	Rs. 10	Rs. 4

Total fixed cost Rs. 160,000.

**Required:**

- Overall break-even units.
- Total sales units for earning Rs. 100,000 profit.
- Revised break-even units, if sales mix is changed to 15,000: 9,000: 6,000 from 6,000: 9,000: 15,000.

[10]

Ans: (1) 4,000; 6,000; 10,000 units (3) 6,500; 9,750; 16,250 units (3) 8,696; 5,218; 3,478 units

**28. 2057 Q.No. 7(a)**

The total profit earned by a company was Rs. 30,000. The fixed cost for the period was Rs. 60,000 and sales volume was Rs. 150,000

**Required:**

- Profit volume ratio.
- Required sales for earning Rs. 42,000.

[10]

Ans: (1) 0.60 (2) Rs. 170,000

**29. 2057 Q.No. 7(b)**

A multi-product company provided the following information:

Product	Sales units	Selling price per unit	Variable cost per unit
A	1,000	Rs. 50	Rs. 30
B	600	Rs. 30	Rs. 20
C	400	Rs. 20	Rs. 10

Overall break-even point in units = 20,000 units

**Required:** Fixed cost for the period.

[10]

Ans: Rs. 300,000

**30. 2056 Q.No. 5(a)**

A company produces three products X, Y and Z. The following information are available.

Products	X	Y	Z
Sales units	10,000	6,000	?
Selling price per unit (Rs.)	10	15	20
Variable cost per unit (Rs.)	6	10	12
The overall fixed cost for the period Rs. 102,000			

**Required:**

- Sales units of Z for achieving break-even point at present sales mix.
- New break-even point if, sales mix is changed to 3:2:1.

[5+5]

Ans: (1) 4,000 units (2) 10,200 units; 6,800 units; 3,400 units

**31. 2056 Q.No. 7(d)**

Cost data computed and collected by a controller are as follows:

Sales 5,000 units @ Rs. 20 per unit

Variable cost per unit Rs. 12

Fixed cost for the period Rs. 24,000

Profit for the period Rs. 16,000

**Required:** Sales unit for making a profit Rs. 5 per unit.

[5]

Ans: 8,000 units

**32. 2055 Q.No. 2(a)**

The break-even point of the manufacturing company is Rs. 1,20,000. Fixed cost is Rs. 30,000.

Variable cost is Rs. 0.75 per unit.

You are **required** to calculate:

- Contribution margin ratio.
- Selling price per unit
- Required sales for earning Rs. 20,000

[3+4+3]

Ans: (1) 25% (2) Rs. 1 (3) Rs. 200,000

**33. 2054 Q.No. 6(b)**

The contribution margin is 60% and the selling price per unit of the product is Rs. 50. The fixed cost for the year is Rs. 60,000 for 1500 units. The firm will have to spend Rs. 10,000 for every additional product of 1,000 units.

**Required:**

- Calculate break-even point in units.
- Required sales in units to earn Rs. 50,000 profit.

[10]

Ans: (1) Rs. 2,334 (b) 5,000 units

**34. 2053 Q.No. 1**

Cool Brewery Company produces mineral water, beer, soft drink, and soda water. Sales manager of the company has projected total sales of Rs. 180,000 for coming month. The shares of mineral water, beer, soft drink, and soda water in total sales are  $\frac{1}{3}$ ,  $\frac{5}{12}$ ,  $\frac{1}{6}$  and  $\frac{1}{12}$  respectively. Other information are as follows:

Products	Material cost (Rs.)	Labour cost (Rs.)
Mineral water	20,000	16,000
Beer	30,000	21,000
Soft drink	10,000	14,000
Soda water	3,000	3,000

Total fixed costs which cannot be attributable to each product is estimated Rs. 44,100.

**Required:**

- Determine the break even sales volume for each product and for the company as a whole.
- What sales volume would the company break even if the production of soda water is halted and new sales mix of  $\frac{1}{4}$ ,  $\frac{3}{12}$ , and  $\frac{3}{6}$  for mineral water, beer, and soft drink respectively are developed in the projected sales?

[20]

Ans: (1) Rs. 42,000, Rs. 52,500; Rs. 21,000; Rs. 10,500 (2) Rs. 157,500



**35. 2052 Q.No. 5**

A manufacturing concern produces three products A, B and C. Data on these products are given below:

	A	B	C
Sales in units	2,500	5,000	5,000
Sales in rupees	375,000	500,000	300,000
Variable expenses (Rs.)	200,000	275,000	175,000
Profit (Rs.)	115,000	145,000	55,000

**Required:** Calculate the break-even points in units and rupees for each product and for the company as a whole. [10]

Ans: Rs. 470,000

**36. 2051 Q.No. 5**

Following data is available for a product.

