

## **CHAPTER 13.01**

### **COST AND MANAGEMENT ACCOUNTING (PART 1)**

#### **Proposed instructions – learning process**

- Accounting can be divided into two types. They are
  1. Financial accounting
  2. Management accounting
- Cost accounting is discussed as a sub section of Management Accounting.
- Management Accounting means provision of relevant information what will assist management to make decisions by collecting and arranging relevant data.
- Association of Chartered Certified Accountants defines management as follows,  
“Providing management accounting technique to help you support business to plan, control and monitor performance.”
- Management accounting means providing financial and non-financial information for all the managerial levels.

#### **Need of management accounting can be summarized as follows.**

- Provide information for management decisions.
- Identify differences and make necessary corrections by comparing estimated situations and Actual situations.
- Provide appropriate a solution in order to solve problems arises in operational activates.
- Preparation of reports and evaluation of efficiency of different sections of the business.
- Provide past and future situations in order to make future plans.

#### **Management duties to be considered in making management decisions.**

- Provide financial accounting and cost accounting information to managers.
- Classifying an analyzing of information collected.
- Arrange financial, cost data and data collected from other areas according to the requirement of the managers.
- Preparation of reports from the summarized data.
- Preparation of budgets for management activities.
- Preparation of reports by comparing budgeted and Actual Circumstances.

### **Different base, criteria identifying dissimilarities between management and financial accounting**

Basis/criteria	Management Accounting	Financial Accounting
Parties who use information	Management/internal parties	Both external and internal parties.
Nature of information	Monetary and non-monetary information which helps management to make decisions.	Information which can be measured in monetary terms.
Legal requirement	No Legal requirement	Legal requirement
Time to be considered	Present and future information	Past activities
Duration covered by the report	No specified time period for report. Reports prepared based on different departments	Reports prepared for an accounting period
Application of accepted principles and concepts	Based on management requirement	Should prepare according to Sri Lanka Accounting standards.
Reporting entity	The whole organization is not considered at once. Each area of department considered separately.	Reports prepared as one entity.
Relationship between other areas	Information provided to economics financial and information statistics beyond accounting	Limited only accounting

### **Assignment 01**

1. What are the main types of accounting?
2. Explain the meaning of management accounting
3. What are the management duties to be considered in making decisions?
4. Differentiate management and financial accounting based in criteria.

### **Cost concepts**

- **Cost**  
Value of economic resources sacrificed in order to purchase to provide service
- **Cost unit**  
A quantitative measurement used to calculate cost of a product or service.
- **Cost centers**  
It is a place, activity, equipment or a person in relation to a cost unit to identify and management cost.

Examples of cost units in different industries.

Industry/Enterprises	Cost Unit
Printing	Per job or square feet
Transport	Per ton Km or per passenger Km
Hospital	Per patient-day
Gas	Per cubic meter
Road contractors	Per Km/per mile
Hotel	Bed night
Electricity	Per kilo watt-hour
Readymade garments	Per garment
Petrol and other fuel	Per liter
Bakery	Per bread
Educational institution	Per student/per batch
Water supply	Per liter/per gallon
Cement manufacturing	per tone
Brick-making	1000 bricks

### Classification of cost

It can be classified according to the need of management.

- **Cost classification for stock valuation.**  
Cost accounting provides information in order to value inventories. Cost can be classified as follows,
  - Product cost
  - Period cost
- **Product cost means total cost incurred to produce goods or services.**  
A cost which can be identifiable with a product, changes with the volume of production are known as direct cost (prime cost)

A cost which can't be identifiable with a product, incurred in common, do not change with the volume of production. Known by the name of indirect production cost (production overheads).

Cost which are debited to profit and loss account (income statement) against income of a particular period known by the name of period cost.

### Cost classification for decision making

- Behavior of a cost should be identified in order to prepare budgets, profit planning, preparation and operating of plans for financial control cost be classified and follows,
  - ❖ Variable and fixed deposits
  - ❖ Relevant and irrelevant cost
  - ❖ Sunk cost
  - ❖ Opportunity cost

- Any cost that changes directly in proportion to the volume of production, activity level or sales volume known by the variable cost, variable cost per unit is a fixed value. Whereas total variable cost varies with the level of production or sales volume.
- Any cost which does not change with the activity level or volume of sales known by the name fixed costs, total fixed costs do not change but unit fixed cost changes with the activity level or volume of sales.
- If any cost directly relevant to a decision is known by the name relevant costs, and other cost which are not discussed under relevant costs known by the name irrelevant costs.
- Irrelevant cost already incurred as a result of a past decision made by the management known but the sunk cost.
- Next best return forgone when selecting best alternative from several alternatives known by the name opportunity costs.

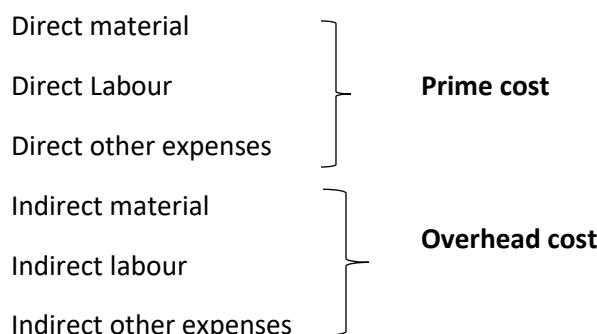
#### **Cost classification for controlling purpose.**

Classification of cost based on responsibilities of managers to minimize or to control the cost. And thereby can be clarify as follows,

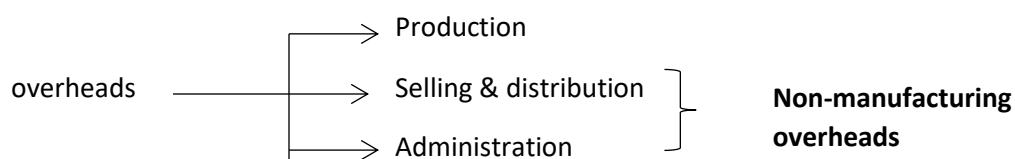
- Controllable cost
- Uncontrollable cost

Any cost behaves within the responsibility of manager of an organization is known by controllable cost. Whereas any cost which do not behaves with the responsibility of managers of an organization is known by uncontrollable costs.

#### **Alternative presentation of “cost classification for stock valuations”**



Prime cost + overheads = total cost

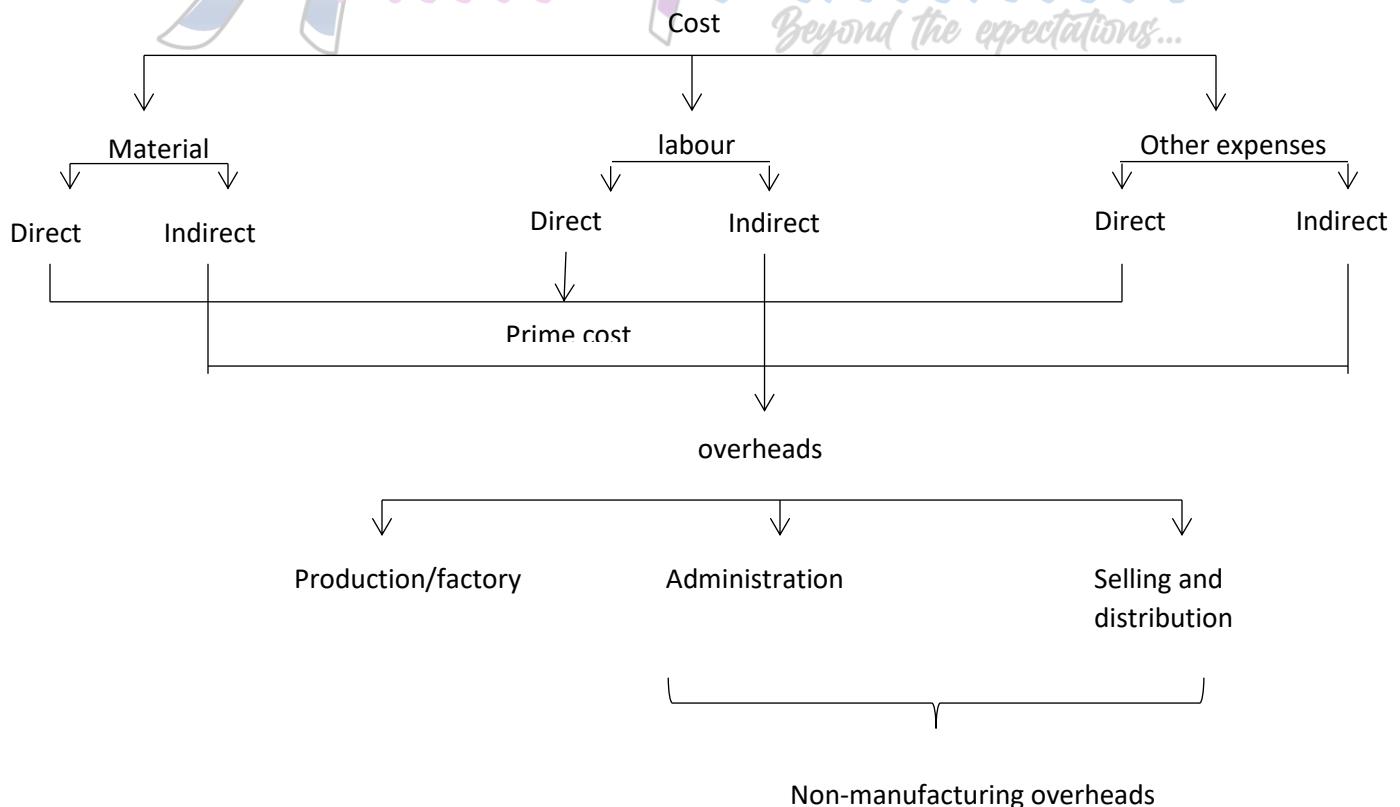


Prime cost + production overheads = production cost/factory cost.

