



EduTap

Summary Sheet

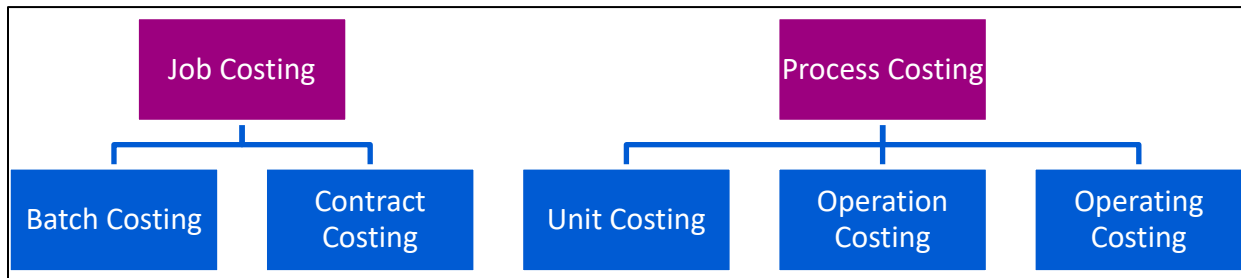
Job Costing and Batch Costing

**Job
Costing**

**Batch
Costing**

1 Introduction-Methods of Costing

As mentioned above, we have already discussed methods of costing previously. So, in this chapter let us revise some concepts and then we will move forward to understand Job and Batch Costing in detail.



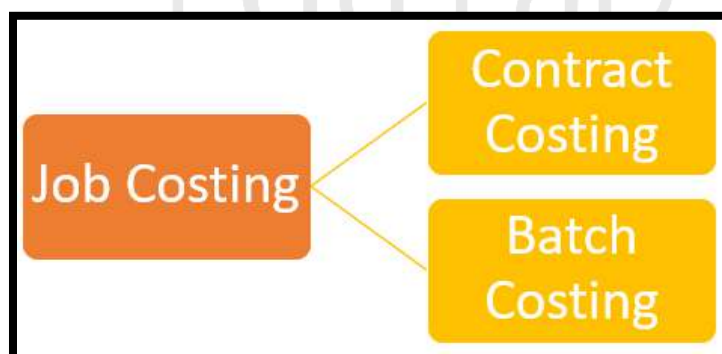
1.1 Job Costing

Job costing is applied where **work is undertaken to customers' special requirements**. There is no mass production. These jobs are generally dissimilar, of a non-repetitive nature, and are not comparable with each other. **Example:** Printing, Interior Decoration, Painting, etc.

In job costing, the **cost unit is taken to be a job or work order**, which represents a specific project or customer order. Each job is assigned a unique job number or code, and all costs associated with that job are separately collected and computed. Job costing is also known as **job lot costing or lot costing**.

For example, a construction company that builds custom homes would use job costing to calculate the cost of building each home. Each home would be treated as a separate job, and all costs associated with that job, such as materials, labor, and subcontractor costs, would be tracked and allocated to that job.

Job Costing can be further classified into **two** types:



1.1.1 Contract Costing

Contract costing is used when a project is large and takes a long time to complete. Examples of industries that use contract costing include **construction, civil engineering, and shipbuilding**.

In contract costing, the **cost of each contract is tracked separately and allocated to that contract**, including the cost of materials, labor, and overhead expenses. The total cost of the contract is then divided by the number of units produced or the length of time taken to complete the contract to arrive at the cost per unit.

For example, if a **hospital is being built**, the cost of materials such as steel, cement, and bricks, as well as the cost of labor and overhead expenses, will be tracked and allocated to that contract. The total cost of the contract will be calculated over the duration of the project, which may take several years. **The cost of the project will be divided by the number of hospital beds, floors, or square footage of the building to arrive at the cost per unit.**

1.1.2 Batch Costing

Batch costing is used when a group of **identical products is produced together as a batch**, and each batch of product is a cost unit for which costs are ascertained. Examples of industries that use batch costing include **bakeries, confectioneries, and garment manufacturing**.

In batch costing, the **total cost of producing a batch of products is tracked and allocated to the batch as a whole**, including the cost of materials, labor, and overhead expenses. The total cost of the batch is then divided by the number of units produced in the batch to arrive at the cost per unit.

