JOINT PRODUCTS & BY PRODUCTS

Q. 1. A company processes a raw material in its Department 1 to produce three products, viz. B and X at the same split-off stage. During a period 1,80,000 kgs. of raw materials were processed in Department 1 at a total cost of ₹ 12,88,000 and the resultant output of A, B and X were 18,000 kgs, 10,000 kgs and 54,000 kgs respectively. A and B were further processed in Department 2 at a cost of ₹ 1,80,000 and ₹ 1,50,000 respectively.

X was further processed in Department 3 at a cost of ₹ 1,08,000. There is no waste in further processing. The details of sales effected during the period were as under :

	A	B	X
Quantity Sold (kgs.)	17,000	5,000	44,000
Sales Value (₹)	12,24,000	2,50,000	7,92,000

There were no opening stocks. If these products were sold at split-off stage, the selling prices of A, B and X would have been ₹ 50, ₹ 40 and ₹ 10 per kg respectively. Required :

(i) Prepare a statement showing the apportionment of joint costs to A, B and X.

(ii) Present a statement showing the cost per kg of each product indicating joint cost and further processing cost and total cost separately.

(iii) Prepare a statement showing the productwise and total profit for the period.

(iv) State with supporting calculations as to whether any or all the products should be further processed or not.

Q. 2. The Sunshine Oil Company purchases crude vegetable oil. It does refining of the same. The refining process results in four products at the split off point : M, N, O and P.

Product O is fully processed at the split off point. Product M, N and P can be individually further refined into 'Super M', 'Super N' and 'Super P'. In the most recent month.

Product M	3,00,000 gallons
Product N	1,00,000 gallons
Product O	50,000 gallons
Product P	50,000 gallons

The joint cost of purchasing the crude vegetable oil and processing it were ₹ 40,00,000.

Sunshine had no beginning or ending inventories. Sales of Product O in October were ₹ 20,00,000. Total output of products M, N and P was further refined and then sold. Data related to October, 1999 are as follows :

	Further Processing Costs to Make Super Products	Sales
Super 'M'	₹ 80,00,000	₹ 1,20,00,000
Super 'N'	₹ 32,00,000	₹ 40,00,000
Super 'P'	₹ 36,00,000	₹ 48,00,000

Sunshine had the option of selling products M, N and P at the split off point. This alternative would have yielded the following sales for the October, 1999 production :

Product M	₹ 20,00,000
Product N	₹ 12,00,000
Product P	₹ 28,00,000

You are required to answer :

(i) How the joint cost of ₹ 40,00,000 would be allocated between each product under each of the following methods (a) sales value at split off ; (b) physical output (gallons) ; and (c) estimated net realizable value?

(ii) Could Sunshine have increased its October, 1999 operating profits by making different decisions about the further refining of product M, N or P? Show the effect of any change you recommend on operating profits.

Q. 3. J B Limited produces four joint products A, B, C and D, all of which emerge from the processing of one raw material. The following are the relevant data :

Production for the period :

Joint Product	Number of units	Selling price per unit
A	500	18.00
B	900	8.00
C	400	4.00
D	200	11.00

The company budgets for a profit of 10% of sales value. The other estimated costs are :

	₹
Carriage inwards	1,000
Direct wages	3,000
Manufacturing overheads	2,000
Administration overhead	10% of sales value

You are required to :

(a) Calculate the maximum price that may be paid for the raw material.

(b) Prepare a comprehensive cost statement for each of the products allocating the materials and other costs based upon :

(i) Number of units (ii) Sales value

Q. 4. The yield of a certain process is 80% as to the main product, 15% as to the by-product and 5% as to the process loss. The material put in process (5,000 units) cost ₹ 23,75 per unit and all other charges are ₹ 14,250, of which power cost accounted for 33 %. It is ascertained that power is chargeable as to the main product and by-product in the ratio of 10 : 9.

Draw up a statement showing the cost of the by-product.