### Alternative presentation of “cost classification for stock valuations

	Rs.
Direct Material	X
Direct Labour	X
Direct other expenses	X
Prime cost/total direct cost	<u>X</u>
Production overheads/factory overheads	<u>X</u>
Total production cost/factory cost	<u>X</u>
Selling, distribution and administrative overheads	<u>X</u>
Total cost/full cost	X
Profit margin	X
<b>Selling price</b>	<b>X</b>

### Alternative presentations of “cost classification for stock valuation”



**Assignment 02**

What is the cost unit used in following cost centers:

- A bakery
- Hospital
- An electricity supply organization
- A cinema

**Assignment 03**

"Lak sam company" is a firm manufacturing travelling bag. Given below are some cost concepts under which the costs of this company can be classified.

- Variable cost
- Conversion cost
- Opportunity cost
- Total product cost
- Direct cost
- Sunk cost
- Prime cost
- Production overhead cost
- Fixed cost
- Period cost
- Direct material cost

Fill in the blanks in the sentence given below using the above cost concepts most appropriately. (In answering, it is sufficient to write the appropriate number and write the cost concept against it.)

- The leather used in the manufacture of bags is called (1) ..... and classified as a (2) ..... . in terms of cost behavior, the cost of leather could also be classified as a (3) .....
- In the process of manufacturing bags, all costs incurred except their direct materials cost is called (4) .....
- Taken together, direct material, direct labour and direct expenses incurred to produce travelling bags is named (5) .....
- Electricity expenses incurred in operating the machines used in manufacturing the bags is a (6) .....
- Without manufacturing bags, the company could have deposited these funds in a bank and earned interest. The interest that could have been earned but foregone by manufacturing bags is called (7).....
- The monthly salary of the company's General Manager can be classified as a (8) ..... in terms of cost behavior, this expense could also be classified as a (9) .....
- Costs incurred in the production of all bags during a period is called (10).....

### Assignment 04

Cost items of a company which manufactures different garments are given below.

- 1) Cost of fabrics
- 2) Depreciation of office equipment
- 3) Monthly salaries of sewing machine operators
- 4) Cost of quality control
- 5) Royalty payments on sales
- 6) Lubricants used for sewing machines
- 7) Sales commission
- 8) Freight charges for exporting of garments
- 9) Director's fees
- 10) Depreciation of sewing machines

**Required:**

Classification of each of the above items into the following categories by marking a **tick** at appropriate cages as explained below. (**Non – manufacturing cost elements are not required to be classified as 'direct' or 'indirect'.**)

Cost Items no.	Direct cost (D) or Indirect cost (IND)		Variable cost (VC) or Fixed cost (FC)		Manufacturing cost (M) or Non- manufacturing cost (NM)	
	D	IND	VC	FC	M	NM

### Assignment 05

#### Activity 01

State the relationship which is true?

- A. Prime cost = direct material cost + direct labour cost + direct other expenses.
- B. Total overhead cost = production overhead cost + non production overhead cost.
- C. Total production cost = prime cost + factory overhead cost.
- D. Gross profit = sales – cost of goods manufactured
- E. Net profit = gross profit + other income – non manufacturing overheads.

- (1)A,B,C only
- (2)A,B,D only
- (3)C & D only
- (4)B & C only
- (5)A,B,C,D,E all

### **Activity 02**

Indicate the false statement regarding the behavior of fixed and variable cost.

- 1) Total variable cost is changed proportionately to the changes of operational levels.
- 2) Variable cost of a one unit remains constant when operational level changes.
- 3) The total fixed cost remains constant, in a given range of operational level
- 4) The cost of a unit remains constant in a given range of operational level
- 5) The fixed cost of one unit decreases when the operational level is increased within a given level of operational range.

### **Activity 03**

Which statement is true in relation to overhead?

- 1) There is no value addition to production from overhead cost
- 2) All type of overheads varies with changes in production
- 3) Overheads consist of materials, Labour and other expenses which cannot be easily identified with the product
- 4) Overhead cost is a component of the prime cost
- 5) Production overheads are controllable while non- production overhead cost are not controllable.

### **Activity 04**

Out of the following what is the item which generates information from management accounting system.

- 1) Budgets, Daily material consumption records, Bank reconciliation statements.
- 2) Published financial statements, Daily productivity reports, Daily labour utility reports.
- 3) Budget forecast, project evaluation reports, Bank reconciliation statements.
- 4) Budget forecast, Daily productivity reports, Project evaluation reports.
- 5) Published Financial statements, Sales forecast and break-even sales information.

### **Activity 05**

State the difference of Management Accounting and financial accounting regarding the following fields.

<b>Field</b>	<b>Management accounting</b>	<b>Financial accounting</b>
I. Time involved for attention		
II. Number of reporting times		

**Activity 06**

Give one example each for the under mentioned costing elements in relation to manufacturing of clay flower pots.

1. Direct labour .....
2. Overhead cost .....

**Activity 07**

Which of the following payments made to workers can be classified as direct wages?

- A- Assembly workers in a factory which assembles televisions
- B- A stores assistant in a factory store
- C- Masons in a construction company
- D- An audit clerk in a firm of auditors
- E- Manager of a bakery

- (1) A,C and D only
- (2) A and C only
- (3) A,B,C and D only
- (4) A.B.C and E only
- (5) A,B,C and D only

**Activity 08**

Production levels and unit cost of a product are given below.

Production levels (units)	Unit cost (Rs.)
500	100
600	90

Which of the following gives the variable cost per unit and total fixed cost respectively?

- (1) Rs.40 and Rs.30 000
- (2) Rs.10 and Rs.50 000
- (3) Rs.40 and Rs.54 000
- (4) Rs.10 and Rs.24 000
- (5) Rs.20 and Rs.34 000

**Activity 09**

A product to which the cost is ascertained can be recognized as a

- (1) Cost elements
- (2) Cost object
- (3) Cost center
- (4) Service cost center

(5) Production cost center

**Activity 10**

Which of the following statements is true ?

- (1) Manufacturing costs do not include overhead cost
- (2) All variable costs are direct manufacturing cost
- (3) Indirect labour cost is always a part of manufacturing cost
- (4) All overhead costs are charged to the profit and loss account
- (5) All direct costs are not variable costs.

**Assignment 06**

**Activity 01**

Distinguish following cost elements of a dairy product company as direct or indirect by making "tick" mark in the appropriate column assuming that the cost object is an ice cream.

Cost element	Direct cost	Indirect cost
Depreciation of ice cream making machine		
Fresh milk purchased		
Rates of the factory building		
Monthly salary paid to factory manager		

**Activity 02**

Fill up blanks in the table given below with appropriate values.

Production level (units)	Unit fixed Cost(Rs.)	Total variable Cost(Rs.)
.....	40	4000
100	32	.....

**Activity 03**

Which equation will determine the cost of production?

1. Prime cost + overhead cost
2. Raw material cost + fixed production overhead cost
3. Direct cost + variable overhead cost
4. Prime cost + overhead costs - non production overhead cost
5. Direct raw material cost + prime cost – variable production overhead

**Activity 04**

Cost unit is,

Cost of one manufactured unit

1. Any activity or thing for which a separate measurement of cost is required.
2. Objective is to reduce the cost of production
3. Cost element of a specific good or a service.
4. Institutional unit which operates by a manager

**Activity 05**

Which statement is correct in relation to management accounting?

1. Management accounting statement prepares according to the legal requirements.
2. Management accounting information's used by shareholders frequently.
3. It doesn't use to get internal decisions.
4. Scope of management accounting is broader than cost accounting.

**Activity 06**

The total production cost of a company were Rs.50 000 and 115 000. When production volumes were 8000 units and 20 000 units respectively. Capacity exceeds 10000 units an extra fixed cost of Rs.5 000 required. When they manufacture 15000 units what is the total manufacturing cost?

- (i) Rs.75000
- (ii) Rs.85000
- (iii) Rs.90000
- (iv) Rs.91250
- (v) Rs.96250

**Activity 07**

Which of following is not a product cost?

(1)	Power for the factory
(2)	Wages of factory workers
(3)	Materials used in the production
(4)	Advertising for a new product
(5)	Indirect materials used in the production

**Activity 08**

Which of the following can be classified as direct materials, if the cost object is a product?

- A- Material used in manufacturing of iron bars
- B- Lubricants used for the production machines
- C- Plastic used in manufacturing of calculators

(1)	A only
(2)	C only
(3)	A and B only
(4)	A and C only
(5)	All, A,B, and C only

**Activity 09**

The function of accounting that deals with the collection, allocation and control of cost is known as,

(1)	Financial accounting
(2)	Maintenance of control accounting
(3)	Cost accounting
(4)	Project evolution
(5)	Cash flow analysis

**Activity 10**

Which statement given below is/are true with regard to management accounting.

- A- It is a part of an organization's management information system.
- B- It is used by managers to plan and control an organization's operations.
- C- It proves information to external parties for decision making.

(1)	A only
(2)	B only
(3)	C only
(4)	A and B only
(5)	All, A,B, and C only

**Activity 11**

State two purpose of computing product cost

1. .....
2. .....

**Assignment 07**

The following cost were incurred by a company in relation to manufacturing of a product

	(Rs.)
Direct material used	150 000
Selling expenses	5 000
Indirect production wages	7 000
Administrative expenses	10 000
Depreciation of factory equipment	70 000

Direct labour cost	40 000
Overtime payments for factory workers	20 000
Indirect material used	45 000

What is the total product cost?

### Assignment 08

#### Activity 01

State whether statements given are **true or false**

1. All direct costs are variable costs. (.....)
2. Overheads is a component of prime cost (.....)
3. Cost center is a place where always they manufacture goods (.....)

#### Activity 02

Provide one example for each of the following cost elements of an entity which produces a number of bakery items Consider bakery items as cost object)

Direct materials .....

Indirect Labour .....

Indirect expenses .....

Indirect materials .....

#### Activity 03

The annual budgeted information of a firm, which produces a single product is given below.

The budgeted activity level of this firm for the next financial year is 10,000 units.