For example, a tyre manufacturer produces a batch of 5,000 identical tires of a specific size and model. The cost of producing the batch, including the cost of raw materials, labour, and overhead expenses, is Rs. 2,50,000. To determine the cost per tire, the total cost of the batch is divided by the number of tires produced: $\text{Rs. } 2,50,000 / 5,000 = \text{Rs. } 50$. **Therefore, the cost per tire is Rs. 50.**

In the next batch, if the size or model of the tyre changes, then a separate batch cost will be computed for that specific batch, as the costs associated with raw materials, labour, and overhead expenses may differ from the previous batch. **This is the characteristic feature of batch costing, where costs are tracked and allocated to a specific batch or group of identical products.**

Till now, we have understood, Job Costing and its variations, contract costing and batch costing. Now, we will **discuss Process Costing and types of process costing**.

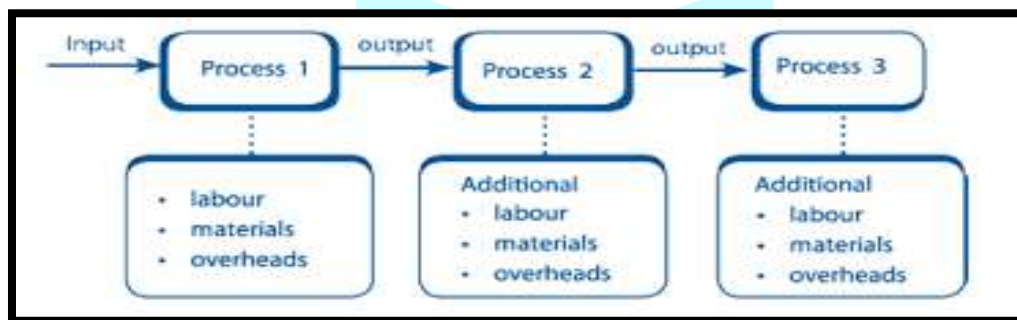
1.2 Process Costing

Process Costing is a costing method used in **mass production industries** that manufacture **standardized products in continuous processes of manufacturing**.

In process costing, **costs are accumulated for each process or department involved in the production** of the product. This involves tracking the costs associated with each stage of the production process, including the cost of materials, labor, and overhead expenses.

The raw material used in the production process passes through a number of processes in a particular sequence until it reaches the completion stage. **Each process or department in the production process is treated as a cost center**, and the costs incurred in each process are allocated to the products passing through that process.

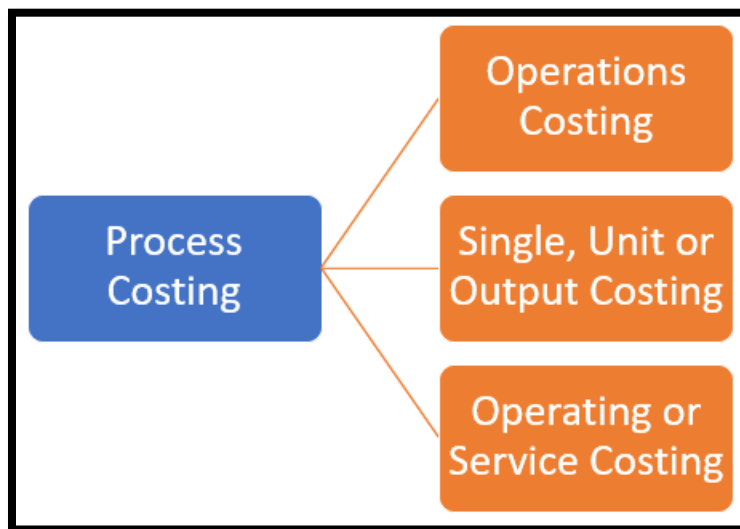
This can be understood from the following image:



However, to arrive at the **cost per unit**, the **total cost of a process is divided by the number of units produced in that process**. This allows for the calculation of the average cost per unit, which is used for pricing and profitability analysis.

For example, a company that produces canned goods would use process costing to calculate the cost of producing each can of food. The costs incurred in each process, such as cleaning, cooking, canning, and labeling, would be tracked and allocated to the products passing through that process. The total cost of each process would then be divided by the number of cans produced in that process to arrive at the cost per unit.

Process Costing can be categorized into **three** types:



Note: We will not be discussing types of process costing in detail. As, these are covered in detail in different chapter.

1.2.1 Operations Costing

This is a refinement and a more detailed application of process costing. A process may consist of several operations and operation costing involves cost ascertainment for each operation instead of a process. This method provides minute analysis of costs and ensures greater accuracy and better control.