Variable costs per unit	Rs. 5.00
Margin of safety	10,000 units
Total fixed costs	Rs. 60,000
Fixed costs per unit	Rs. 2.00

**Required:** Calculate selling price per unit, contribution margin ratio, break-even point in units and in amount, profit or loss at a total sales volume. [20]

Ans: Rs. 30,000

**37. 2050 Q.No. 2**

Fire Pob Company management has performed cost studies and projected the following annual costs based on 40,000 units of production & sales. Percent of annual costs.

	Total annual costs	Percent of annual costs which are variable
Direct materials	Rs. 4,00,000	100%
Direct labour	3,60,000	75
Manufacturing overhead	3,00,000	40
Selling & general administration expenses	2,00,000	25

**Required:**

1. Fire Pob's Selling price per unit that will yield a projected 10% profit on sales of 40,000 units.
2. Assume that management selects a selling price of Rs. 30 per unit. Compute the sales volume in rupees that will yield a projected 10 percent profit on sales. [20]

Ans: (1) Rs. 35 (b) 70,000 units

**38. 2048 (New) Q.No. 2**

The following information relates to production and sales of an article for January and February 1991:

	January	February
Sales	38,000	65,000
Profit	—	3,000
Loss	2,400	—

**Calculate:**

1. The amount of fixed expenses
2. Break-even sales volume
3. Profit or loss at Rs. 46,000 sales
4. Sales to earn after tax, profit of Rs. 5,000 (being 40% tax rate). [20]

Ans: (1) Rs. 10,000 (2) Rs. 50,000 (3) (Rs 800) (4) Rs. 91,665

**39. 2048 (Old) Q.No. 6**

An analysis of S. Co. Ltd into the following information:

Cost element	Variable Cost (% of Sales)	Fixed Cost (Rs.)
Direct material	32.00	—
Direct labour	28.00	—
Factory overhead	12.00	1,89,000
Distribution overhead	4.00	58,000
General administration overhead	1.00	66,000
Budgeted sales are Rs. 18,50,000		

**Required:**

- The break-even sales volume.
- The Profit at the budgeted sales volume.
- The profit at actual sales (i) drop by 10% and (ii) increase by 5% from budgeted sales. [20]  
Ans: (1) Rs. 13,60,870 (2) Rs. 112,500 (3) (i) Rs. 69,950 (ii) Rs. 133,775

**40. 2046 Q.No. 6**

Company A and Company B, both under the same management, make the sell the same type of product. Their budgeted profit and loss account of the company for January– June for the coming year are as under:

Particulars	Company A		Company B	
	Rs.	Rs.	Rs.	Rs.
Sales		3,00,000		3,00,000
Less: variable costs	2,40,000		2,00,000	
Fixed costs	30,000	2,70,000	70,000	2,70,000
Profit		30,000		30,000

**You are required to:**

- Calculate the break-even point for each company.
- Calculate the sales volume at which each of the two companies will make a profit of Rs. 10,000.
- Assess how their profitability will change with increase in volume. [20]  
Ans: (1) Rs. 150,000; Rs. 210,000 (2) Rs. 200,000; Rs. 240,000 (3) Rs. 60,000; Rs. 80,000

**41. 2040 Q.No. 10**

The annual budget data for two similar companies are as follows:

	Company A		Company B	
	Rs. 120,000	Rs. 200,000	Rs. 60,000	Rs. 200,000
Sales				
Costs: Fixed	60,000		120,000	
Variable		180,000		180,000
Income		Rs. 20,000		Rs. 20,000

**Required:** Evaluate and compare the economic characteristics of the two companies. [20]

**42. 2039 Q.No. 10**

The Duncan Company profit plan for the year is summarized below:

Sales: 400,000 units @ Rs. 50 per unit		Rs. 20,000,000
Manufacturing costs:		
Material	Rs. 1,700,000	
Labour	1,600,000	
Fixed overhead	2,650,000	
Variable overhead	4,050,000	
Distribution costs:		
Fixed	3,400,000	
Variable	1,900,000	
Administrative costs:		
Fixed	1,750,000	



Variable	350,000	
Total costs		17,400,000
Profit (before income taxes)		Rs. 2,600,000