- Selling price per unit Rs. 100
- Prime cost per unit (all variable costs) Rs. 20
- Variable production overhead cost per unit Rs.15
- Sales agents commission 5% of the selling price.
- Fixed production overhead cost per unit Rs.12
- Fixed non production overhead cost per unit Rs.18

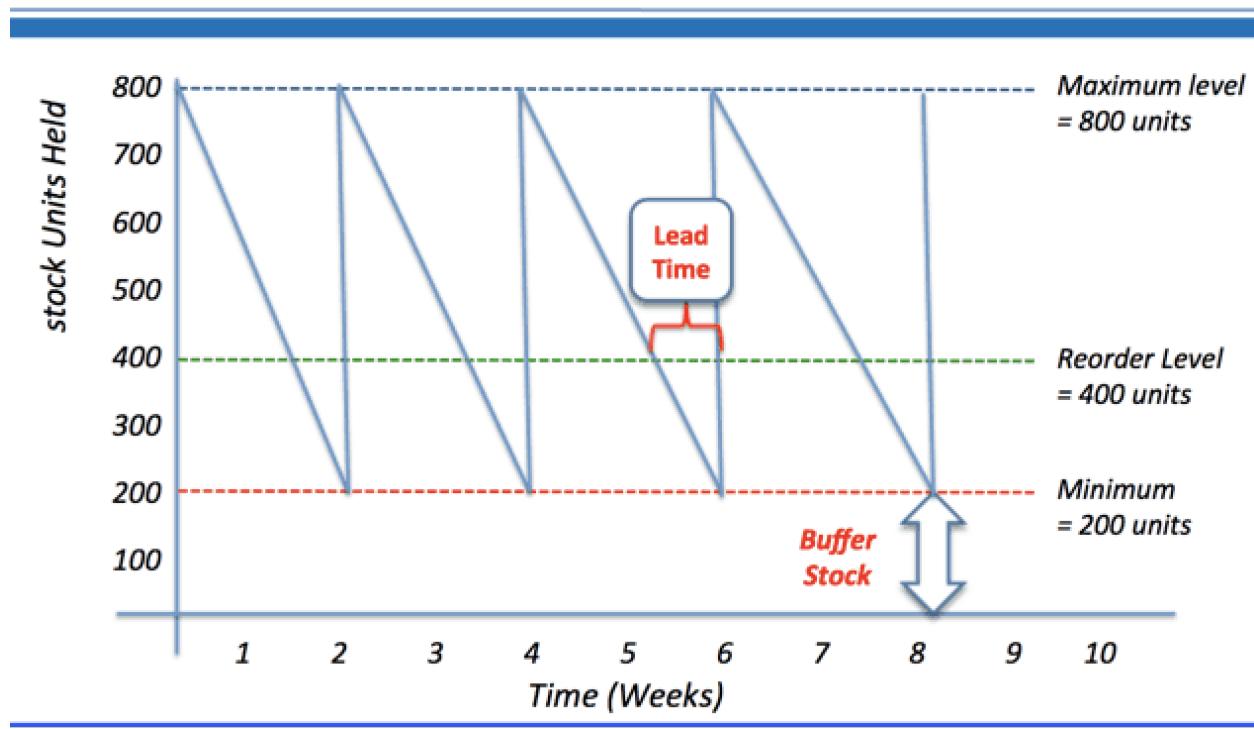
#### Calculate the following

At the activity level of 10,000 units

1. Production cost per unit
2. Total cost per unit
3. Variable cost per unit
4. Fixed cost per unit at an activity level of 6,000 units.

## Uses process of material control

### Example of Stock Control Chart



$$\text{Economic order quantity (EOQ)} = \frac{\sqrt{2 D C_o}}{C_h}$$

- 2 = Constant Amount
- D= Annual demand
- Co = Cost of ordering per hold
- Ch = Cost of holding per stock item per annum

$$\text{Re - order level (ROL)} = \text{Maximum consumption} \times \text{Maximum lead time}$$

**Maximum stock level = Re – order level (ROL) + Re – order quantity (ROQ)/ EOQ – (Minimum consumption x Minimum Lead time)**

$$\text{M1. Average stock level} = \frac{\text{Maximum stock level} + \text{Minimum stock level}}{2}$$

$$\text{M2. Average stock level} = \text{Minimum stock level} + \frac{\text{ROQ or EOQ}}{2}$$

**Minimum stock level = ROL – (Average consumption x Average lead Time)**

$$\text{Number of orders during the period} = \frac{\text{Annual Demand (D)}}{\text{ROQ or EOQ}}$$

$$\text{Annual ordering cost} = \frac{\text{Annual Demand (D)}}{\text{ROQ or EOQ}} \times \text{Co}$$

$$\text{Total Cost of Holding (TCH)} = \text{Ch} \times \text{Average stock} \left( \frac{\text{ROQ or EOQ}}{2} \right)$$

$$\text{Total Cost of Ordering (TCH)} = \text{Co} \times \text{No of orders} \left( \frac{\text{Annual Demand (D)}}{\text{ROQ or EOQ}} \right)$$

## Assignment 01

### Activity 01

From the following details of stored receipts and issues of material “EXA” in a manufacturing unit, prepare the stocks ledger using “Weighted Average” method of valuing the issues:

November

- 1 Opening stock 2,000 units @ Rs.5 Each
- 2 Issued 1,500 units to production
- 4 Received 4,500 units @ Rs.6.00 each
- 8 Issued 1,600 units to production
- 9 Returned to stores 100 units by production department (from the issues of November 3)
- 16 Received 2,400 units @ Rs. 6.50 each
- 19 Returned to the supplier 200 units out of the quantity (received on November 4)
- 20 Received 1,000 units @ Rs.7.00 each
- 24 Issued to production 2,100 units
- 27 Received 1,200 units @ Rs. 7.50 each
- 29 Issued to production 2,800 units

### Activity 02

“RM 001” is a raw material which is frequently used by “XYZ” PLC in its manufacturing process following data relates to such item for a three months period ending 31st March.

- |             |                                   |
|-------------|-----------------------------------|
| January 01  | - Opening stock balance           |
|             | - 600 units bought @ Rs.120 each  |
|             | - 300 units bought @ Rs.125 each  |
| January 06  | - Bought 200 units @ Rs.130 each  |
| January 15  | - issued 400 units                |
| January 16  | - issued 300 units                |
| January 24  | - bought 250 units @ Rs. 160 each |
| January 31  | - bought 100 units @ Rs. 170 each |
| February 10 | - issued 300 units                |
| February 20 | - issued 150 units                |
| February 28 | - Bought 300 units @ Rs.140 each  |
| March 10    | - Bought 200 units @ Rs.150 each  |
| March 20    | - issued 320 units                |

March 26 - issued 100 units

March 31 - bought 230 units @ Rs. 180 each

You are required to prepare the stores ledger under

1. FIFO Method

2. WAC Method

## Assignment 02

### Activity 01

The following data relate to a stock item

Annual usage	:	600 units
Cost of placing an order	:	Rs. 12
Price of material per unit	:	Rs. 20
Holding cost per item per annum	:	20% of unit price
Normal usage	-	50kg per week
Minimum usage	-	25kg per week
Re-order quantity	-	300kg
Re-order period	-	4 to 6 weeks

You are required to calculate

- a. Economic order quantity
- b. Re-order level
- c. Maximum stock level
- d. Minimum stock level
- e. Average stock level

### Activity 02

About 50 items are required every day for a machine. A fixed cost of Rs. 50 per order is incurred for placing an order. The inventory carrying cost per items accounts to Rs. 0.02 per day. The lead period is 32 days. Compute:

- (i) Economic order quantity
- (ii) Re-order level

### Activity 03

Materials X and Y used as follows:

Minimum usage - 50 units each per week

Maximum usage - 150 units ach per week

Normal usage - 100 units each per week

Ordering quantities X = 600 units

Y = 1,000 units

Delivery period X = 4 to 6 weeks

Y = 2 to 4 weeks

Calculate for each material:

- a) Minimum stock level
- b) Maximum stock level
- c) Re order level

### Assignment 03

Information relating to receipts and issues of an item of raw materials of Neon Company for a three month period was as follows;

01 July	received	200 units	@ Rs. 10 each
09 July	received	50 units	@ Rs. 11 each
18 July	issued	150 units	
05 August	received	80 units	@ Rs. 15 each
15 September	issued	120 units	

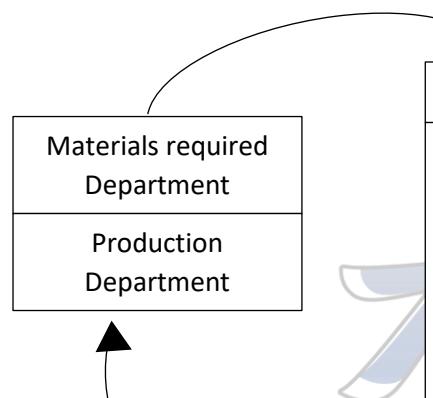
**Required:**

- 1) Record the above information in the stores ledger using the FIFO method.
- 2) Record the above information in the stores ledger using WAC method.

## Purchasing process of raw materials by a stores.

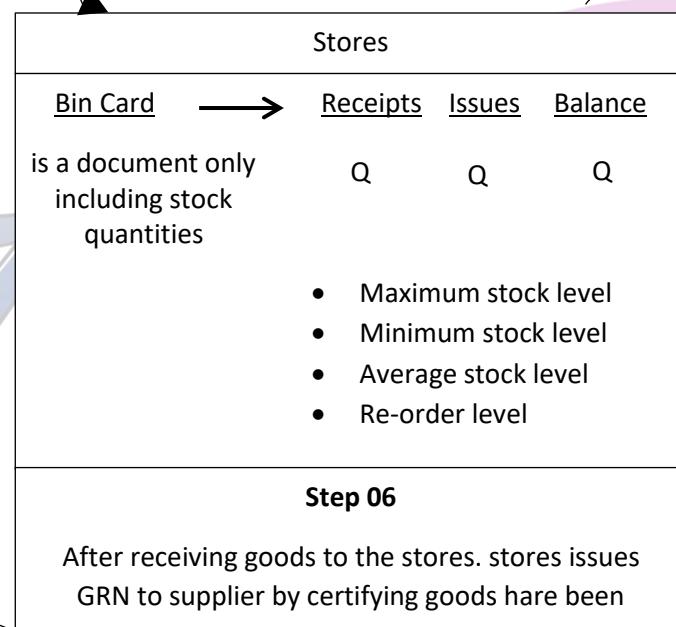
### Step 01

Requesting RM by issuing MR



### Step 02

Requesting to purchase RM from a supplier by issuing PRN



### Step 07

Issuing RM to production department based on MRN

### Step 04

Requesting to send the goods to the business by issuing PO

Purchasing Dep.