1.2.2 Single, Unit or Output Costing

When production is uniform and consists of a single or two or three varieties of the same product or where the product is produced in different grades, costs are ascertained grade-wise. As the units of output are identical, the cost per unit is found by dividing the total cost by the number of units produced. **Example:** mines, quarries, brick kilns, steel production, flour mills, etc.

1.2.3 Operating or Service Costing

This method should not be confused with operation costing. It is used in undertakings which provide services instead of manufacturing products. **For example,** transport undertakings (road transport, railways, airlines, shipping companies), electricity companies, hotels, hospitals.

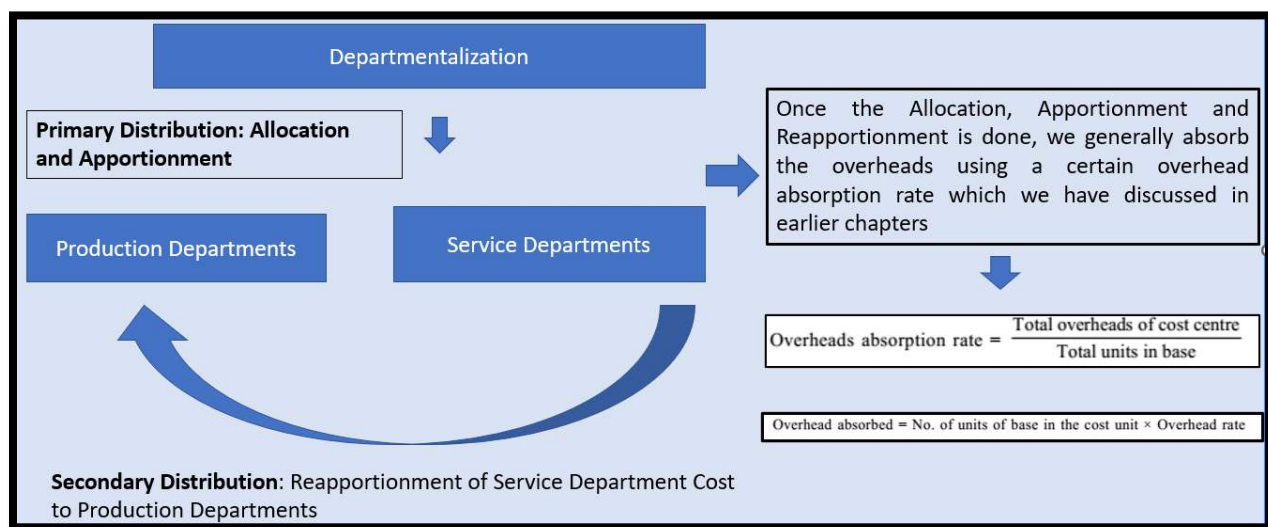
Till now we have understood that Job Costing is categorized into Batch Costing and Contract Costing and Process Costing is categorized as Unit Costing, Operation Costing and Operating Costing. Now let's start our discussion on the topic of job costing.

2 Job Costing

Theoretically, the scope of Job Costing and Batch Costing is very limited. Moreover, the implementation remains the same as we discussed in previous chapters. So, here before we learn more about job costing, first let's do a recap, and if you recall this, this chapter will seem very simple. If you face any difficulty in the recap, then go through the previous chapter in which you are facing difficulty.

2.1 Recap

Now, before going further, we would like you to know that whatever you are going to study in this chapter, theoretically it is less and implication wise it remains the same as what we have discussed in the earlier chapters. So please go through the following image:



Earlier we have discussed that basically, we need to distribute overheads. So, the distribution of overheads starts with in primary distribution in which we basically allocate and apportion the overheads into production and service departments as per their usage.

So, we allocate and apportion the overheads to production department and service department under primary distribution and then secondary distribution in which the overheads allocated or apportioned to service department are again reallocated to the production department. Because our main objective is to find the cost per unit and therefore all these overheads need to be allocated to the production department.

So, once the allocation, apportionment and reapportionment is done, we generally absorb the overheads using a certain overhead absorption rate. The formula is given in the image above.

