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**INTERMEDIATE M'19 EXAM**

**SUBJECT- COSTING AND F.M.**

**Test Code – CIM 8061**

**(Date :09.09.2018)**

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**ANSWER-1****Production Budget (in units) for the year ended 31<sup>st</sup> March 2016**

	Product M	Product N
Budgeted sales (units)	28,000	13,000
<i>Add:</i> Increase in closing stock	320	160
No. good units to be produced	28,320	13,160
Post production rejection rate	4%	6%
No. of units to be produced	29,500	14,000
	$\left\{ \frac{28,320}{0.96} \right\}$	$\left\{ \frac{13,160}{0.94} \right\}$

**(3 MARKS)****Purchase budget (in kgs and value) for Material Z**

	Product M	Product N
No. of units to be produced	29,500	14,000
Usage of Material Z per unit of production	5 kg.	6 kg.
Material needed for production	1,47,500 kg.	84,000 kg.
Materials to be purchased	1,63,889 kg.	88,421 kg.
	$\left\{ \frac{1,47,500}{0.9} \right\}$	$\left\{ \frac{84,000}{0.95} \right\}$
Total quantity to be purchased	2,52,310 kg.	
Rate per kg. of Material Z	Rs.36	
Total purchase price	Rs.90,83,160	

**(3 MARKS)**

- (ii) Since, the maximum number of order per year can not be more than 40 orders and the maximum quantity per order that can be purchased is 4,000 kg. Hence, the total quantity of Material Z that can be available for production: **(4 MARKS)**

$$= 4,000 \text{ kg.} \times 40 \text{ orders} = 1,60,000 \text{ kg}$$

	Product M	Product N
Material needed for production to maintain the same production mix	1,03,929 kg. $\left(1,60,000 \times \frac{1,63,889}{2,52,310}\right)$	56,071 kg. $\left(1,60,000 \times \frac{88421}{252310}\right)$
Less: Process wastage	10,393 kg.	2,804 kg.
Net Material available for production	93,536 kg.	53,267 kg.
Units to be produced	18,707units $\left\{\frac{93,536 \text{ kg.}}{5 \text{ kg.}}\right\}$	8,878units $\left\{\frac{53,267 \text{ kg.}}{6 \text{ kg.}}\right\}$

## ANSWER-2

### Ascertainment of probable price of shares of Akash limited

Particulars	Plan-I	Plan-II
	If Rs. 4,00,000 is raised as debt (Rs.)	If Rs. 4,00,000 is raised by issuing equity shares (Rs.)
Earnings Before Interest and Tax (EBIT) {20% of new capital i.e. 20% of (Rs.14,00,000 + Rs.4,00,000)} (Refer working note1)	3,60,000	3,60,000
Less: Interest on old debentures (10% of Rs.4,00,000)	(40,000)	(40,000)
Less: Interest on new debt (12% of Rs.4,00,000)	(48,000)	—
Earnings Before Tax (EBT)	2,72,000	3,20,000

Less: Tax @ 50%	<u>(1,36,000)</u>	<u>1,60,000</u>
Earnings for equity shareholders (EAT)	<u>1,36,000</u>	<u>1,60,000</u>
No. of Equity Shares (refer working note 2)	30,000	40,000
Earnings per Share (EPS)	Rs. 4.53	Rs. 4.00
Price/ Earnings (P/E) Ratio (refer working note 3)	8	10
Probable Price Per Share (PE Ratio × EPS)	Rs. 36.24	Rs. 40

(6 MARKS)

**Working Notes:**

**1. Calculation of existing Return of Capital Employed (ROCE):**

(2 MARKS)

	Rs.
Equity Share Capital (30,000 shares x Rs.10)	3,00,000
10% Debentures $\left( \text{Rs.}40,000 \times \frac{100}{10} \right)$	4,00,000
Reserves and surplus	7,00,000
Total Capital Employed	14,00,000
Earnings before interest and tax (EBIT) (given)	2,80,000
ROCE = $\frac{\text{Rs.}2,80,000}{\text{Rs.}14,00,000} \times 100$	20%