### Step 03

Selecting Supplier by tender basis  
Already registered suppliers  
Action method Internet

Selected Supplier

### Step 05

Goods have been delivered to the business by issuing GDN

- MRN – Maternal requisition note
- PRN – Purchas requisition note
- GRN – Goods requisition note
- PO – Purchase order
- GDN – Goods delivery note

### Step 08

Cash payments to suppliers after considering all the source documents.

- MRN / PRN / PO / GRN
- Inspection report

Stock acceptance Dep.

Inspection report

## Assignment 04

### Activity 01

State the purpose, department who issues or receive for each of the following source documents.

Source document	Issued by	Received by	Purpose
<ul style="list-style-type: none"> <li>• Material requisition note</li> <li>• Purchase requisition note</li> <li>• Tenders/ quotations</li> <li>• Purchase order</li> <li>• Delivery note</li> <li>• Goods received note</li> </ul>			

### Activity 02

Recommended methods used in issuing prices of materials

- (i) .....  
(ii) .....

### Activity 03

Following details are related to material

- Monthly stock consumption 500 units
- Price per unit Rs,80
- Cost per order Rs. 60
- Holding cost is 10% of material cost per unit.

Maximum consumption - 300 units per day

Average consumption - 200 units per day

Re order period - average of 10 days

Re order quantity - 3000 units

#### Calculate:

1. Calculate economic order quantity
2. Number of order per year
3. Re order level
4. Maximum stock level
5. Minimum stock level
6. Average stock level

## Assignment 05

- (i) Name the stock record which is maintained in order to ascertain the stock balance in quantity only.
- (ii) Name the document that acknowledges receipt of raw material by the stores. State two divisions to which copies of these documents are distributed.
- (iii) Name the document required by the stores in order to issue raw material to the production department.
- (iv) Name three source documents required in order to make the payment in respect of raw material received by the stores.

## Assignment 06

Mohideen Ltd. Manufacture of a rubber item, obtains raw material 'p' required for its production from an external supplier. According to estimates, maximum consumption is 1 500 units per month and minimum consumption is 500 units per month. Further, the maximum delivery period is four months and the minimum delivery period two months. The economic order quantity is 4 000 units.

**Required:**

1. Reorder level
2. Minimum stock level
3. Maximum stock level
4. Average stock level

## Assignment 07

Following information is related to the item "M"

- Annual demand 36 000 units
- lead time weeks – minimum 2, maximum 4
- Cost per order Rs. 10
- consumption units - minimum 50, maximum 100
- Holding cost Rs. 8 per unit

**Required:**

1. Economic order quantity (EOQ)
2. Number of orders per year
3. Minimum stock level

## Past Papers Questions

### 2015 A/L

The following information relates to a raw material used by a company.

- i) The summary of the stock ledger for March 2015:

Date	Description	Quantity (Units)	Price per unit (Rs.)
01.03.2015	Balance	4000	12
10.03.2015	Purchases	8000	15
20.03.2015	Issues	7000	?
25.03.2015	Purchases	8000	20
31.03.2015	Balance	13000	

- ii) The company uses weighted average method to price the inventory issues.

- iii) Other information:

Maximum	Consumption (units per month)	Lead time (months)
Minimum	3000	4
	1000	2

**Required:**

- 1). Re-order quantity
- 2). Value of inventory issues on 20.03.2015
- 3). Re-order level
- 4). Maximum stock level
- 5). Minimum stock level

### 2017 A/L

A company, which produces vegetable storage boxes, uses a special type of raw material for this purpose. In order to produce a storage box, 4kgs of this raw material is required. The monthly production of storage boxes varies from 150 to 200. The recorder quantity of this material is 4000kgs and the lead time of an order varies between 5 to 7 working days.

**Required:**

In relation to this material:

- 1). Re-order level
- 2). Minimum stock level
- 3). Maximum stock level
- 4). Average stock level

### 2019 A/L

'XYZ' is a product manufactured by Dayan PLC. The weekly production of this product varies from 300 to 500 units. It is produced using two raw materials-'A' and 'B'. To produce one unit of product 'XYZ'. 10kgs

of raw material 'A' and 5kgs of raw material 'B' are required. The following information relates to raw materials 'A' and 'B'.

	A	B
Re-order quantity.....	20 000	?
Re-order level .....	18 000	?
Minimum stock level .....	?	19000
Maximum stock level .....	?	5000
<b>Lead time in weeks:</b>		
Minimum	2	3
Maximum	4	5

**Required:**

- 1). Maximum and minimum stock levels of raw material 'A'
- 2). Re-order level and re-order quantity of raw material 'B'
- 3). Average stock levels of raw materials 'A' and 'B'

**2020 A/L**

The information relevant to the inventory item 'DMI' traded by Suranga PLC for the month of January 2020 is given below.

Date	Description	Quantity (Unit)	Unit Cost (Rs.)
January 01	Opening balance	500	20
January 05	Purchases	300	24
January 12	Sales	400	?
January 15	Purchases	300	25
January 25	Sales	300	?
January 31	Purchases	200	26

**Required:**

- 1). Cost of inventory of 'DMI' as at 31.01.2020 based on First-in-First-Out (FIFO) method
- 2). Cost of sale for January 2020 based on First-in-First-Out (FIFO) method
- 3). Cost of sales for January 2020 based on Weighted Average Cost method

**2022 A/L**

Anuradha (Pvt) Ltd is a firm engaged in manufacturing of bricks. The following information relates to a raw material used in manufacturing of bricks for the month of March 2022.

Date	Description	Quantity (Kg)	Price per Kg
01	Opening raw material inventory	5 000	Rs. 25
10	Purchase of raw material	20 000	Rs. 30
15	Issue of raw material to manufacture bricks	16 000	?
20	Purchase of raw material	30 000	Rs. 40
28	Issue of raw material to manufacture bricks	10 000	?

**Required:**

- 1). The stores ledger account for this raw material for month of March 2022 based on each of the following methods: First-in First-out (FIFO) method & Weighted Average Cost (WAC) method

## CHAPTER 13.02

### COST & MANAGEMENT ACCOUNTING (PART 2)

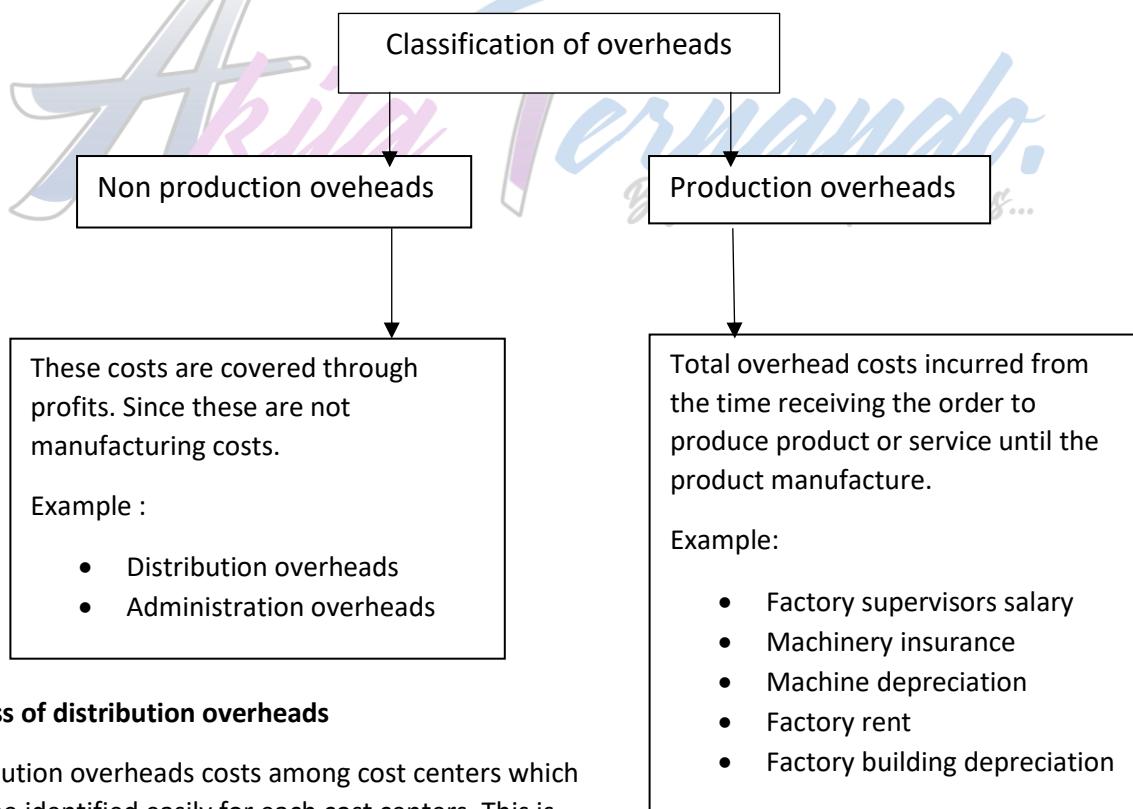
#### Absorbs Overhead Cost to a product

##### Production overhead Cost

Total common expenses incurred for large quantity of production which cannot be identified with a single product can be turned as overhead cost is known as production overhead cost or in other words total of indirect materials, Labour and other expenses.

**Example:** Glue, polish, varnish, security Guard salary, supervisor's salary, rent, rates, electricity

These costs cannot be identified for a cost unit. Therefore, it can be identified for a production.



##### Process of distribution overheads

Distribution overheads costs among cost centers which can't be identified easily for each cost centers. This is known as distribution of overheads and following are the relevant steps.