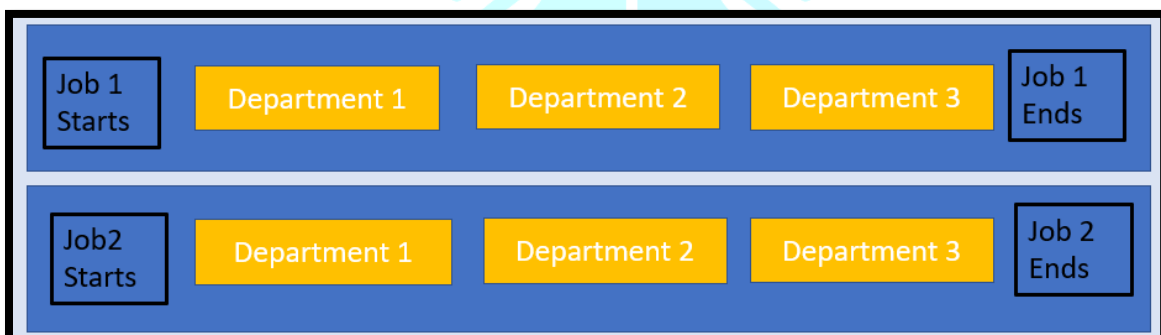
If you have understood this then job costing will become very easy for you to understand. But in case you are not able to understand we would suggest you to please go through previous chapters as it will not only help you in this chapter but the upcoming chapters as well.

3 Cost Sheet and Overhead Absorption

Like what we have discussed in earlier chapters, in Job Costing we shall prepare a Cost sheet for a Job. So, in job costing we try to find the cost of each job. Each job order is asymmetrical to other due to specific and customized requirements. To ascertain cost of a particular job, it is necessary to record **all the expenditure related with a job separately**. For this purpose, **Job Cost card is used. Job cost card is a cost sheet**, where the quantity of materials issued, hours spent by different class of employees, amount of other expenses and share of overheads are recorded. This is helpful in knowing the total cost, profitability etc. of a job.

Overheads assigned to departments shall be absorbed by the Job based on certain overhead absorption rate using some base and usage of that base by that Job.

Let's discuss this with an example. Suppose there are two jobs Job 1 and Job 2. These jobs are processed from various departments 1,2 and 3:



$$\text{Overheads absorption rate} = \frac{\text{Total overheads of cost centre}}{\text{Total units in base}}$$

$$\text{Overhead absorbed} = \text{No. of units of base in the cost unit} \times \text{Overhead rate}$$

So, Total Overheads for Department 1 is 100 Rs. and overhead absorption rate is based on machine hours. Department 1 has 100 machine hours and Job 1 has 30 machine hours, then **Overhead absorption rate = 100/100 = 1 Rs/machine hour. For Job 1 it shall be 30* 1 = 30 rupees.**

4 Job Order Costing

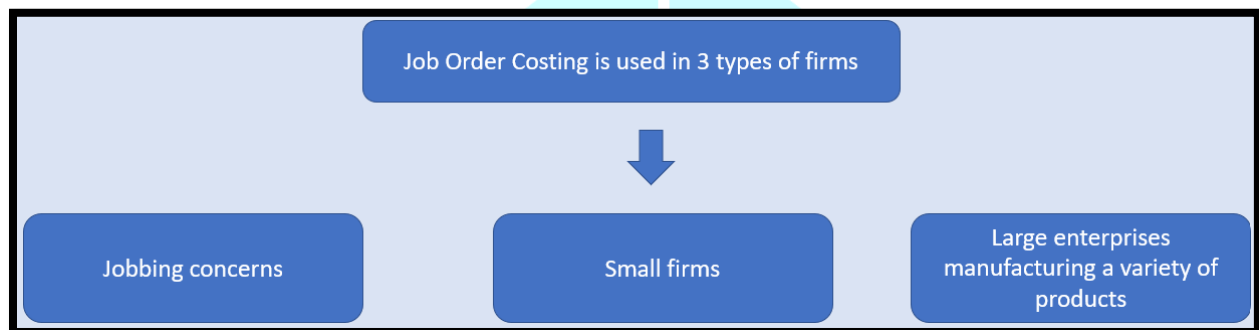
The category of basic costing methods which is applicable where the work consists of separate Jobs each of which is authorized by specific customer requirement. Job order costing is a costing method which is used to determine the cost of manufacturing each product. This costing method is usually adopted when the manufacturer produces a variety of products which are different from one another and needs to calculate the cost for doing an individual job.

Other Names of this method:

1. Specific order costing
2. Production order costing
3. Job lot costing
4. Lot costing

Every order in job costing is separate and it is not essential that the same manufacturing operations be carried out or the same materials be utilized in respect of each. In the job costing system, the cost unit is the Job itself.