**Required:**

- How much will the company earn per unit above the break-even point?
- Assume management is considering revising the profit plan downward on sales volume by 10 percent. Develop a table to show Selling price per unit, Variable cost per unit, unit fixed cost, and Profit per unit before and after the percent drop. What would be the new break-even point? State any assumptions you make. [20]

Ans: (1) Rs. 15,000,000 (b) 300,000 units

## 11. ACTIVITY BASED BUDGETING

### THEORETICAL QUESTIONS

#### 1. 2067 (Old) Q.No. 8

"Cost distortion occurred under conventional overhead cost allocation method." Comment the statement and write the importance of ABC for measuring costs accurately. [3+3=6]

### NUMERICAL PROBLEMS

#### 2. 2071 Q.No. 7

The overheads of a factory are given below:

Overheads	Amount	Cost drivers
Material handling expenses	Rs. 52,000	Quantity of material
Quality control expenses	Rs. 36,000	Inspections
Manufacturing expenses	Rs. 36,000	Production run
Machine operation expenses	Rs. 100,000	Machine hours

The summary of overheads are reported below:

Products	Output in units	Materials in kg	Cost per kg material in Rs.	Machine hour per unit	DLH/Unit
A	20,000	2	2	4	0.4
B	30,000	3	1.5	3	0.3
C	40,000	4	2	2	0.2

Wages rate per hour is Rs. 10.

One production run realizes 500 units in each product line and one production run needs "4" inspections.

**Required:** Activity Based Budgeting showing profit per unit if SPPU of product, A, B and C are Rs. 10, Rs. 15 and Rs. 20 respectively. [7+3=10]

Ans: Total cost: Rs. 215,172; Rs. 301,138; Rs. 492,690; Profit: Rs. (15,172); Rs. 148,862; Rs. 307,310; Profit per unit: Rs. 0.76; Rs. 4.96; Rs. 7.68

#### 3. 2070 Q.No. 8

ABC Company manufactures three products namely X, Y and Z using the same plant and processes.

The following information relate to a production period:

Products	Volume (units)	Material cost per unit	Direct labour hour per unit	Machine hour per unit	No. of requisition for the period
X	2,000	Rs.10	0.5	0.25	10
Y	4,000	Rs.20	1	0.25	5
Z	6,000	Rs.5	0.25	0.5	15

The wages rate per hour is Rs.10.

Total production overhead are as follows:

- Manufacturing overhead applicable to machine oriented activity = Rs.90,000.
- Set up cost = Rs.20,000.
- The store receiving cost = Rs.12,000.
- Material despatched and handling cost = Rs.18,000.

Additional information

- a. The three products are produced in a production run of 100 units each.
- b. The number of orders being in a batch of 400 units.

**Required:**

- i. Cost per unit under traditional method
- ii. Cost per unit under Activity Based Costing Method
- iii. Profit per unit from both method if selling price per unit is Rs.35, Rs.45 and Rs.30 for X, Y and Z respectively. [3+5+2=10]

Ans: i. Cost per unit: X:25.77; Y:51.54; Z:12.88; ii. Cost per unit: X:25.67; Y:38.42; Z:21.67

**4. 2070 Old Q.No. 5**

The expenses incurred by a company to produce two products during a period are as follows:

Production related activity	Rs.30,000
Repair and maintenance	Rs.60,000
Dispatching cost	Rs.30,000

The output, material cost and labour cost incurred and machine hour are as follows:

Products	A	B
Output in units	2,000	4,000
Material cost per unit	Rs.8	Rs.12
Labour cost per unit	Rs.6	Rs.10
Machine hour per unit	4	1

The firm adopted production run in producing products. One production run produced 20 units of product 'A' and 40 units of product 'B'. The dispatch of products was made in a lot of 50 units.

**Required:**

Activity based budget showing profit per unit if selling price per unit of product 'A' is Rs.50 and product 'B' is Rs.70 respectively. [5+1=6]

Ans: Profit per unit: Product A: Rs.3.5; B: Rs.34.25

**5. 2069 Q. No. 7 Or**

A manufacturing company provides the following overhead cost with cost pool applicable for work order from a customer.

OH cost pool	Budgeted OH cost	Cost driver	Budgeted level of cost driver
Machine set up	Rs. 100,000	No. of set ups	100 setups
Material handling	200,000	Weight of materials	50,000 pounds
Waste control	75,000	Weight of chemical used	100,000 pounds
Quality control	50,000	No. of inspectors	1,000 inspectors
Other OH cost	200,000	Machine hours	30,000 M. Hs.