1. Collection of overhead costs
2. Allocation of overhead costs
3. Apportionment of overhead costs
4. Absorption of overhead costs

### Collection of overhead costs

Costs could be recognized by following source documents relevant for each expense

#### Example: Overhead cost items

- Indirect wages
- Electricity expenses
- Depreciation of used for production

#### Source document

- Salary pay sheet
- Electricity bill / voucher
- General journal voucher

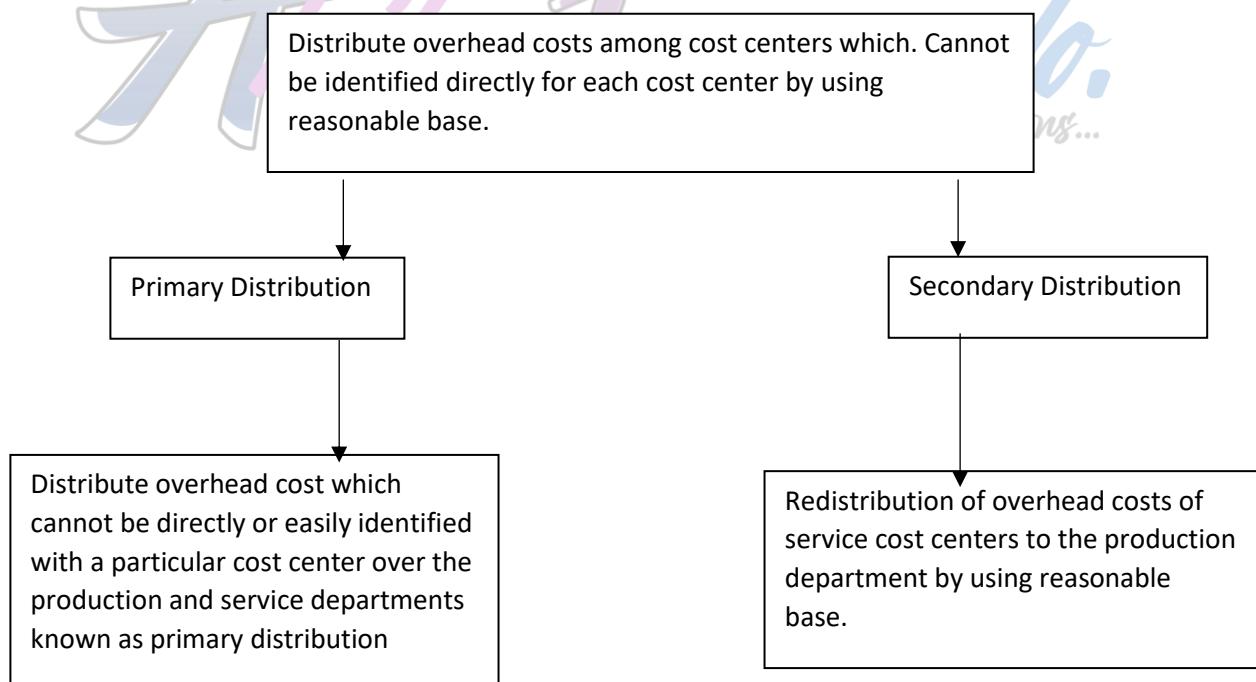
### Allocation of overheads costs

- Distribute overheads costs among cost centers which can be identified easily for each cost centers.

#### Example:

- Receipts of electricity bill for each cost center
- Preparation of salary pay sheet for each cost center

### Appointment of overhead cost



### Examples for bases of Apportionment

Cost item	Base of apportionment
Electricity Rent Rates Repairs of building Lighting	Floor area / square feet
Water bills Electricity bills Telephone expenses	Units consumed
Medical expenses Restaurant keeping expense Indirect wages Expenses insurance Supervision expenses	Number of employees
Machine depreciation Machine insurance	Value of machinery / carrying value
Expenses of service department	Number of stores requisitions / consumption rate
Maintenance expenses	Number of hours spent for maintenance
Expenses of air conditioning	Volume

### Absorption of overhead costs

Charging or absorbing total overhead cost pertaining to production department to a cost unit can be termed as absorption of overheads.

Overhead absorption rates can be calculated by dividing budgeted overhead cost from a number of units or using an appropriate base.

#### Example:

Overhead Absorption Rate	Method of Calculation
1. Output Basis	$\frac{\text{Total estimated overhead costs}}{\text{Estimated number of units product}} \times 100$
2. Direct materials cost basis	$\frac{\text{Total estimated overhead costs}}{\text{Estimated number of units product}} \times 100$
3. Direct labour cost basis	$\frac{\text{Total estimated overhead costs}}{\text{Estimated number of units product}} \times 100$
4. Prime cost basis	$\frac{\text{Total estimated overhead costs}}{\text{Estimated number of units product}} \times 100$

5. Direct labour hour basis	<b>Total estimated overhead costs</b>
	<b>Estimated number of units product</b>
6. Machine hour basis	<b>Total estimated overhead costs</b>
	<b>Estimated number of units product</b>

**Assignment 01**

There are two production departments and a service department in a garment factory. Expenses of producing 1000 garments are as follows.

Item	Cutting section	Sewing Section	Stores
Machine (Rs)	700 000	1 400 000	-
Kilowatt hours	1 000	5 000	1 000
Area (Sq ft)	10 000	50 000	10 000
No of workers	1 000	2 000	500
No of stores	50	30	-
Repulsions notes			
Indirect Materials (Rs)	20 000	40 000	-
Indirect wages (Rs)	50 000	100 000	-

(Rs.)

- Building rent 70 000
- Electricity 14 000
- Employee insurance 8 400
- Machine insurance 3 000
- Machine depreciation 30 000

**Required**

Prepare production overhead cost analysis sheet

**Assignment 02**

	Rs	Rs
Machine depreciation	35 000	
Indirect materials division	A - 50 000	B - 40 000
Indirect wages division	A - 100 000	B - 60 000
Insurance	10 000	
Factory rent	20 000	

Supervisor salary	30 000
Electricity	6 000

Basis of Apportionment	A	B	Service
Machine cost (Rs.)	200 000	100 000	50 000
Area (sq.mt)	300	100	100
No of employees	50	40	10
Electricity consumed (units)	30	20	10
Value of Insurance policy	300 000	100 000	100 000

Service department overhead costs are equally distributed among production departments.

**Required**

Prepare overhead cost analysis sheet

**Assignment 03**

Following cost are related to one unit of torch.

- Direct materials Rs.900
- Direct labour Rs.400

	Finishing	Assemble	Stores
Total overhead cost	875 500	414 500	210 000
Materials requisition notes	700	500	-
Expected Machine hours	25 000	30 000	-
Expected Labour hours	10 000	20 000	-

Production departments Finishing 5 machines hours required per unit

Production department assembly 8 Labour hours required per unit

- Overhead costs of finishing and assembly departments are absorbed. According to machine hours and Labour hours respectively

**Required**

Calculate unit cost of a torch

### Assignment 04

Visithura Ltd. Has planned to produce two types of vases A and B. The prime cost and hours required to produce each type of vases has been estimated as follows.

	Type A	Type B
Prime cost per unit		
- Direct materials	150	100
- Direct wages	450	400
Required hours per unit:		
- Direct Labour hours	6	2
- Machine hours	6	1

### Additional information

- I. The budgeted information for next quarter is given below:

Production units: A- 1000 B-2000

Manufacturing overheads Rs.500 000

- II. It is the policy of the company to add 10 % profit on the cost of production

### Required

- 1) The overhead absorption rate based on direct labour hours
- 2) Cost of production of A vase and type B vase using the direct labour hour absorption rate. (show clearly the cost components)
- 3) Selling price of type A vase and B vase

### Assignment 05

A company manufactures two products X and Y which go through two division's assembly and finishing. There is a **Separate technical service division** to serve the assembly and finishing divisions. The following information for the month of January 2018 was extracted from the company records.

- I. Budgeted manufacturing overhead:

	Rs.
Quality control labours salary	50 000
Building maintenance	60 000
Electricity	11 000
Staff wages	116 000

II. Overheads apportionment bases:

Basis	Production Division		Service Division	Total
	Assembly	Finishing	Technical Service	
Floor space (sq.m)	800	1400	200	2400
Number of employees	40	66	10	116
Kilo watts of electricity consumed	300	700	100	1100
No. of quality inspections made	4	16	-	20
No. of queries made to Technical Service Division	25	75	-	100

III. Actual Direct cost:

	Product x	Product y
Direct material cost per unit (Rs.)	300	200
Direct labour cost per unit (Rs.)	500	300
Direct expenses per unit	80% of direct material cost	25% of direct labour cost

IV. Other information:

	Product x		Product Y	
	Budgets	Actual	Budgets	Actual
Machine hours required per unit- assembly	1	2	1.5	1
Direct labour hours required per unit - finishing	4	3	3	2
Budgeted production for the month (units)	500		400	

**Required**

1. Prepare the “overhead Analysis sheet” showing clearly the basis of apportionment used.
2. Re- Apportion the total overhead cost of technical service division to production divisions on the basis of service queries made.
3. Compute the overhead absorption rates for assembly and finishing divisions based on machine hours and direct labour hours respectively.

**2012 A/I**

Roshan PLC has two production departments, Assembly and Finishing, and a store. The company produces two types of dolls, small size and large size. Whilst being produced. Then pass through the two production departments. The following information is given.

<b>Estimated annual overhead costs:</b>	<b>Rs.</b>
Factory rent	120 000
Depreciation of machinery	80 000
Insurance premium of employees	50 000
Indirect material – Assembly	106 000
-Finishing	59 000
-Store	11 000

**Other relevant information:**

(i)	<b>Assembly</b>	<b>Finishing</b>	<b>Store</b>
Cost of machinery (Rs)	300 000	500 000	-
Floor area (square meters)	10 000	6 000	4 000
Number of employees	60	30	10
Budgeted machine hours	5 000	2 000	-
Budgeted labour hours	2 000	8 000	-

- (ii) The store provides services to Assembly and Finishing departments at 60% and 40% respectively.
- (iii) Overhead costs are absorbed on the following bases.

**Assembly Department – Machine hours****Finishing Department - Labour hours**

- (iv) Required hours per unit (large size doll);
  - Machine hours: Assembly department 4 hours
  - Labour hours: Finishing department 5 hours
- (v) Actual direct cost relating to manufacture of a large size doll:
 

Direct material	Rs.100
Direct labour	Rs.150
- (vi) Selling price of large size doll Rs.600

**Required:**

- (1) Overhead analysis sheet showing the basis of appointment used (including the reappointment of overhead costs of the store).
- (2) Production cost of a large size doll.
- (3) Profits and loss from the sale of 200 large size dolls.

**2013 A/I**

An incomplete budgeted overhead analysis sheet of a manufacturing company is given below.