Example: Job costing is applicable to engineering concerns, specific order furniture making, machine manufacturing industries, repair shops, automobile garages, interior decoration, machine tools and several such other industries where jobs or orders can be kept separate.



Job order costing is commonly used by **jobbing concerns, small firms, and large enterprises that manufacture a variety of products**. Let us understand how job order costing is used in each of these scenarios:

Jobbing Concerns:

- Jobbing concerns manufacture a variety of **products according to customer's specifications** and do not generally confine their activities to producing uniformly any specific product for sale in the market.

- The jobs, products or **services are dissimilar or unique and non-repetitive having different specifications** and methods of manufacture, and each one requires different types, sizes and quantities of materials and equipment's and utilizes different labor hours
- Job order costing is ideal for jobbing concerns because it allows them to track the costs of materials and labor for each unique job. By doing so, they can accurately calculate the cost of each job and adjust pricing accordingly. Hence Jobbing Concerns need to use Job Order Costing
- **Examples** include printing shops, machine shops, and custom furniture makers.

Small Firms:

- Though small firms produces some products which are used on relatively mass scale but no product can have a run long enough to be established as a standard process.
- **On account of the frequent changes from one product to another**, job costing would be suitable for determining the cost of each lot of products.
- **For example**, a small bakery that produces custom cakes and pastries can use job order costing to track the cost of materials and labor for each order. This can help the bakery determine the profitability of each order and make pricing decisions accordingly.

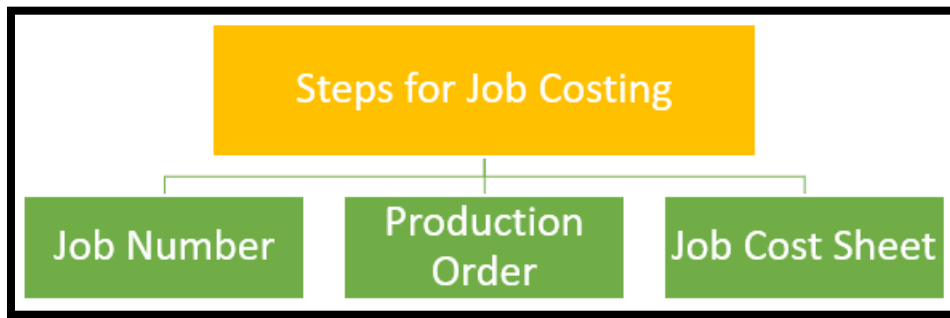
Large Enterprises manufacturing variety of products:

- A single department would be manufacturing several products, perhaps all at a time, so that none of the departments is specialized for continuous runs of product lines. As definite process departments cannot be established, job costing is more suitable in such cases
- **For example**, an automobile manufacturer that produces multiple models of cars can use job order costing to track the cost of materials and labor for each car model. This can help the manufacturer determine the profitability of each model and make decisions about production and pricing.

Note- Jobbing Concern is an ideal Case of Job Order Costing. Small Firms and Large Enterprises manufacturing a variety of Products may use Job Order Costing as per the suitability of this method.

5 Procedure/ Steps for Job Costing

Now we will discuss the steps for job costing:



1. **Job Number:** When an order has been accepted, an individual job number must be assigned to each job so that separate jobs are identifiable at all stages of production. Assignment of job numbers also facilitates reference for costing purposes in the ledger and is conveniently short for use on various forms and documents.

2. **Production Order:** The production control department then makes out a Production Order, thereby authorizing to start work on the job. The copies of production order are sent to:

- i. All departmental foremen concerned with the job
- ii. Storekeeper for issuance of materials and Cost Department for accounting of the Job
- iii. Tool room for an advance notification of tools required

Format of Production Order:

PRODUCTION ORDER			
Name of the Customer.....		Job No.....	
Date of Commencement.....		Date.....	
Date of Completion.....		Bill of Material No.	
Special Instructions.....		Drawing attached Yes/No. ...	
<i>Quantity</i>	<i>Description</i>	<i>Machines to be used</i>	<i>Tools required</i>
(Sign)..... Production authorised by : Head of Production Control Dept.			

3. **Job Cost Sheet:** The unique accounting document under job costing for each job is the job cost sheet. Cost accountant prepares a job cost sheet on which he records the cost of materials used and the labor and machine time taken.