A work order has received 1000 units from a customer for which direct materials and direct labour cost Rs. 12 and Rs. 4 per unit respectively.

The production volume required

- 20 machine setups.
- 8,000 pounds of materials
- 3,000 pounds of waste control
- 30 inspectors
- 500 machine hours

**Required:** Budget cost for work order under

- ① Traditional volume based budgeting system using machine hours as volume.



## ② AB budgeting technique

[4+6=10]

Ans: (1) Rs. 26,417 (2) Rs. 75,085

## 6. 2068 Q.No. 7 or

A manufacturing company produces three products X, Y and Z. The details regarding the products and cost are summarized in following table:

Product	Output in units	DLH per unit	MH per unit	Material cost per unit	Production run per product
X	4,000	2.5	2	Rs. 10	10
Y	10,000	4	2	Rs. 12	15
Z	20,000	5	2	Rs. 15	20

Other related information:

Direct labour cost per hour is Rs. 4

Overhead cost and cost driver:

Items of overhead cost	Overhead cost (Rs.)	Cost driver
Maintenance cost	204,000	Machine hours
Setup cost	180,000	Production run
Scheduling cost	90,000	Production run
Indirect labour cost	276,000	Direct labour hours

Required: (a) Cost driver rate (b) Activity based budgeted showing total cost and cost per unit.

[4 + 6 = 10]

Ans: (a) CDR: Maintenance Rs. 3; Set-up Rs. 4,000; Scheduling Rs. 2,000; Indirect Rs. 1.84  
(b) X = Rs. 182,400 and 45.6; Y = Rs. 503,600 and 50.36; Z = Rs. 924,000 and 46.2

## 7. 2068 Old Q.No. 9b)

The summary of the two products manufactured by a printing house are as follows:

	Note Book	Diary Book
Output in sets	4,000	2,000
Component materials number used	3	4
Component material cost per set	Rs. 30	Rs. 40
Number of settings	40	60
Sets of note book and diary book packed in cartoons	16	10

The budgeted overheads for the period are as follows:

Component material purchasing and handling	Rs. 40,000
Setting arrangements and inspection	Rs. 20,000
Packaging	Rs. 18,000

Required: Activity based budgeting by showing cost per unit of each product.

[6+2]

Ans: Note book RS. 40.5; Diary book Rs. 58

## 8. 2067 Q.No. 9

The working results of a company producing three products are reported.

	A	B	C
Output in units	800	600	400
Cost per unit:			
Direct material	Rs. 130	Rs. 40	Rs. 150
Direct labour	Rs. 120	Rs. 30	Rs. 120
Machine hours per unit	3 hours	2 hours	3.5 hours

The overheads incurred by the company for a period are as follows:

Machine operation expenses	Rs. 40,000
Set up costs	52,000
Store receiving costs	60,000
Dispatching costs	46,000

The machine operation expenses should be apportioned among set up, store receiving and dispatching activities in the ratio of 5: 3: 2.

The cost drivers of the overheads are as follows:



Cost	Cost driver
Set up costs	No. of production run
Store receiving costs	Requisition placed
Dispatching costs	Order executed

The three products were produced in 20 units in each production run. The number of requisition placed was 40 for each product line. Each product was dispatched in a lot of 50 units

**Required:**

- Conventional budget showing total cost and total cost per unit.
- Activity based budget showing total cost and total cost per unit.
- Comparative statement of total cost per unit and relevant comment.

[4+8+3=15]

Ans: (a) Total cost = Rs. 295,040; Rs. 89,520; Rs. 163,440; Cost per unit = Rs. 368.80; Rs. 149.20; Rs. 408.60 (b) Total cost = Rs. 280,000; Rs. 108,000; Rs. 160,000; Cost per unit = Rs. 350; Rs.180; Rs. 400

**9. 2067 (Old) Q.No. 10 b**

The following overhead activities and estimated overhead costs for the products -XY and WZ are provided by the Valley Manufacturing Company.

Overhead activity	Estimated overhead cost	Cost driver
Power	Rs. 72,600	kw. hrs.
Supervision	Rs. 50,000	No. of employees
Repairs & maintenance	Rs. 72,000	Machine hours

Following product related information is also supplied by the company.

