SUGGESTED SOLUTION

CA FINAL NOV'19

SUBJECT- SCM & PE

Test Code - FNJ 7261

BRANCH - () (Date :)

ANSWER 1 (A)

(i) Total Contribution Statement

Statement Showing 'Total Contribution' for remaining two phases

Particulars	Maturity		Decline
Weeks	31 – 50	51 – 70	71 – 110
Number of units Produced and Sold	22,000	22,000	22,000
Selling Price per unit (Rs.)	450	450	300
Unit Variable Cost (Rs.)	225	188	225
Unit Contribution (Rs.)	225	262	75
Total Contribution (Rs.)	49,50,000	57,64,000	16,50,000

(3 MARKS)

(ii) Pricing Strategy for Product a^3

ORIL is following the skimming price strategy that 's why it has planned to launch the product a^3 initially with high price tag.

A skimming strategy may be recommended when a firm has incurred large sums of money on research and development for a new product.

In the question, ORIL has incurred a huge amount on research and development. Also, it is very difficult to start with a low price and then raise the price. Raising a low price may annoy potential customers.

Price of the product a^3 is decreasing gradually stage by stage. This is happening because ORIL wants to tap the mass market by lowering the price.

(3 MARKS)

(iii) Possible reasons for the changes in cost during the life cycle of the product 'a^3'

Product life cycle costing involves tracing of costs and revenues of each product over several calendar periods throughout their entire life cycle. Possible reasons for he changes in cost during the life cycle of the product are as follows :

ORIL is expecting reduction in unit cost of the product a^3 over the life of product as a consequence of economies of scale and learning / experience curves.

Learning effect may be the possible reason for reduction in per unit cost if the process is labour intensive. When a new product or process is started, performance of worker is not at its best and learning phenomenon takes place. As the experience is gained, the performance of worker improves, time taken per unit reduces and thus his productivity goes up. The amount of improvement or experience gained is reflected in a decrease in cost.

Till the stage of maturity, ORIL is in the expansion mode. The ORIL may be able to take advantages of quantity discount offered by suppliers or may negotiate the price with suppliers.

Product a^3 has the least variable cost Rs. 188 in last phase of maturity stage; this is because a product which is in the mature stage may require less marketing support than a product which is in the growth stage so, there is a saving of marketing cost per unit.

Again, the cost per unit of the product a^3 jumps to Rs. 225 in decline stage. As soon as the product reaches its decline stage, the need or demand for the product disappear and quantity discount may not be available. Even ORIL may have to incur heavy marketing expenses for stock clearance.

(3 marks)

Workings :

Statement of Cumulative Sales along with Sales Price and Variable Cost

Weeks	Demand per week	Total Sales	Cumulative Sales	Selling Price per unit (Rs.)	Variable Cost per unit (Rs.)
1 – 10	220	2,200	2,200	750	375
11 – 20	550	5,500	7,700	600	300
21 – 30	825	8,250	15,950	525	300
31 – 50	1,100	22,000	37,950	450	225
51 – 70	1,100	22,000	59,950	450	188
71 – 80	880	8,800	68,750	300	225
81 – 90	660	6,600	75,350	300	225
91 – 100	440	4,400	79,750	300	225
101 – 110	220	2,200	81,950	300	225

(3 marks)

ANSWER 1 (B)
Workings
Ranking of Products When Availability of Time is the Key Factor

Particulars	P	Q	R	S
Market Price per unit (Rs.)	700	690	560	460
Less : Variable cost of Production per unit (Rs.)	660	620	360	370
Contribution per unit (Rs.)	40	70	200	90
Labour Hours per unit	6 hours	8 hours	4 hours	6 hours
Contribution per Labour Hour	6.67	8.75	50.00	15.00
Ranking	IV	III	I	II
Maximum Sales (units)	3,000	3,500	2,800	1,800
Total No. of Hours Required	18,000	28,000	11,200	10,800
(i) Allocation of 48,000 Hours on the Basis of Ranking	----	26,000*	11,200	10,800
(ii) Allocation of 64,000 Hours on the Basis of Ranking	14,000*	28,000	11,200	10,800

(3 marks)

(*) Balancing Figure

Time required to meeting the demand of 2,200 units of Product S for Division B is 13,200 hrs. This requirement of time viz. 13,200 hrs. for providing 2,200 units of Product S for Division B can be met by sacrificing 13,200 hours of Product Q (1,650 units).