Job cost sheets are not prepared for specified periods but they are made out for each job regardless of the time taken for its completion. However, material, labor and overhead costs are posted periodically to the relevant cost sheet.

Format of Job Cost Sheet:

Job Cost Sheet											
Customer.....						Job No.....					
Date of Commencement.....						Date of Completion.....					
Material Cost			Labour Cost				Factory Overhead (Absorbed)				
Date	Material Req. No.	Amount ₹	Date	Hours	Rate ₹	Amt. ₹	Dept	Hours	Rate ₹	Amt. ₹	
Total			Total				Total				
Profit/Loss			Cost Summary								
Price Quoted		₹	Material								₹
Less: Cost		Labour								
Profit or Loss		Prime Cost								
		Factory overhead								
		Adm. overhead								
		Cost of Production								
		Selling and dist overhead								
		Total Cost								

6 Advantages of Job Costing

- In job costing, **the cost of each job or order is ascertained separately**, which means that the costs incurred in producing a specific job or order are tracked and recorded separately. This helps in determining the profitability of each job, as the revenue generated from the job can be compared with the cost incurred to produce it. This

information can be used to make decisions about pricing and resource allocation in the future.

- Another advantage of job costing is that it helps in **identifying the source of spoilage and defective work**. As each job is tracked and recorded separately, any issues with the production process can be easily identified and traced back to a specific job or product. This helps in taking corrective action and reducing waste and rework.
- **Job costing is particularly suitable for cost-plus contracts where the selling price is determined directly on the basis of costs**. In such contracts, the customer agrees to pay a certain percentage above the actual cost of the job, and job costing helps in accurately determining the cost of the job. This ensures that the price charged to the customer covers all costs incurred in producing the job and results in a fair profit for the company.

7 Limitations of Job Costing

- Job costing is comparatively **more expensive** as more clerical work is involved in identifying each element of cost with a specific job: Job costing involves tracking the cost of materials, labor, and overheads for each individual job or project.
- With the increase in the clerical processes, **chances of errors are enhanced**: The accuracy of job costing depends on the accuracy of the information recorded for each job. As the number of clerical processes involved in job costing increases, so does the chance of errors.

8 Practice Problems

Please note that the main idea of providing practice problems is to make you understand the practicality of the concepts.

Question 1- A factory uses job costing. The following data are obtained from its books for the year ended 31 December 2011.

	₹		₹
Direct materials	90,000	Selling and distribution overheads	52,500
Direct wages	75,000	Administration overheads	42,000
Profit	60,900	Factory Overheads	45,000

(a) Prepare a Job Cost Sheet indicating the Prime cost, Works cost, Production cost, Cost of sales and the Sales value.

(b) In 2012, the factory received an order for several jobs. It is estimated that direct materials required will be ₹1,20,000 and direct labor will cost ₹75,000. What should be the price for these jobs if factory intends to earn the same rate of profit on sales. The factory recovers factory overheads as a percentage of direct wages and administration and (selling and distribution overheads + 15% Increase) as a percentage of works cost, based on cost rates prevailing in the previous year.

Solution-

So, let's start with the first part of the question:

Initially, we will create the format and then we just **have to put the values in the format**. In this question, we have been provided direct information for Direct Material and Direct Wages. Adding these we will get our Prime Cost. Now, we will add Factory Overheads as mentioned in the question to ascertain the works cost. Similarly, we will add administration overheads to ascertain the cost of production. And then we will add selling and distribution overheads to ascertain the cost of sales.

As, we have calculated the cost of sales. We can add profit as mentioned in the question to get the sales value as 3,65,000. **Please refer to the following statement:**

Production Statement		
<i>for the year ended 31 December 2011</i>		
	₹	
Direct materials		90,000
Direct wages		75,000
	Prime Cost	1,65,000
Factory overheads		45,000
	Works Cost	2,10,000
Administration overheads		42,000
	Cost of Production	2,52,000
Selling and distribution overheads		52,500
	Cost of Sales	3,04,500
	Profit	60,900
	Sales Value	3,65,400

So, the above statement can be made easily, you just need to put the values as per the format. Now, moving on to the second part of the question. But before going further we must need to calculate rates:

Calculation of Rates

1. % of factory overheads to direct wages	$= \frac{45,000}{75,000} \times 100 = 60\%$
2. % of administration overheads to works cost	$= \frac{42,000}{2,10,000} \times 100 = 20\%$
3. Selling and distribution overheads	₹52,500
Add 15% increase	<u>7,875</u>
	<u>60,375</u>
Selling and distribution overhead % to works cost	$= \frac{60,375}{2,10,000} \times 100 = 28.75\%$
4. % of profit to sales	$= \frac{60,900}{3,65,400} \times 100 = 16.67\% \left(\frac{1}{6} \text{ of sales or } \frac{1}{5} \text{ of total cost} \right)$

Notes:

1. % of factory overheads to direct wages means that it is a ratio that measures the amount of factory overhead costs incurred relative to the direct wages paid to employees.