Product	XY	WZ
Output in units	5,000	7,000
Raw material cost per unit	Rs. 12	Rs. 15
Direct labour cost per unit	Rs. 30	Rs 27
Machine hour per unit	0.2	0.5
Power consumed – kw. hrs.	300	900
No. of employees	35	65

**Required:** Activity-based budgeting showing cost per unit

[8]

Ans: Total cost Rs. 261,650 and Rs. 463,950; Cost per unit = Rs. 52.33 and 66.28

**10. 2065 Q.No. 10 b**

The expenses incurred by a manufacturing firm in producing two products during a period are as follows:

Production related activities	Rs. 40,000
Repair and maintenance of machine	Rs. 42,000
Selling related activities	Rs. 27,000

The output realized, material cost and labour cost incurred and machine hour are as follows:

	A	B
Output in units	5,000	4,000
Material cost per unit	Rs. 10	Rs. 15
Labour cost per unit	Rs. 8	Rs. 10
Machine hour per unit	3	5

The firm adopted production run in producing products. One production run produced 50 units of product A. Unlike that only 40 units of product B were produced in one production run. The dispatch of products was made in a lot of 100 units.

**Required:** Activity-based budget showing cost per unit.

[6+2=8]

Ans: Rs. 28.60 and Rs. 39

**11. 2063 Q.No. 9 a**

XYZ Co. Ltd. manufacture three products namely A, B and C using the same plant and processes. The following information relate to a production period.

Products	Volume	Material cost per unit	Direct labour hour per unit	Machine hour per unit	Number of requisition for the period
A	1,000	Rs. 20	0.50	0.25	5
B	2,000	Rs. 10	0.25	0.25	15
C	3,000	Rs. 5	1.00	0.50	20

The wage rate per hour is Rs. 5.

Total production overhead recorded by the cost accounting system is analyzed under the following headings.

- \* Factory overhead applicable to machine oriented activity Rs. 45,000
- \* Set up cost Rs. 18,000
- \* The store receiving cost Rs. 8,000
- \* Material dispatched and handling cost Rs. 6,000.

**Additional information:**

- i. The three products are produced in a production run of 50 units each.
- ii. The number of orders being in a batch of 200 units for each product.

**Required:** Activity based budget showing cost per unit of each product.

[8] Ans: Rs. 32.50; B = 21.75; Rs. 24.07

**12. 2062 Q.No. 10 b**

The necessary extracts of Nepal Electric manufacturing concern producing two products are outlined below:

	Voltage stabilizer	Volt guard
Output per unit	300	350
Machine hours per unit	15	10

The activities required for the two products are as follows:

- One set up is required for 5 units.
- Ten supervisions are required for one set up.
- One dispatch contains 10 units.

The following are the expenses incurred for manufacturing the two products.

Set up	Rs. 117,000
Machine operation	Rs. 240,000
Supervision	Rs. 65,000
Dispatch	Rs. 78,000

**Required:** Activity-based budget showing overhead per unit.

[6+2]

Ans: Rs. 850 and Rs. 700

**13. 2061 Q.No. 9 a**

The overheads of a factory are given below:

Items of overhead	Amount	Cost drivers
Material handling expenses	Rs. 74,000	Quantity of material
Quality control expenses	Rs. 36,800	Inspections
Manufacturing expenses	Rs. 46,000	Production run
Machine operation expenses	Rs. 100,000	Machine hours

The summary of the overheads are reported below:

Products	Outputs in units	Materials in kg	Cost per kg of material in Rs.	Machine hour per unit	DLH per unit
S1	25,000	2	2.00	4	0.20
S2	40,000	3	1.50	5	0.25
S3	50,000	4	1.25	4	0.30

Wage rate per hour is Rs. 20

One production run realizes 500 units in each product line and one production run needs 4 inspections.

**Required:** Activity-based budget showing cost per unit of each product. [6.5+1.5]  
 Ans: Rs. 9.92; Rs. 11.82; Rs. 13.32

**14. 2060 Q.No. 9 (a)**

The output and input costs are summarized below:

Products	AB	CD
Output in units	400	200
Material cost per unit	Rs. 150	Rs. 140
Labour hour per unit	6	8
Machine hour per unit	4	5

Further details of the expenses are reported for necessary considerations

Setting costs	Rs. 48,000
Repair and maintenance of machine	Rs. 26,000
Production scheduling	Rs. 36,000
Packing & dispatching	Rs. 12,000

Output is realized in a batch of 25 units per production run.

One production run required 2 set-ups.

Output is dispatched in a lot of 50 units.

Wage rate per hour is Rs. 25.

