

# **JOINT PRODUCTS & BY PRODUCTS**

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## Important Terms Explained

### 1. JOINT PRODUCTS

The outputs which emerge simultaneously from a common or Joint process are known as a Joint Products.

### 2. JOINT PROCESS

The process from which joint products are obtained is called a Joint Process. Needless to say, costs incurred in joint process are DM + DL + DE + Fact O/H . . . the only difference being that it is incurred commonly / jointly for two or more products which emerge simultaneously viz. Joint Products.

### 3. SEPARATION / SPLIT – OFF POINT

The point at which joint products are separately identifiable is known as Separation / Split – off point. All costs ( DM + DL + DE + Fact O/H ) incurred upto the separation / split – off point are jointly incurred for all the joint products and hence, are called JOINT PROCESS COSTS.

### 4. POST SEPARATION *MANUFACTURING COSTS*

These are the costs incurred on a particular joint product *after the separation / split – off point* . . . probably to obtain a more refined form of the crude joint product obtained at split – off point. This further processing will also be done in the *factory* and hence, at the most, DM + DL + DE + Fact O/H costs will be incurred.

### 5. BY PRODUCTS

These are also an outcome of joint process but *obtained unintentionally* (eg. Dairymilk SHOTS while manufacturing Crackle, Fruit & Nut and Silk)

## **TWO MAIN OBJECTIVES OF THIS CHAPTER**

Apportionment of Joint cost  
to various Joint Products

Depth of Processing  
( *dealt with later* )

## Objective I : Apportionment of Joint Cost to various *Joint Products*

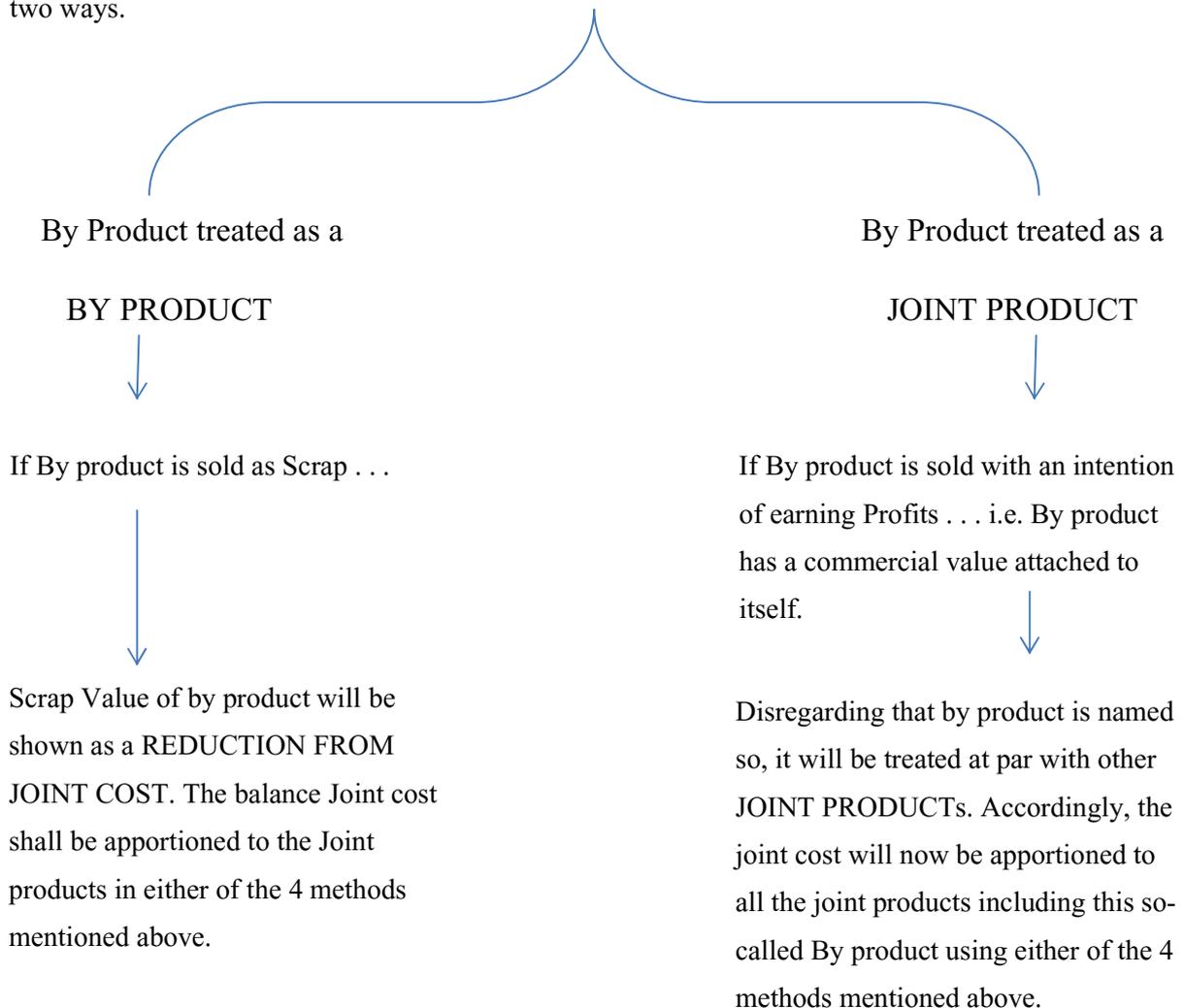
4 Methods to apportion the Joint Cost are