**2. Number of Equity Shares to be issued in Plan-II:**

(1 MARK)

$$= \frac{\text{Rs.}4,00,000}{\text{Rs.}40} = 10,000 \text{ shares}$$

Thus, after the issue total number of shares = 30,000+ 10,000 = 40,000 shares

**3. Debt/Equity Ratio if Rs. 4,00,000 is raised as debt:**

(1 MARK)

$$= \frac{\text{Rs.}8,00,000}{\text{Rs.}18,00,000} \times 100 = 44.44\%$$

As the debt equity ratio is more than 40% the P/E ratio will be brought down to 8 in

Plan-I.

**ANSWER-3****(10 MARKS)****(a) Computation of Operating and Financial Leverage**

Actual Production and Sales: 60% of 10,000 = 6,000 units

Contribution per unit: Rs. 30 – Rs. 20 = Rs. 10

Total Contribution: 6,000 · Rs. 10 = Rs. 60,000

Financial Plan Situation	XY		XM	
	A	B	A	B
	Rs.	Rs.	Rs.	Rs.
Contribution (C)	60,000	60,000	60,000	60,000
Less: Fixed Cost	20,000	25,000	20,000	25,000
Operating Profit or EBIT	40,000	35,000	40,000	35,000
Less: Interest	4,800	4,800	1,200	1,200
Earnings before tax (EBT)	35,200	30,200	38,800	33,800
Operating Leverage = $\frac{C}{EBIT}$	60,000	60,000	60,000	60,000
Financial Leverage = $\frac{EBIT}{EBT}$	40,000 = 1.14	35,000 = 1.16	40,000 = 1.03	35,000 = 1.04

## ANSWER-4

### Preparation of Financial Statements

(6 MARKS)

Particulars	%	(Rs.)
Share capital	50%	1,00,000
Other shareholders funds	15%	30,000
5% Debentures	10%	20,000
Trade creditors	25%	50,000
Total	100%	2,00,000

Land and Buildings = Rs. 80,000

Total Liabilities = Total Assets

Rs. 2,00,000 = Total Assets

Fixed Assets = 60% of Total Gross Fixed Assets and Current Assets

= Rs. 2,00,000  $\times$  60/100

= Rs. 1,20,000

### Calculation of Additions to Plant & Machinery

	Rs.
Total Fixed Assets	1,20,000
Less: Land and Building	80,000
Plant and Machinery (after providing depreciation)	40,000
Depreciation on Machinery up to 31-3-2013	15,000
Add: Further Depreciation	5,000
<b>Total</b>	<b>20,000</b>

Current Assets = Total Assets – Fixed Assets

= Rs. 2,00,000 – Rs. 1,20,000 = Rs. 80,000

### Calculation of Stock

$$\text{Quick Ratio} = \frac{\text{Current Assets} - \text{Stock}}{\text{Current Liabilities}} = 1$$

$$= \frac{\text{Rs. } 80,000 - \text{Stock}}{\text{Rs. } 50,000} = 1$$

$$\text{Rs. } 50,000 = \text{Rs. } 80,000 - \text{Stock}$$

$$\text{Stock} = \text{Rs. } 80,000 - \text{Rs. } 50,000$$

$$= \text{Rs. } 30,000$$

$$\text{Debtors} = \frac{4}{5} \text{th of Quick Assets}$$

$$= (\text{Rs. } 80,000 - 30,000) \times \frac{4}{5}$$

$$= \text{Rs. } 40,000$$

### Debtors Turnover Ratio

$$= \frac{40,000 \times 12}{\text{Credit Sales}} = 2 \text{ months}$$

$$2 \text{ Credit Sales} = 4,80,000$$

$$\text{Credit Sales} = 4,80,000 / 2$$

$$= 2,40,000$$

Gross Profit (15% of Sales)

$$\text{Rs. } 2,40,000 \times \frac{15}{100} = \text{Rs. } 36,000$$

### Return on Networth (profit after tax)

$$\text{Networth} = \text{Rs. } 1,00,000 + \text{Rs. } 30,000$$

$$= \text{Rs. } 1,30,000$$

$$\text{Net Profit} = \text{Rs. } 1,30,000 \times \frac{10}{100} = \text{Rs. } 13,000$$

$$\text{Debenture Interest} = \text{Rs. } 20,000 \times \frac{5}{100} = \text{Rs. } 1,000$$