Overhead	Basis of apportionment	Machining department (Rs.'000)	Finishing department (Rs.'000)	Maintenance department (Rs.'000)	Total (Rs.'000)
Allocated overhead		820	480	190	1490
Electricity					240
Rent					180
Depreciation of machinery					150
Employee welfare expenses					300

**Additional information:**

i)

Description	Machining Department	Finishing Department	Maintenance Department	Total
Kilowatt hours	15000	6000	3000	24000
Cost of machinery (Rs.)	1000000	500000	-	1500000
Floor area (square meters)	200	100	60	360
No. of employees	25	100	25	150

- ii) It is estimated that the Maintenance Department provides 60% of its service to the Machining Department and the rest to the Finishing Department.
- iii) Overheads of Machining Department and Finishing Department are absorbed on machine hours and direct labour hours respectively.
- iv) The following information relates to the two types of products manufactured by the company.

Description	Type A	Type B
Prime cost per unit (Rs.)	700	720
Required hours per unit (Budgeted)		

Machine hours	5	6
Direct labour hours	4	8
Production units (Budgeted)	1000	1500

**Required:**

- 1). The completed overhead analysis sheet (including the reapportionment of the overhead cost of the Maintenance Department)
- 2). Overhead absorption rates for each production department
- 3). The cost of production per unit of products 'A' and 'B'

**2014 A/I**

Roshan PLC produces two types of pens (Type 1 and Type 2). It has a factory consisting of three production departments (Machining, Assembly and Finishing) and a store, which are located in separate buildings.

The budgeted overheads for the year 2015 are as follows:

	Overheads	Rs.'000
<i>Indirect wages:</i>		
Machining Department.....		310
Assembly Department.....		630
Finishing Department.....		140
Store.....		180
<i>Rent:</i>		
Factory.....		1600
Store.....		400
<i>Lighting:</i>		
Factory.....		600
Store .....		140
Oil for Machining Department.....		300
Depreciation on machinery.....		1200
Insurance store.....		500
Security charges.....		300

**Additional information:**

i)

Item	Machining	Assembly	Finishing	Store
No. of security persons	10	12	6	2
Floor space (sq. meters)	3600	2800	1600	200
Cost of machinery (Rs.'000)	500	600	200	200
No. of direct labour hours	200	484	270	-
No. of machine hours	400	70	180	-
No. of stores requisitions	25	15	10	-

- ii) The Machining Department uses machine hours and the other two production departments use direct labour hours for the absorption of overheads.
- iii) Budgeted hours to produce a pen:

Department	Type 1	Type 2
Machining	4	3
Assembly	3	5
Finishing	2	4

**Required:**

01. The overhead analysis sheet giving the basis of apportionment (With the reapportionment of overhead)
02. Overhead absorption rates for each department
03. Overhead absorbed into each type of pen

**2015 A/I**

A company has two production departments—Assembly and Finishing and a service department Maintenance. The production departments are situated in the same premises whereas the maintenance department is located separately. The following incomplete overheads analysis sheet has been prepared for the **two production departments**:

Overheads	Basis of apportionment	Total (Rs.'000)	Assembly (Rs.'000)	Finishing (Rs.'000)
Allocated production overheads	Direct	9800	5000	4800
Production manager's salary		6000		
Rent		4800		
Electricity		2400		
Machinery depreciation		6000		
Employee welfare expenses		3000		

**Additional information:**

- i) Overheads apportionment bases between Assembly and Finishing Departments:

- Production manager's salary is divided equally.
- Other bases:

Description	Assembly	Finishing	Total
Floor space (Sq. Meters)	20000	10000	30000
Kilowatt hours	40000	20000	60000
Machinery value (Rs.'000)	50000	10000	60000
No. of employees	50	100	150
Maintenance hours	20000	80000	100000

- ii) Total overheads allocated to Maintenance Department were Rs. 6000000. It has to be apportioned between the two production departments based on maintenance hours.
- iii) Assembly Department and Finishing Department use machine hours and labour hours respectively to absorb overheads. The budgeted machine hours for Assembly Department are 400000 and the budgeted labour hours for Finishing Department are 200000.
- iv) The following information is related to Product 'A' manufactured by the company.

Budgeted production	1000 units
Selling price per unit	Rs. 2500
Prime cost per unit	Rs. 500
Budgeted hours for production of a unit:	

– Machine hours	3
– Labour hours	5

Budgeted non-manufacturing overheads:

– Variable overheads per unit	Rs. 300
– Fixed overhead	Rs. 400000

**Required:**

- 1). The completed Overhead Analysis Sheet for the two production departments
- 2). Overhead absorption rate for each production department
- 3). A statement showing the expected profit or loss from Product 'A'

**2016 A/I**

Delwin Company, engaged in manufacturing shoes, has two production departments and a service department for maintenance activities. The budgeted information for the next year at the activity level of 5000 units is as follows.

Description	Total	Production		Maintenance department
		Department A	Department B	
Indirect wages (Rs.)	75000	46000	13000	16000
Depreciation on machinery (Rs.)	30000	20000	10000	-
Rent (Rs.)	90000	?	?	?
Security charges (Rs.)	45000	?	?	?
Electricity (Rs.)	80000	?	?	?
Machine hours	15000	10000	5000	-
Labour hours	14000	2000	12000	-
Floor area (sq. meters)	9000	3800	3600	1600
No. of security persons	15	7	7	1
Kilowatt hours	1600	1000	500	100

Additional information:

- i) The total overhead costs of the Maintenance Department are to be re-apportioned between the Production Department A and B in the ratio of 5:3 respectively.
- ii) Production Department A uses machine hours and Production Department B uses labour hours to absorb overheads.

iii) To produce a pair of shoes, 5 hours and 3 hours are spent respectively in the production departments A and B.

iv) Direct costs to produce a pair of shoes:

Raw material      Rs. 30 per pair

Labour              Rs. 20 per pair

v) Nonproduction overheads:

Variable      Rs. 25 per pair

Fixed              Rs. 105000

**Required:**

- 1). The overhead analysis sheet naming the bases of apportionment
- 2). Overhead absorption rates for each production department
- 3). Cost of production of a pair of shoes
- 4). Total cost at the activity level of 5000 units

**2017 A/I**

A roof tile manufacturing firm has two production cost centers, Machine and Finishing in the factory. Further, it has a service cost center restores, which is located in the building where the factory is situated. The firm produces two types of roof tiles 'A' and 'B'. The following budgeted cost information is provided.

Rs.'000

**Salaries:**

Factory supervisors .....	240
Stores employees .....	150
Administrative officers .....	400

**Rent:**

Factory building including the store .....	680
Administrative building .....	320

**Depreciation:**

Machinery .....	100
-----------------	-----

**Electricity:**

Factory building including the store .....	400
--	-----

Administrative building .....	120
<b>Insurance:</b>	
Machinery .....	80
<b>Repairs:</b>	
Machinery .....	200
<b>Maintenance:</b>	
Factory building including the store .....	340
Administrative building .....	150

The following information is also provided.

Description	Machine	Finishing	Stores
Machinery cost (Rs.)	750000	250000	-
No. of workers	25	75	-
Floor area (square meters)	15000	15000	4000
Electricity (kilowatt hours)	12000	7000	1000
Machine hours	20000	6000	-
Direct labour hours	2000	10000	-

- Overheads of the stores is reapportioned equally between Machine and Finishing centers.
- Production overheads are absorbed based on machine hours in the machine centre and labour hours in the Finishing center.
- In order to produce one roof tile of type 'A', 4 machine hours and 2 labour hours are spent Machine and Finishing centres respectively.
- direct raw material and direct labour costs to produce one roof tile of type 'A' are estimated Rs. 162 and Rs. 100 respectively.

**Required:**

- The production overhead Analysis Sheet giving the bases of apportionment
- Production overhead absorption rates for Machine and Finishing centres
- Cost of production of a roof tile of type 'A'

**2018 A/I**

A fruit drink processing company produces two types of fruit drinks (Mango and Pineapple). It has a factory consisting of two production divisions Processing and Bottling, and a service division-Store. The factory and store are located in separate buildings.

The budgeted information at the activity level of 50000 units for a one-year period is as follows.

Description	Factory (Rs.)	Store (Rs.)	Total (Rs.)
Rent	180000	50000	230000
Indirect wages	?	?	400000
Electricity charges	120000	30000	150000
Machinery insurance	90000	20000	110000
Rates for buildings	90000	30000	120000
Charges for security service	?	?	360000

Description	Processing	Bottling	Store
Number of indirect employees	10	15	15
Floor area (square meters)	12000	18000	8000
Production machinery cost (Rs.)	400000	200000	-
Cooling machine cost (Rs.)	-	-	250000
Machine hours for the period	100000	65000	-
Number of security personnel	2	2	8
Total kilowatt hours for the period	3000	2000	1000

Additional information:

- i) Production machinery and the cooling machine are depreciated annually at 10% and 8% respectively on straight-line method.
- ii) The total overheads of the Store are reapportioned between processing and Bottling divisions on the basis of cost of production machinery.
- iii) Overheads of the production divisions are absorbed based on machine hours.
- iv) The following information relates to a bottle of Mango Drink.

Description	Per one bottle
Actual time spent:	
Processing Division	12 minutes
Bottling Division	6 minutes
Direct costs:	
Raw material	Rs. 6.40
Labour	Rs. 5.00
Non-production variable overheads	Rs. 4.00

- v) Nonproduction fixed overheads is Rs. 300000.
- vi) Profit margin is 20% on the selling price of each product.

**Required:**

- 1). The overhead Analysis Sheet showing clearly the bases of apportionment (including reapportionment of service Division overheads)
- 2). Overhead absorption rates for two divisions Processing and Bottling
- 3). Cost of production per bottle of Mango Drink
- 4). Budgeted selling price per bottle of Mango Drink

**2019 A/I**

Kumudu PLC has two production departments 'Assembly' and 'Finishing' and a service department – 'Stores'. The budgeted information for the next financial year is as follows:

Description	Total	Assembly	Finishing	Stores
Supervisors' salary (Rs.'000)	1690	530	730	430
Rent (Rs.'000)	360	?	?	?
Electricity (Rs.'000)	180	?	?	?
Security charges (Rs.'000)	240	?	?	?
Depreciation on machinery (Rs.'000)	?	?	?	-
Floor area (sq. meters)	18000	9000	6000	3000
Kilowatt hours	9000	3000	4500	1500
No. of security persons	12	5	3	4
Labour hours	21000	7000	14000	-
Machine hours	15000	12000	3000	-
No. of material requisitions raised	50	30	20	-

**Additional Information:**

- i) The cost of machinery of Assembly and Finishing Department are Rs. 450000 and Rs. 800000 respectively. The company depreciates machinery on straight line method at 20% per annum.
- ii) The total overheads of the Stores Department are reapportioned between Assembly and Finishing Department based on the number of material requisitions raised by each department.
- iii) The Assembly Department uses machine hours and Finishing Department uses labour hours to absorb overheads.
- iv) The company sells goods by adding a profit mark up of 20% on total production cost. The following details relate to products 'ABC' and 'PQR', manufactured by the company.