**Required:** Activity-based budget showing cost per unit. [6+2]  
 Ans: DM = Rs. 150 & Rs. 140; DL = Rs. 150 & Rs. 200; OH = Rs. 200 & 210

**15. 2059 Q.No. 9(a) Modified**

The factory manager of a company in co-operation with the controller's department developed the following data:

Activities	Cost Drivers	Overhead (Rs.)
Short-term variable cost	Machine hours	13,800
Scheduling cost	Number of production runs	40,000
Set-up cost	Number of production runs	20,000
Material handling cost	Number of orders	3,000

The department manufactures four products namely P, Q, R and S, using the same plant and processes. The planned productions for the coming year are:

Products	P	Q	R	S
Output in units	1,000	600	2,000	400

The following information relates to a production period.

Products	P	Q	R	S
Direct labour hours	2	2	1	3
Machine hours	1	3	0.5	2
Raw materials	Rs. 5	Rs. 10	Rs. 8	Rs. 20
Production run	5	10	5	10
No. of orders	50	40	40	30

Direct labour cost is estimated at Rs. 5 per hour.

**Required:**

1. Cost driver rate
2. Production cost budget by applying activity based budget approach.

[2+6]  
 Ans: (1) Rs.3; Rs. 4,000/3; Rs. 2,000/3; Rs. 75/4 (b) Cost per unit Rs. 28.94;  
 Rs. 63.58; Rs. 19.88; Rs. 92.41

**16. 2058 Q.No. 8**

The number of fans realized, production set-up times and labour hours consumed during a month in a workshop are given in the form of hints.

	Stand fan Section	Table fan Section
Number of fans realized in each production set-up	10	15
Production set-up times	15	20



DLH per fan realized	6	5
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The expenses projected for the planned output are given below:

Activities	Cost indicator	Expected Amount
Expenses related to set up	Setup times	Rs. 84,000
Overall general overhead	DLH consumed	Rs. 96,000
Packaging, selling and distribution expenses	Output	Rs. 67,500

Required:

- Performance in terms of DLH for each section.
- Overhead per fan for each section.

[2+4]

Ans: (1) Rs. 618.75 &amp; Rs. 515.625 (2) Rs. 630 &amp; Rs. 510

## 12. ZERO BASED BUDGETING

### THEORETICAL QUESTIONS

1. 2071 Q.No. 10a

"Zero Based Budgeting is a refinement of conventional budgeting process." Justify the statement describing its features. [4+4=8]

2. 2070 Q.No. 10a

"Zero Based Budgeting is applicable in any activities, functions or operations of any organization where a cost benefit relation can be established." Discuss. [7]

3. 2070 Old Q.No. 7

Write down the meaning of zero based budgeting and also highlight on its limitation. [3+3=6]

4. 2069 Q. No. 10b

Zero base budgeting is more than improvement over traditional based budgeting." Explain. [7]

5. 2068 Q.No. 10a

What do you mean by Zero Base Budgeting? What are its merits? [4 + 4 = 8]

6. 2068 Old Q.No. 7

"Zero-base budgeting needs justification of budget allocation." Comment. [6]

7. 2067 Q.No. 10a

Explain briefly the meaning of zero base budgeting and differentiate between zero base budgeting and conventional budgeting. [4+4=8]

8. 2065 Q.No. 7 Or

"Zero-Base Budgeting examines each programme before inserting into budget thus nothing is taken for granted." Comment. [6]

9. 2064 Q.No. 8 a

Zero-based budgeting

10. 2063 Q.No. 8

Write the meaning of Zero based budgeting. Describe its advantages. [3+3]

11. 2062 Q.No. 8 b

Differentiate between (b) Zero based budget and Traditional Budget. [3+3]

12. 2062 Q.No. 8

"Zero-based budgeting is prepared by assuming that the budget is being initiated for the first time." Do you agree with this statement? Write your answer with differentiating zero based budgeting with traditional budgeting. [8]

## 13. STRATEGIC MANAGEMENT ACCOUNTING: AN INTRODUCTION

### THEORETICAL QUESTIONS

1. 2070 Q.No. 6

Strategic Management Accounting affects both internal and external environment of business. Discuss. [10]

**2. 2068 Q.No. 6**

Define Strategic Management Accounting and explain briefly its emergence and distinguish between Strategic Management Accounting and Management Accounting. [6+4=10]

**3. 2067 Q.No. 1b**

Product Life Cycle's each phase is a new challenge and calls for a specific strategic decision. [4]

**14. STRATEGIC PLANNING AND NEED FOR ANALYTICAL INFORMATION****THEORETICAL QUESTIONS****1. 2071 Q.No. 6**

What is learning curve? Explain the implication of learning curve in strategic management account. [10]