The formula for calculating this ratio is:

Factory Overheads to Direct Wages Ratio = (Factory Overheads / Direct Wages) x 100%

2. Similarly, the formula to calculate % of administration overheads to works cost is:

Administration Overheads to Works Cost Ratio = (Administration Overheads / Works Cost) x 100%

3. Also, we have to calculate the selling and distribution overheads + 15% Increase as a percentage of works cost. So, to calculate this we have to increase selling and distribution overhead by 15%. And then we have to calculate the % of selling and administration overheads to works cost by using the formula:

Selling and Administration Overheads to Works Cost Ratio = (Selling and Administration Overheads (incl. of 15% increase) / Works Cost) x 100%

4. We also have to calculate the % of profit to sales can be easily calculated by the following formula:

% of Profit to Sales = (Net Profit / Sales) x 100%

Also, **CP (Cost Price) = Sales - Profit**

Now, as we have calculated the rates. So, now we can create the Job Cost Sheet with the estimated cost and price:

Job Cost Sheet		
<i>(Statement showing Estimated Cost and Price of Jobs in 2012)</i>		
Direct materials		₹ 1,20,000
Direct wages		75,000
	Prime Cost	1,95,000
Factory overheads (60% of direct labour)		45,000
	Works Cost	2,40,000
(Administration overheads (20% of works cost)		48,000
	Cost of Production	2,88,000
Selling and distribution overheads (28.75% of works cost)		69,000
	Total Cost	3,57,000
Profit (1/5 of cost)		71,400
	Selling Price	4,28,400

(Direct Materials and Direct wages are already provided in the second part of the question. And then with the help of calculated rates we have ascertained Factory Overheads, Administration Overheads and Selling and Distribution Overheads and Profit.)

9 Batch Order Costing

This is a **variation of job costing**. While job costing is concerned with costing of jobs that are made to a customer's requirements, batch costing is used **when production consists of limited repetitive work and a definite number of articles are manufactured in each batch to be held in stock for sale to customers generally**.

Batch order costing is particularly useful for companies that **produce products in batches with similar characteristics**, such as size, shape, or color. It allows for the efficient allocation of costs to each batch of products and enables managers to track the profitability of each batch.

Basic Features of Batch Costing

(a) **Each batch is treated as a cost unit.**

(b) All costs are accumulated and ascertained for each batch.

(c) A separate Batch Cost Sheet is used for each batch and is assigned a certain number by which the batch is identified.

(d) The cost per unit is ascertained by dividing the total cost of a batch by the number of items produced in that batch.

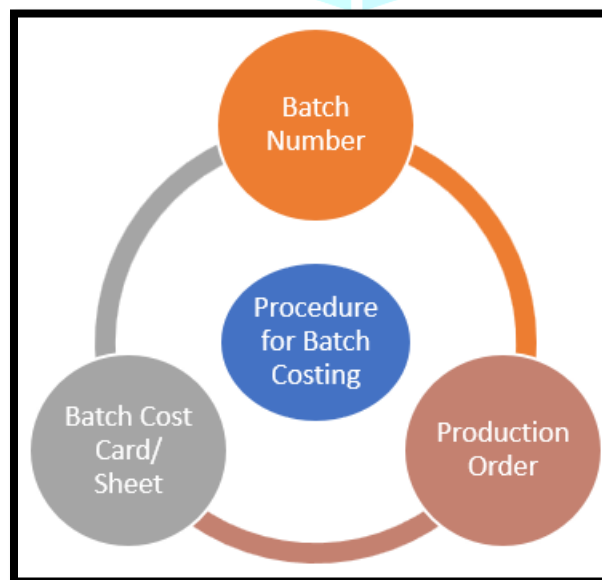
Application of Batch Costing:

Batch Costing is applied in those industries where the similar articles are produced in definite batches for internal consumption in the production of finished products or for sale to customers generally. It is generally applied in

1. Read made Garments Manufacturing Industries
2. Pharmaceutical/ Drug Industries
3. Spare parts and Components Manufacturing Industries
4. Toys Manufacturing Industries
5. Tyre and Tubes Manufacturing Industries
6. Shoes Manufacturing

10 Procedure for Batch Costing

The procedure for batch costing involves several steps, including assigning a unique batch number, creating a production order, and preparing a batch cost card.