	ABC (per unit)	PQR (per unit)
Actual hours spent:		
Assembly Department (machine hours)	2	4
Finishing Department (labour hours)	3	2
Production overheads (Rs.)	?	?
Prime cost (Rs.)	380	?
Selling price (Rs.)	?	1200

**Required:**

- 1). The Overhead Analysis Sheet naming the bases of apportionment (including reapportionment of Service Department Overheads)
- 2). Overhead absorption rates for the two production departments.
- 3). Production overheads per unit and selling price per unit of Product 'ABC'
- 4). Production overheads per unit and prime cost per unit of Product – 'PQR'

**2020 A/I**

Dinesh Company manufactures two types of products 'A' and 'B'. The company has a factory consisting of two production departments, namely; Assembly and Finishing and a service department namely; Stores. All these departments are located in the same premises. Further, the company has an Administrative Department and it is located in a separate building. The budgeted overheads for the next financial year at the activity level of 5000 units are given below.

Description	Total (Rs.'000)	Factory (Rs.'000)	Administrative Department (Rs.'000)
Indirect wages	750	700	50
Production managers' salary	900	900	-
Rent of buildings	?	960	?
Machinery depreciation	800	800	-
Office equipment depreciation	30	-	30
Electricity charges	400	?	?
Other production overheads	290	290	-

**Additional information:**

- i) Overhead apportionment bases are as follows:

Description	Assembly	Finishing	Stores
Floor area (Sq. Meters)	24000	16000	8000
Kilowatt hours	2000	1000	500
No. of employees	20	12	3
Cost of machinery (Rs.)	3000000	2000000	-

- ii) The factory employs three production managers, two at the assembly department and other manager at the Finishing Department. Each of them is paid a monthly salary of Rs. 25000.
- iii) The company pays a monthly rent of Rs. 10000 for the building where the Administrative Department is located and its annual usage of electricity is 500-kilowatt hours.
- iv) The other production overhead of assembly, Finishing and Stores are Rs. 190000, Rs. 70000 and Rs. 30000 respectively.
- v) Total overheads of the Stores are re-apportioned equally between the two production departments.
- vi) Overheads of production departments are absorbed based on machine hours. The annual estimated machine hours for Assembly and Finishing departments are 50000 and 60000 respectively.

vii) The following information relates to the two products 'A' and 'B' manufactured by the company.

	A	B
Actual machine hours to produce one unit:		
Assembly Department (Hours).....	02	04
Finishing Department (Hours).....	03	02
Prime cost per unit (Rs.).....	225	310
Profit margin on selling price.....	25%	20%

**Required:**

- 1). The Overhead Analysis Sheet showing clearly the bases of appointment
- 2). Overhead absorption rates of Assembly and Finishing Department
- 3). Total administrative overheads
- 4). Production cost per unit of product 'A'
- 5). Selling price per unit of product 'B'

**2021 A/I**

Samadi PLC manufactures two types of fruit juice. 'Mango' and 'Orange'. It has a factory consisting of two production departments, namely: 'Processing' and 'Bottling' and a service department 'Stores'. All these departments are located in the same premises. The budgeted overheads for the next year at the maximum activity level are as follows.

Description	Total (Rs.)	Processing	Bottling	Stores
		Department (Rs.)	Department (Rs.)	(Rs.)
Production managers' salaries	710000	384000	326000	-
Store keeper's salary	300000	-	-	300000
Indirect wages	1200000	?	?	?
Electricity charges	240000	?	?	?
Rent	480000	?	?	?
Machinery depreciation	120000	?	?	-
(based on straight line basis)				

**Additional information:**

- i) Overhead apportionment bases and other related information are as follows:

Description	Processing	Bottling	Stores
	Department	Department	
Floor area (Sq. Meters)	30000	10000	8000
Kilowatt hours	4000	3000	1000
No. of employees	60	50	10
Machinery-cost (Rs.)	1500000	500000	-
Budgeted number of machine hours (Annual)	60000	30000	-
Budgeted numbers of direct labour hours (Annual)	20000	50000	-

- ii) Total overheads of the Stores are reapportioned between processing and Bottling department at the ratio 3:2 respectively.
- iii) Processing department absorbs overheads based on machine hours and the Bottling Department absorbs overheads based on direct labour hours.
- iv) The following information relates to the two products manufactured by the company.

**Per bottle:**

	Mango Juice	Orange Juice
<b>Actual machine hours:</b>		
Processing Department (hours).....	2	3
Bottling Department (hours).....	2	4
<b>Actual direct labour hours:</b>		
Processing Department (hours).....	2	3
Bottling Department (hours).....	3	5
Direct labour cost (Rs.).....	50	60
Direct material cost (Rs.).....	115	70

Required:

- 1). The Overhead Analysis Sheet showing clearly the bases of apportionment
- 2). Overhead absorption rates of Processing and Bottling Departments
- 3). Total cost per bottle of 'Mango Juice' and 'Orange Juice' (separately)
- 4). Selling price per bottle of 'Mango Juice' if a 20% profit margin on selling price is maintained

**2022 A/I**

A manufacturing company produces two products, namely, 'X' and 'Y'. The company uses two production cost centers, namely: 'Assembly' and 'Finishing', and the service cost center 'Stores' to produce their products. All these cost centers are located in the same premises. The budgets production overhead for the next financial year is given below.

	Rs.'000
Allocated overheads:	
Assembly	930
Finishing	760
Stores	40
Other overheads:	
Factory rent	100
Electricity	300
Depreciation of machinery	450
Maintenance cost of the information system	420

**Additional Information:**

- i) The information relevant to the cost centers:

	Assembly	Finishing	Stores
Kilowatt hours	10000	8000	2000
Machinery cost (Rs.'000)	80	40	-
Floor area (square meters)	1500	750	250
No. of reports generate through the information system	50	150	10

- ii) The service of stores is provided to Assembly and Finishing cost centers in the ratio of 3:2 respectively.
- iii) The overhead of Assembly and Finishing cost centers are absorbed into the products based on machine hours and labour hours respectively. The budgeted machine hours of the Assembly Cost Centre are 40000 and the budgeted labour hours of Finishing Cost Center are 20000.

- iv) The following information relates to the products manufactured by the company during a year.

	Product X	Product Y
Direct material cost per unit (Rs.)	310	340
Direct wages per unit (Rs.)	150	200
Actual hours to produce one unit:		
Machine hours	5	2
Labour hours	2	4
Number of unit produced	1000	1500

- v) The selling prices of the products are determined as follows.

- Product X – by keeping a 20% profit on the production cost per unit
- Product Y – by keeping a 10% margin on the selling price per unit

**Required:**

- 1). The overhead analysis sheet showing elderly the bases of apportionment (including the re-apportionment of the overhead of the stores)
- 2). The overhead absorption rate for each production cost center
- 3). The following for Products 'X' and 'Y'
  - i) Cost of production per unit
  - ii) Selling price per unit

**2023 A/I**

A manufacturing company produces two products namely, 'P' and 'Q'. The company has two production cost centers, namely; 'Assembly' and 'Finishing' and a service cost center- 'Stores' to produce these products. These entire cost centers are located in the same building.

Overhead absorption rates already calculated by the company based on the budgeted overheads for this year are given below.

- assembly cost center – Rs. 20 per machine hour
- finishing cost center – Rs. 25 per direct labour hour

However, it was revealed subsequently that the following budgeted overheads have not been considered in the calculation of these rates.

- electricity cost of the building Rs. 80000
- Depreciation of the building Rs. 200000
- Insurance premium for the building Rs. 100000
- Maintenance cost of the Assembly cost center Rs. 20000

The information relevant to the cost centers:

	Assembly	Finishing	Stores
Floor area (square meters)	6000	3000	1000
Kilowatt hours	2500	1000	500
Total budgeted machine hours	40000	12000	-
Total budgeted direct labour hours	6000	24000	-

Total overheads of the Stores are re-apportioned between Assembly and Finishing cost centers at the ratio of 3:1 respectively.

The information relating to the manufacturing of products 'P' and 'Q' during the year is given below.

	Product P	Product Q
Direct raw materials cost per unit (Rs.)	216	129
Direct labour cost per unit (Rs.)	?	?
(Rate per direct labour hour is Rs. 100)		
Actual direct labour hours to produce one unit:		
– Assembly	2	1
– Finishing	1	3
Actual machine hours to produce one unit:		
– Assembly	2	3
– Finishing	1	2
Non-manufacturing overheads per unit (Rs.)	100	150

#### Required:

- 1). Revised overhead Analysis Sheet clearly the bases of apportionment.
- 2). revised overhead absorption rates for Assembly and Finishing cost centers.
- 3). total production cost per unit of product 'P' and total cost per unit of product 'Q'.