**2. 2069 Q. No. 6**

What is strategic management accounting? Does it look at both internal and external environment of business? How does it address some of the limitations of traditional management accounting? [3+3+4=10]

**15. PROFITABILITY ANALYSIS****NUMERICAL PROBLEMS****1. 2071 Q.No. 4**

A toy distributor's has decided to analyse the profitability of its three customer groups. It buys cartoon of toys for Rs. 70 per cartoon and sells to customers at a list price of Rs. 90 per cartoon. Data relating to three customers are as follows:

	A	B	C
Cartoon sold	50,000	200,000	100,000
List selling price	90	90	90
Net setting price	90	88	85
Specific services	20	30	30
Financing services	40	60	50
Share of other services	10	20	10

Is three activity areas and their cost drivers are as follows:

Activity areas	Cost driver rate
Specific services	Rs. 1,000 per specific services
Financing services	Rs. 4,000 per 10 financing services
Other services	Rs. 2,500 per 5 other services

Required:

- Compute the operating income of each of three customers
- Comment on results

Ans: (i) Rs. 959,000; Rs. 35,36,000; Rs. 14,45,000 [6+2=8]

**2. 2071 Q.No. 4 OR**

The cost and revenue data of three products of a company are as under:

Products	A (Rs.)	B (Rs.)	C (Rs.)
Sales revenue	60,000	90,000	40,000
Variable cost of goods sold	30,000	50,000	25,000
Operating expenses:			
Research and development	5,000	-	7,000
Administrative cost	20,000	25,000	10,000

Required:

- Product line profitability by showing contribution margin ratio and return on sales ratio.

- Target cost reduction for maintaining 10% target on sales.

Ans: (i) CM ratio: 50%; 44.44%; 37.50%; Return on sales: 8.33%; 16.67%; (5%); (ii) Rs. 1,000; (Rs. 6,000); Rs. 6,000 [4+4=8]

## 3. 2070 Q.No. 4

Bottlers Nepal is going to assess the profitability of its summer customers in order to reallocate resources. It uses an activity-based system when determining the profitability of individual customers. Five activity areas their cost drivers are:

Activity area	Cost driver rate
Order taking	Rs.50 per purchase order
Sales units	Rs.100 per sales unit
Delivery vehicles cost	Rs.3 per delivery mile travelled
Product handling	Rs.0.3 per bottle sold
Emergency delivery	Rs.300 per emergency delivery run

Other data are:

Particulars	Customers		
	A	B	C
Bottles sold	10,000	7,000	6,000
List selling price	Rs.6	Rs.6	Rs.6
Actual selling price	Rs.5	Rs.5.5	Rs.6
Number of purchase order	20	12	10
Number of sales unit	5	4	3
Number of delivery	20	20	15
Miles travelled per delivery	5	7	6
Number of hot-hot runs	1	2	0
Variable cost of goods sold	Rs.47,500	Rs.33,250	Rs.28,500

Required:

- Compute the operating income of each of the three customers
- Comment on the result

[6+2=8]

Ans: Customer A: R(2,600); B: Rs.1,130; C: Rs.4,630

## 4. 2070 Q.No. 4 OR

The cost and revenue structure of two products of a factory are as follows:

Products	M	N
Sales revenue	Rs.100,000	Rs.80,000
Variable cost	Rs.40,000	Rs.40,000
Fixed overhead product line	Rs.12,000	Rs.12,000
Research and development	Rs.12,000	Rs.10,000
Allocated administration cost	Rs.11,000	Rs.8,000

Required:

- Product profitability based on contribution margin ratio and return on sales ratio.
- Target cost to maintain 10% profit of sales.

[6+2=8]

Ans: Net income: Product M: Rs. 25,000; N: Rs.10,000; Contribution margin ratio: Product M: 60%, N: 50%; Return on sales ratio: Product M: 25; N: 12.5%; Target cost: Product M: Rs.90,000; N: 72,000

## 5. 2069 Q. No. 5

A manufacturing company produces three products from a particular imported material which is procured against users license. The cost data per unit of the product are as follows:

Product	A	B	C
Sales	Rs. 200	Rs. 320	Rs. 250
Direct material @ Rs. 12 per kg. (includes 70% imported material)	48	80	80
Direct wages @ Rs. 5/DLH	50	100	90
Variable overhead	20	40	36

Required:

- Statement showing comparative profitability of the products showing P/V ratio.
- Show the profitability under each of the following circumstances:



- a. Sales potential is limited for product A and B in both value and units, whereas product C is produced fully for against government order @ 500 units per month.  
 b. Imported material is in limited supply.  
 c. Limited production capacity

[3+2+3=8]

Ans: (1) 41%; 31.25% and 17.6% (2) Rs. 22,000

**6. 2069 Q. No. 5 OR**

Cost and revenue data for three products of a company are as follows:

	Product P (Rs.)	Product Q (Rs.)	Product R (Rs.)
Sales revenue	108,000	176,000	80,000
Variable cost of goods sold	56,000	104,000	52,000
Operating expenses:			
Research and development	-	4,000	8,000
Allocated administration cost	32,000	56,000	24,000

**Required:**

- ① Product line profitability showing the contribution margin ratio and return on sales ratio.  
 ② Target cost reduction for maintaining 10% target on sales.

[6+2=8]

**7. 2068 Q.No. 4**

A distributor is going to analyze the profitability of its two customers. It buys the product at Rs. 0.90 per unit and sells to wholesale customers at a list price of Rs. 1.00 per unit.

Data relating to two customers are as follows:

	Customer A	Customer B
Units sold	1450,000	750,000
Number of purchase order	30	25
Number of sales visit	6	2
Number of deliveries	60	40
Travel per delivery	3	8

Its five activity areas and their cost drivers are:

Activity Area	Cost Driver and Rate
Order taking	Rs. 90 per purchase order
Sales visit	Rs. 200 per sales visit
Delivery	Rs. 10 per delivery
Product handling	Rs. 0.05 per unit sold

**Required:** (a) Operating income of each customer (b) Which customer is selected from the view point of profitability?

[6 + 2 = 8]

Ans: (a) Customer A = Rs. 68,000; B = Rs. 34,450 (b) Customer A

**8. 2068 Q.No. 4 or**

Cost and revenue data for three products of a company are as under:

Sales revenue	Product A Amount (Rs.)	Product B Amount (Rs.)	Product C Amount (Rs.)
	54,000	88,000	40,000
Variable cost of goods sold	28,000	54,000	26,000
Operating expenses:			
Research & development	—	2,000	4,000
Allocated administration cost	16,000	28,000	12,000

**Required:** (a) Product line profitability showing the contribution margin ratio and return on sales ratio (b) Target cost reduction for maintaining 10% target on sales.

[6 + 2 = 8]

Ans: NI: A = Rs. 10,000; B = Rs. 4,000; C = Rs. (2,000) (b) Rs. (4,600); Rs. 4,800; Rs. 6,000

**9. 2067 Q.No. 4**

The revenue and cost structure of two products of a factory are as follows:

	X	Y
Sales revenue	Rs. 75,000	Rs. 100,000
Variable costs	45,000	50,000
Fixed overhead product line	11,000	13,000

Fixed overhead allocated	10,000	20,000
Employees training costs	4,000	8,000

**Required:** (a) Product profitability based on contribution margin ratio and return on sales ratio  
 (b) Target cost to maintain 12% profit on sales [6+2=8]

Ans: (a) CM Ratio = 40%; 50%; ROS ratio = 8%; 9% (b) Rs. 3,000 each

**10. 2067 Q.No. 4 OR**

A Printing House has entered into a negotiation with a local school to supply 1,400 exercise books within four months at Rs. 30 each on per month basis in equal proportion.

The Printing House uses batch order production every month. The actual material costs and direct labour hours are accumulated.

Months	Batch Output	Material Cost (Rs.)	Direct Labour Hours	Chargeable Expenses (Rs.)	Direct Labour Hours (Overall)
Baishak	380 units	3,040	950	25,000	5,000
Jestha	340 units	2,720	850	22,000	4,000
Ashadh	360 units	2,880	900	23,400	4,500
Shrawan	330 units	2,640	792	21,000	4,200

The direct wages represent 75 percent of material cost. The chargeable expenses are levied on the basis of direct labour hours.

**Required:**

- Total cost per exercise book of each batch.
- Profit per exercise book of each batch
- Total cost and profit of the order for 1,400 exercise books [8]

Ans: (a) Rs. 26.50; Rs. 27.75; Rs. 27; Rs. 26 (b) Rs. 3.50; Rs. 2.25; Rs. 3; Rs. 4  
 (c) Total cost = Rs. 37,537.50; Profit = Rs. 4,462.50

**16. COMPETITOR STRATEGY**

N/A