1. **Batch Number**- Each batch of products must be assigned a unique identification number or code that distinguishes it from other batches. This helps to ensure accurate tracking of costs and enables managers to monitor the performance of each batch.
2. **Production Order**- The production order is released signaling the start of production and related allocation of resources such as material, tools, labor etc.
3. **Batch Cost Card/ Sheet**- The Batch cost card is maintained for each batch to records all the costs related to production in that batch. When a batch is completed, the total cost of the batch is divided by the quantity produced in the batch to arrive at the cost per unit.

Now let us discuss some practice problems related to Batch Costing:

Question 4- Component 89-X is made entirely in cost centre

Material cost is 6 paise per component and each component takes 10 minutes to produce. The machine operator is paid 72 paise per hour, and the machine hour rate is ₹ 1.50.

The setting up of the machine to produce component 89-X takes 2 hours 20 minutes. On the basis of this information, prepare a comparative cost sheet showing the production and setting up cost, both in total and per component assuming a batch of (a) 10 components, (b) 100 components and (c) 1,000 components, is produced.

Solution-

Comparative Cost Sheet			
<i>Component 89-X</i>			
<i>Particulars</i>	<i>Batch size in components</i>		
	10	100	1,000
	₹	₹	₹
Setting up Cost			
Labour 2 hrs. 20 mts. at 72 paise per hour	1.68		
Overhead 2 hrs. 20 mts. at ₹1.50 per machine hour	<u>3.50</u>	5.18	5.18
		5.18	5.18

Production Cost			
Material cost @ 6 paise per component	0.60	6.00	60.00
Wages @ 72 paise per hour			
For 10 components 1 hr. 40 mts.	1.20		
For 100 components 16 hrs. 40 mts.		12.00	
For 1,000 components 166 hrs 40 mts.			120.00
Overheads @ ₹1.50 per machine hour			
For 10 components 1 hr. 40 mts.	2.50		
For 100 components 16 hrs. 40 mts.		25.00	
For 1,000 components 166 hrs. 40 mts.			250.00
Total Cost	9.48	48.18	435.18
Cost per component (Total cost ÷ No. of Components)	0.94	0.48	0.44

Note- The questions are based on the format and then only calculation. So, the explanation provided in the solution is sufficient. However, **if you have any doubt, please post it in the discussion forum, we will be happy to help you.**

11 Economic Batch Quantity (EBQ)

In the previous question, it is seen that when batch size increases, the total cost per component decreases. It is due to the **fixed nature of setting up cost which remains unchanged with the increase or decrease in the batch size.**

So should the cost per component keeps on decreasing with increase in batch size. The answer is no as there are two types of costs:

- 1. Set Up Cost:** This is the cost of setting the machine and the tools for production of a batch. This is of a fixed nature. Therefore, when the size of the batch is large, setting-up cost per article in the batch is lower.
- 2. Carrying Cost:** The cost to store raw material and finished goods, interest on capital invested etc. Larger size of a batch leads to higher carrying costs.

So, there must be a level of quantity at which the sum of these costs is minimum. **Such a level is called Economic Batch Quantity (EBQ) and this level both the cost are equal.**

$$\text{E.B.Q} = \sqrt{\frac{2AS}{C}}$$

Where, E.B.Q = Economic Batch Quantity
A = Annual Demand
S = Set up Cost per batch
C = Carrying Costs per unit per year

Alternatively, it can be written as:

$$\text{EBQ} = \sqrt{\frac{2 \cdot U \cdot S}{C}}$$

EBQ = Economic Batch Quantity
U = No. of units to be produced in a year
S = Set-up costs per batch
C = Carrying cost per unit of production.

Let's discuss an example:

Question- Calculate EBQ from the following information:

U = Production per year = 12,000 units

S = Set-up costs per batch = `150

C = Carrying cost per unit per year = `0.20

Solution-

$$\text{EBQ} = \sqrt{\frac{2 \times 12,000 \times 150}{0.20}} = 4,243 \text{ units}$$