- a) Output Method
- b) Sales Value of Output Method
- c) Net Relative Sales Value of Output / Notional Sales Value of Output Method
- d) Reverse Cost Sheet Method

The co. can follow any other customised method for apportionment of joint cost. Costing --- Khulasaand.

### Very Important Note: Treatment of By Products

By Products are those items of output which are *obtained incidentally* from the joint process. However, based on the *commercial viability* of these by products, they may be treated in either of the following two ways.



## **Objective II :Depth of Processing**

Depth of processing should always be interpreted as '*Depth of FURTHER Processing*'.

Only 1 question to be asked viz.

“Whether a product should be sold at split - off point itself or after further processing?”

Answer ---..... Approach . . . only the “relevant” costs in relation to further processing shall be considered.

While analysing depth of processing, the following two facts will always hold true

- i. Post separation manufacturing costs --- Always RELEVANT
- ii. Joint cost apportionment of joint products --- Always IRRELEVANT

### Notes for Ques. No. 1

➤ OUTPUT METHOD : (Worst method)

OMG!! Joint cost per unit for WYE & ZED is same to same @ Rs. 4 per unit.

This is the characteristic of output method . . . that joint cost apportioned per unit for every category of joint product will always be same to same.

Ideology of output method is that ---

*Irrespective of the category of Joint product . . . every joint product has same aukaad.* This is the reason why this method has some relevance only when joint products at split off point are SIMILAR & INTERCHANGEABLE.

➤ SALES VALUE OF OUTPUT METHOD :(Best method)

OMG!! Joint cost per unit for WYE & ZED is in the same ratio as that of selling price (per unit) of WYE & ZED. {3.75 : 5 is same as 6 : 8}

This is the characteristic of sales value of output method . . . that joint cost apportioned per unit for every category of joint product will always be in the same ratio as that of selling price (per unit) for every category of joint product.

Ideology of sales value of output method is that ---

*Every joint product should be apportioned joint cost in the ratio of its respective aukaad.* Accordingly, every joint product which is capable of fetching more sales revenue for the company should be apportioned more joint cost.

V.Imp. Note: Why difference in TOTAL profits even when TOTAL joint cost charged under both the method is same? . . . . . because under each method the valuation of FG stock changes.

### **Notes for Ques. No. 2**

Notional sales value of output / Net relative sales value of output Method(Next best method)

Notional sales value of output / net relative sales value of output should strictly be interpreted in the following manner ---

“If the entire quantity *produced* of joint product (which is currently sold after further processing) had it been subject to sales at split off point itself, how much sales revenue would have it fetched !!

V.Imp. Note: Admin. O/H and S&D O/H will any which ways be incurred regardless of output being sold at split-off point or after further processing. Hence, these items of O/Hs are irrelevant for computing Notional sales value / Net relative sales value of output.

### **Notes for Ques. No. 4**

It is clearly mentioned in the question, that product B & C are in the nature of by-products, probably because they were not intended to be manufactured.

But since by-products B & C are also commercially sold by XYZ ltd. for earning profits (commercially sold), for the purpose of appointment of joint cost, these by-products B & C will be treated at par with joint product A irrespective of the nomenclature used for these by- products in the question.

In a nutshell, the joint process cost of Rs.8400 will be apportioned to joint product A as well as by-products B & C.

The required part is to apportion the joint cost of Rs. 8400. But, the method to apportion this joint cost is not given.

Selection of the most suitable method to apportion the joint cost:

If the question is silent, the following approach should be adhered to:

- Never follow “Output method” unless the joint products are similar or interchangeable in nature. This is the worst method for appointment of joint cost. Hence, this method should be used only as a last resort.
- The “Sales value of output method” is the best method for appointment of joint cost. However, it can't be followed in the given sum because the output is not sold at split- off point itself but only after further processing.
- If the sale value of O/P method fails, the next best alternative is “notional sales value of output method”. This method is very much possible in the given sum; however, if the cost sheet is prepared after apportioning the joint cost as per this method, the mentioned desired profit percentage stands vitiated.