Transfer Price = Variable Cost + Opportunity Cost

= Rs. 370 + $\frac{(13,200\ hrs. \times Rs.8.75)}{2,200\ units}$

= Rs. 422.50

Time required to meeting the demand of 2,200 units of Product S for Division B is 13,200 hrs. This requirement of time viz. 13,200 hrs. for providing 2,200 units of Product S for Division B can be met by sacrificing 13,200 hours of Product P (2,200 units).

Transfer Price = Variable Cost + Opportunity Cost

= Rs. 370 + $\frac{(13,200\ hrs. \times Rs.6.66..)}{2,200\ units}$

= Rs. 410.00 **(2 MARKS)**

Statement Showing Purchase from Outside vs Internal Transfer

		Option – 1 (48,000 hrs.)	Option – 2 (64,000 hrs.)
Purchase Price of S	....(A)	420.00	420.00
Internal Transfer Price (based on opportunity cost)	....(B)	422.50	410.00
Net Gain/ (loss) per unit	(A) – (B)	(2.50)	10.00

It is profitable for the Division B to get transfer 2,200 units of Product S from Division A only if hrs. available in Division A are 64,000. **(3 marks)**

ANSWER 2 (A)

Transfer Price : 200% of Full Cost Basis

= 200% of (¥ 2,500 + ¥ 5,000)

= ¥ 15,000 or £300 (¥ 15,000/50)

Transfer Price : Market Price Basis

= ¥ 9,000 or £ 180 (¥ 9,000/50)

(2 marks)

Statement Showing "Operating Income"

Particulars	Japan Mining Division		UK Processing Division	
	Transfer Price		**Transfer Price**	
	¥ 15,000	¥ 9,000	£300	£ 180
Selling Price (Polished Stone)	----	--	£3,000	£ 3,000
Transfer Price (Raw Emerald)	¥ 15,000	¥ 9,000	-	-
Raw Emerald	--	---	£ 600 (£300 × 2)	£ 360 (£180 ×2)
Variable Cost	¥ 2,500	¥ 2,500	£ 150	£150
Fixed cost	¥ 5,000	¥ 5,000	£350	£350
Profit Before Tax	¥ 7,500	¥ 1,500	£ 1,900	£ 2,140
Less : Tax 20% / 30%	¥ 1,500	¥300	£570	£642
Profit After Tax per Carat of Raw Emerald	¥6,000	¥1,200	£1,330	£1,498
Raw Emerald	1,000 carats	1,000 carats	500 carats	500 Carats
Total Profit	¥ 60,00,000	¥12,00,000	£ 6,65,000	£ 7,49,000
	OR	**OR**		
Total Profit (£)	£ 1,20,000	£ 24,000	£6,65,0000	£7,49,000

(6 marks)

ANSWER 2 (B)

	Situation	Appropriate Pricing Policy
(i)	'W' is a new product for the company and the market and meant for large scale production and long term survival in the market. Demand is expected to be elastic.	Penetration Pricing
(ii)	'X' is a new product for the company, but not for the market. X's success is crucial for the company's survival in the long term.	Market Price or Price Just Below Market Price

(iii)	'Y' is a new product to the company and the market. It has an inelastic market. There needs to be an assured profit to cover high initial costs and the unusual sources of capital have uncertainties blocking them.	Skimming Pricing	
(iv)	'Z' is a perishable item, with more than 80% of its shelf life over.	Any Cash Realizable Value*	

(4 MARKS)

ANSWER 2 (C)

Should the Division X reduce the selling price by Rs. 20 per unit ....?