**Projected Profit and Loss Account for the year ended 31-3-2014****(2 MARKS)**

To Cost of Goods Sold	2,04,000	By Sales	2,40,000
To Gross Profit	36,000		
	<b>2,40,000</b>		<b>2,40,000</b>
To Debenture Interest	1,000	By Gross Profit	36,000
To Administration and Other Expenses	22,000		
To Net Profit	13,000		
	<b>36,000</b>		<b>36,000</b>

**Ganesh Limited****Projected Balance Sheet as on 31st March, 2014****(2 MARKS)**

<b>Liabilities</b>	<b>Rs.</b>	<b>Assets</b>		<b>Rs.</b>
Share Capital	1,00,000	Fixed Assets		
Profit and Loss A/c (17,000+13,000)	30,000	Land & Buildings		80,000
5% Debentures	20,000	Plant & Machinery	60,000	
Current Liabilities		Less: Depreciation	20,000	40,000
Trade Creditors	50,000	Current Assets:		
		Stock	30,000	
		Debtors	40,000	
		Bank	10,000	80,000
	<b>2,00,000</b>			<b>2,00,000</b>

**ANSWER-5****(i) Amount of under – absorption of production overheads during the year 20X1 - 12**

		<b>Rs.</b>
Total production overheads actually incurred during the year 20X1 – X2		6,00,000
Less : 'Written off' obsolete stores	Rs. 45,000	
Wages paid for strike period	Rs. 30,000	75,000
Net Production overheads actually incurred : (A)		5,25,000
Production overheads absorbed by 48,000 machine		
Hours @ Rs. 10 per hour : (B)		4,80,000
Amount of under – absorption of production overheads : [(A) – (B)]		45,000

**(4 MARKS)**



**(ii) Accounting treatment of under absorption of production overheads**

It is given in the statement of the question that 20,000 units were completely finished and 8,000 units were 50% complete, one third of the under – absorbed overheads were due to lack of production planning and the rest were attributable to normal increase in costs.

	Rs.
1. (33 – 1/3% of Rs. 45,000) i.e., Rs. 15,000 of under – absorbed overheads were due to lack of production planning. This being abnormal, should be debited to the Costing Profit and Loss A/c.	15,000
2. Balance (66 – 2/3% of Rs. 45,000) i.e., Rs. 30,000 of under – absorbed overheads should be distributed over work – in – progress, finished goods and cost of sales by using supplementary rate.	30,000
Total under – absorbed overheads	45,000

**Apportionment of unabsorbed overheads of Rs. 30,000 over, work – in – progress, finished goods and cost of sales**

	Equivalent Completed Units	Rs.
Work – in – Progress (4,000 units × Rs. 1.25) (Refer to working note)	4,000	5,000
Finished goods (2,000 units × Rs. 1.25)	2,000	2,500
Cost of sales (18,000 units × Rs. 1.25)	18,000	22,500
	24,000	30,000

**Working Note :**

$$\text{Supplementary rate per unit} = \frac{\text{Rs. } 30,000}{24,000} = \text{Rs. } 1.25$$

**(6 MARKS)**

**ANSWER-6**

**ABC Ltd.**

**Budget for 85% capacity level for the period 20X3-X4**

**(3 Marks)**

Budgeted production (units)		85,000
	Per Unit (Rs.)	Amount (Rs.)
Direct Material (note 1)	21.60	18,36,000
Direct Labour (note 2)	10.50	8,92,500
Variable factory overhead (note 3)	2.10	1,78,500
Variable selling overhead (note 4)	4.32	3,67,200
Variable cost	38.52	32,74,200
Fixed factory overhead (note 3)		2,20,000