This is an indication that the “reverse cost sheet method” should be followed for apportionment of joint cost. (Generally, when profit % of joint products is given, it is an indication that reverse cost sheet method should be followed for apportionment of joint cost.)

Notes for Ques. No. 5

BRUCIL being obtained unintentionally is a by – product. However, since the company has decided to further process it and sell it commercially, it will be treated at par with joint product BOMEX i.e. joint cost will be apportioned to BRUCIL as well.

Given the circumstances, we would have followed the notional sales value of output method for apportionment of joint cost. However, in the given sum the question has specifically laid down the method by which joint cost will be apportioned . . .& we are bound by it (Costing --- No Rule Book!)

### Notes for Ques. No. 7

It is of paramount importance to interpret that the profit % for every joint product given in every sum of reverse cost sheet method (ques no. 4, 5 & 7) are all ESTIMATED profit %. {i.e. 1<sup>st</sup> day}

Selling prices are also determined on the first day itself (2<sup>nd</sup> objective of costing). When the company had fixed the selling prices of Rs. 13.75/unit & Rs. 8.75/unit for P & Q, it would have fixed these selling prices after adding up the desired 25% profit margin to the cost.

Reverse calculations show (as depicted by above cost sheet) that the company would have estimated on the 1<sup>st</sup> day that the joint process cost would be Rs. 66,000; which the company thought to apportion between P & Q in the ratio of 8 : 3 (48,000 : 18,000). *We have no idea whatsoever, that why the company apportioned Joint Cost of Rs. 66,000 in the ratio of 8: 3 !! Neither do we know which method did company use to apportion the Joint Cost !! But whatever be the case,, company apportioned the ESTIMATED joint cost of Rs. 66,000 in such a manner that 'Cost + Profit = Selling price' . . . fetches a selling price of Rs. 13.75(P) & Rs. 8.75(Q)*

Despite company having estimated joint cost Rs. 66,000 only, the joint cost actually incurred turned out to be Rs. 88,000 (i.e. Rs. 22,000 extra) 😞😞😞

### **Question Game!!**

- How much ever additional Joint Cost, which joint product was responsible for it? P or Q?  
Ans - Obviously both !!
- So additional joint cost of Rs. 22,000 should be charged to P or Q?  
Ans – Obviously both P & Q
- How much portion of additional joint cost should be apportioned to P & Q?  
Ans – Apportionment should be made in the same ratio in which estimated joint cost was originally apportioned i.e. 8 : 3 itself.

**Notes for Ques. No. 6**

In the given sum, by product B is manufactured incidentally, hence the name BY PRODUCT.

However, since the by product B is being sold after further processing with strict inventory checks, it should be treated at par with joint product M for the purpose of apportionment of joint cost.

Accordingly, joint cost should be apportioned between products M & B . . . .If you think this ways in this sum then .....

Where is it given in the question anywhere that by product B is *COMMERCIALY SOLD* i.e. *for a profit?????*Just because a product is sold after further processing, it does not become a joint product.

In fact, there are clear indications that ***by product should be treated as a BY PRODUCT itself***.---- wordings of the question “Net Realisable Value of By product B should be reduced from Cost...”

**What is the Net Realisable Value of by product B which should be reduced from the cost?**

- i. What should be reduced from the cost is not Net REALISED Value of by product B but is infact Net REALISABLE Value of by product B. Accordingly, the scrap value of entire qty. PRODUCED of by product B should be reduced from the cost. {Closing stock of by product B even though could not be sold in the current year, it would obviously be sold in some future year for sure! Scrap value of closing stock will be realised in that period}
- ii. What we have to reduce from cost is NET realisable value of by product B i.e. after deducting post separation manufacturing costs!

Net Realisable Value of by product B which should be reduced from the cost

$$= ( 0.20 - 0.05 ) * 1,000 \text{ units} = \text{Rs. } 150$$

**Which approach is better... (a) or (b)?**

Ans. Neither (a) nor (b). In fact, the right approach would be to reduce the NRV of by product B from joint process cost of Rs. 12,150 and apportion the remainder Rs. 12,000 to main product M.

### **Notes for Ques. No. 8**

The point noteworthy here is that we have also considered Admin O/H and S & D O/H pertaining to by product A as a relevant cost in the above calculation. It was so only because the question explicitly mentions that Admin O/H and S & D O/H pertaining to by product A will not be incurred if it is sold at split off point itself.

Had the question not mentioned anything of that sort, Admin O/H and S & D O/H being of a fixed nature in the given sum, would anyways have been incurred even if By product A was sold at split off point. In other words, Admin O/H and S & D O/H would have been irrelevant for the above calculations.