Statement Showing 'Impact of Selling Price Reduction'

Particulars	Rs.
Incremental Revenue	
Additional Sales Revenue (9,600 units × Rs. 180)	17,28,000
Loss of revenue (30,000 units × Rs. 20)	(6,00,000)
Total (A)	11,28,000
Incremental Cost	
Component Purchase Costs (9,600 units × Rs. 35)	3,36,000
Other Variable costs $\left(\frac{9,600\ units\ \times Rs.16,80,000}{30,000\ units}\right)$	5,37,600
Variable Marketing Costs $\left(\frac{9,600\ units\ \times Rs.2,70,000}{30,000\ units}\right)$	86,400
Total (B)	9,60,000
Savings /(Loss) **(A) - (B)**	**1,68,000**

Advice

Above incremental analysis clearly indicates that the reduction of Selling Price by Rs. 20 per unit shall be accepted as it increases the Profit of the concern by Rs. 1,68,000.

(4 MARKS)

(ii)   Should the Division Y be willing to supply 39,600 units to Division X .....?

Statement showing 'Minimum Average Transfer Price' per component (39,600)

Particulars	Rs.
Variable Cost	15.00
Loss of Contribution * [14,600 units × (Rs. 50 – Rs. 15 – Rs. 3)/39,600 units]	11.80
Transfer Price	26.80

(*)   Division Y has surplus capacity to the extent of 25,000 units, for additional 14,600 units the Transfer Price must consider the Division Y's Variable Costs of Manufacturing the Component plus the Lost Contribution Margin (that will result from losing outside sales).

Company's Perspective

Particulars	Rs.
Market Price per component	35.00
Relevant Cost for Transfer per component (from above)	26.80
Saving per component	8.20
Units	39,600
Total Savings	3,24,720

Advice

It is not in the interest of the Division Y to transfer 39,600 units to Division X at Price below the Minimum Average Transfer Price based on Opportunity Cost. However, from the Concern's Perspective, internal transfer between Divisions is beneficial as each unit to be transferred is offering a saving of Rs. 8.20.

<div align="right">(4 MARKS)</div>

ANSWER 3

Analysis of Cost plus Pricing Approach

The company has a plan to produce 2,00,000 units and it proposed to adopt **Cost *plus* Pricing** approach with a markup of 25% on full budgeted cost. To achieve this pricing policy, the company has to sell its product at the price calculated below:

Qty.	2,00,000 units
Variable Cost (2,00,000 units × Rs. 32)	64,00,000
Add: Fixed Cost	16,00,000
Total Budgeted Cost	80,00,000
Add: Profit (25% of Rs. 80,00,000)	20,00,000
Revenue (need to earn)	1,00,00,000
Selling Price Per unit $\left(\frac{Rs.1,00,00,000}{2,00,000\ units}\right)$	50 p.u.

However, at selling price Rs.50 per unit, the company can sell 1,40,000 units only, which is 60,000 units less than the budgeted production units.

After analyzing the price-demand pattern in the market (which is price sensitive), to sell all the budgeted units market price needs to be further lowered, which might be lower than the total cost of production.

<div align="right">(3 Marks)</div>

Statement Showing "Profit at Different Demand & Price Levels"

	I	II	III	IV	Budgeted
Qty. (units)	1,68,000	1,52,000	1,40,000	1,28,000	1,08,000
	Rs.	Rs.	Rs.	Rs.	Rs.
Sales	73,92,000	72,96,000	70,00,000	71,68,000	64,80,000
Less: Variable Cost	53,76,000	48,64,000	44,80,000	40,96,000	34,56,000
Total Contribution	20,16,000	24,32,000	25,20,000	30,72,000	30,24,000
Less: Fixed Cost	16,00,000	16,00,000	16,00,000	16,00,000	16,00,000
Profit (Rs.)	4,16,000	8,32,000	9,20,000	**14,72,000**	14,24,000
Profit (% on total cost)	5.96	12.87	15.13	**25.84%**	28.16%

<div align="right">(5 MARKS)</div>

Determination of the Best Course of Action

(i) Taking the above calculation and analysis into account, the company should produce and sell 1,28,000 units at Rs.56. At this price company will not only be able to achieve its desired mark up of 25% on the total cost but can earn maximum contribution as compared to other even higher selling price.

(ii) If the company wants to uphold its proposed pricing approach with the budgeted quantity, it should try to reduce its variable cost per unit for example by asking its supplier to provide a quantity discount on the materials purchased

(2 MARKS)