Fixed selling overhead (note 4)		1,15,000
Administrative overhead		1,76,000
Fixed cost		5,11,000
Total cost		37,85,200
Add: Profit 20% on sales or 25% on total cost		9,46,300
Sales		47,31,500
Contribution (Sales – Variable cost)		14,57,300

**Working Notes:**

**1. Direct Materials:**

**(1.5 MARKS)**

75%Capacity	Rs. 15,00,000	65%Capacity	Rs.13,00,000
<u>65%Capacity</u>	<u>Rs.13,00,000</u>	<u>55%Capacity</u>	<u>Rs.11,00,000</u>
10% change in capacity	<u>2,00,000</u>	10% change in capacity	<u>2,00,000</u>

For 10% increase in capacity, i.e., for increase by 10,000 units, the total direct material cost regularly changes by Rs. 2,00,000

Direct material cost (variable) = Rs. 2,00,000 ÷ 10,000 = Rs. 20

After 8% increase in price, direct material cost per unit=Rs.20×1.08=Rs.21.60

Direct material cost for 85,000 budgeted units=85,000×Rs.21.60=Rs.18,36,000

**2. Direct Labour :**

**(1.5 MARKS)**

75% Capacity	Rs. 7,50,000	65% Capacity	Rs. 6,50,000
<u>65% Capacity</u>	<u>Rs. 6,50,000</u>	<u>55% Capacity</u>	<u>Rs.5,50,000</u>
10% change in capacity	1,00,000	10% change in capacity	<u>1,00,000</u>

For 10% increase in capacity, direct labour cost regularly changes by Rs.1,00,000.

Direct labour cost per unit = Rs. 1,00,000 ÷ 10,000 = Rs.10

After 5% increase in price, direct labour cost per unit = Rs. 10 × 1.05 = Rs. 10.50

Direct labour for 85,000 units = 85,000 units × Rs. 10.50 = Rs. 8,92,500.

**3. Factory overheads are semi-variable overheads:****(2MARKS)**

75% Capacity	Rs. 3,50,000	65% Capacity	Rs.3,30,000
<u>65% Capacity</u>	<u>Rs.3,30,000</u>	55% Capacity	Rs. <u>3,10,000</u>
10% change in capacity	<u>20,000</u>	10% change in capacity	<u>20,000</u>

Variable factory overhead = Rs. 20,000 ÷ 10,000 = Rs. 2

Variable factory overhead for 75,000 units = 75,000 × Rs. 2 = Rs. 1,50,000

Fixed factory overhead = Rs. 3,50,000 – Rs. 1,50,000 = Rs. 2,00,000.

Variable factory overhead after 5% increase = Rs. 2 × 1.05 = Rs. 2.10

Fixed factory overhead after 10% increase = Rs. 2,00,000 × 1.10 = Rs. 2,20,000.

**4. Selling overhead is semi-variable overhead:**

75%Capacity	Rs. 4,00,000	65%Capacity	Rs.3,60,000
<u>65%Capacity</u>	<u>Rs.3,60,000</u>	55%Capacity	Rs. <u>3,20,000</u>
10% change in capacity	<u>40,000</u>	10% change in capacity	<u>40,000</u>

Variable selling overhead = Rs. 40,000 ÷ 10,000 units = Rs.4

Variable selling overhead for 75,000 units = 75,000 × Rs. 4 = Rs. 3,00,000.

Fixed selling overhead = Rs. 4,00,000 – Rs. 3,00,000 = Rs. 1,00,000

Variable selling overhead after 8% increase = Rs. 4 × 1.08 = Rs. 4.32

Fixed selling overhead after 15% increase = Rs. 1,00,000 × 1.15 = Rs. 1,15,000

**5. Administrative overhead is fixed:**

After 10% increase = Rs. 1,60,000 × 1.10 = Rs. 1,76,000

**(2 MARKS)**