4). If a markup of 20% on the total cost is maintained:

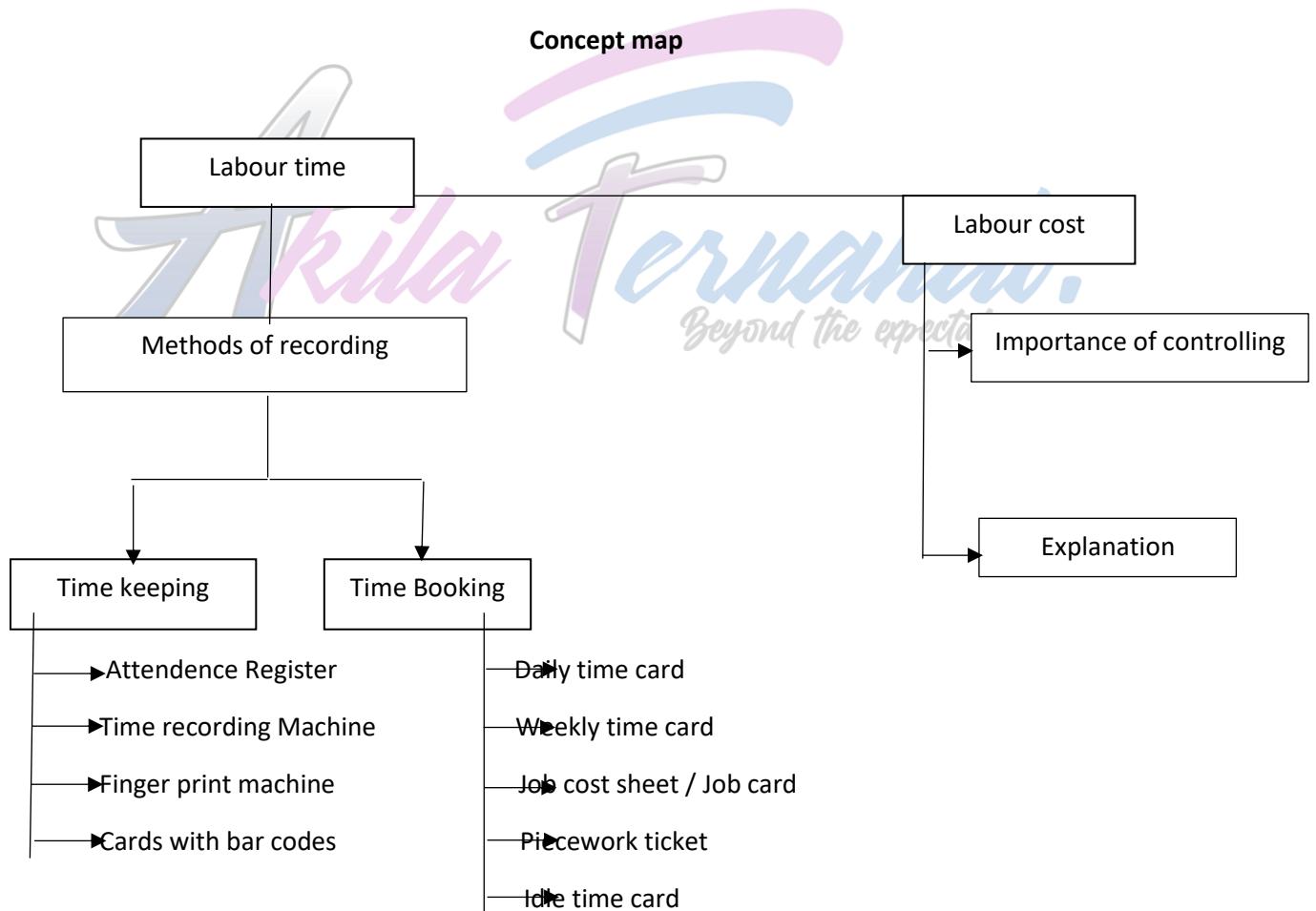
- i) selling price per unit of product 'P'
- ii) Selling price per unit of product 'Q'

## Records the labour cost

**Learning outcomes:**

- Explains labour cost
- Presents importance of Labour cost control
- Keeps records of Labour cost

**Basic Terms and concept:**



Directly or indirectly incurred to pay wages of workers who sacrifice their Labour to produce goods or service in meant by Labour cost. It includes following.

- Basic salary
- Overtime Payment
- Other extra allowances
- Medical or other special allowances
- Employee provident fund contribution by employer
- Employee Trust fund contribution by employer

#### **Importance of labour cost control:**

- More attention is needed for Labour cost than other resources being Labour is a human resources.
- A control of Labour cost is important because large proportion of cost unit comprises of Labour cost.
- Can minimize cost per unit by increasing production capacity through an improvement of labour productivity.

#### **Recording of labour time can be two types**

- Time keeping
- Time Booking

#### **Methods of time keeping**

Attended time is the time duration between arrival and departure time of workers in an organization.

#### **There are several methods;**

- Time recording machine
- Finger print machine
- Cards with bar codes
- Attendance register

#### **Methods of time keeping**

Records time spent by workers in different jobs or process for determining labour cost if Time booking. These are variety of record depending on the nature of the organization.

#### **Following are some of the methods of time booking.**

- Time cards
  - Daily time cards
  - Weekly Time card
- Job ticket
- Job cost sheet / Job card
- Piece work ticket
- Idle time card

### Time cards

A sheet completed by each worker by including the time spent of each job.

A sheet/card which is used to record the time spent on each job during the day is known as daily card. A Sheet/Card records weekly time details known as weekly time card.

### Job ticket

A card which contains duties, instructions to be give and required time for each job of worker is called job ticket.

### Job cost sheet / Job card

This is a document which will be completed by several workers who perform a particular job and transfer to the either works after finishing each worker's job.

### Piece work ticket

This is a document which is be used to record the time taken by each worker to produce goods in a situation where their wages are based on output level

### Idle time card

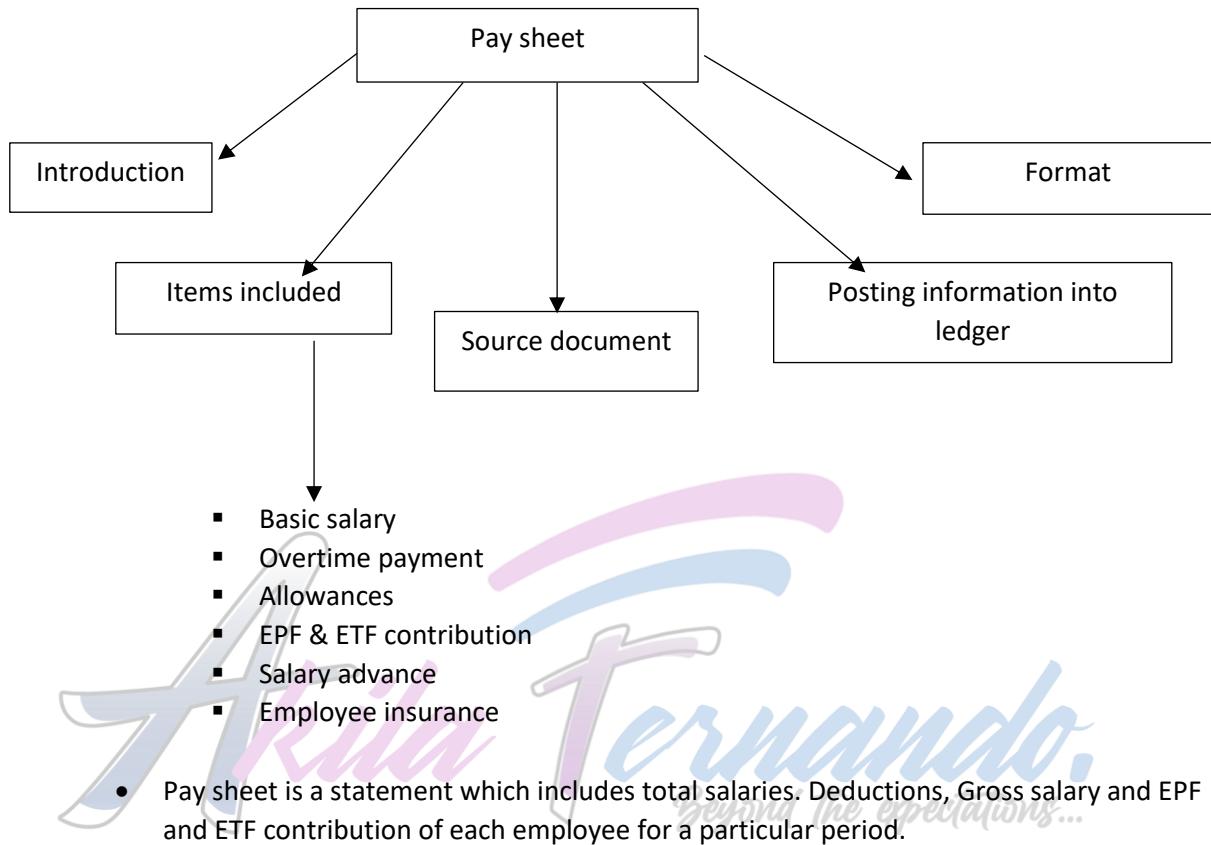
This is the time if any worker not engaged in any other work due to machine break down lack of raw materials or electricity power cuts. Idle time also takes for the calculation of wages.

## Prepare pay sheet

### Learning outcomes:

- Lists source document appropriate for the preparation of salary pay sheet.
- States items included in a pay sheet
  - Basic salary
  - Allowances
  - Gross salary
  - Deductions
  - Net salary
- Presents format of a pay sheet
- Prepares pay sheet
- Posts information in pay sheet to ledger

### Basic terms and concepts:



Item	Source
1. Basic salary / Total salary	<ul style="list-style-type: none"> <li>• Letter of appointment</li> <li>• Salary increments sheet / circular</li> <li>• Time card</li> <li>• Piece work ticket</li> </ul>
2. Overtime	<ul style="list-style-type: none"> <li>• Overtime payment sheet</li> <li>• Overtime payment ticket</li> </ul>
3. allowances	<ul style="list-style-type: none"> <li>• Circulars</li> </ul>
4. Salary advance	<ul style="list-style-type: none"> <li>• Management decisions</li> <li>• Minutes of meeting</li> </ul>
5. EPF contribution ETF contribution	<ul style="list-style-type: none"> <li>• Statuary rules</li> <li>• EPF Act. ETF Act</li> </ul>
6. Employee insurance installment	<ul style="list-style-type: none"> <li>• Letter given by the employee with his signature</li> </ul>

- Following journal entries are related to the data included in pay sheet by using salary and wages control account.

**1. Total Gross salary**

Salaries and wages account	Dr	xxx
Salaries and wages control account		xxx

**2. Total deductions from the salary**

Salaries and wages control account	Dr	xxx
Relevant deduction account		xxx

**3. EPF contribution of employer**

EPF expense account	Dr	xxx
EPF payable account		xxx

**4. ETF Contribution**

ETF expense account	Dr	xxx
ETF payable account		xxx

**5. Payment of net salary**

Salaries and wages control account	Dr	xxx
Cash control		xxx

**6. Net salary not paid cash**

Salaries and wages control account	Dr	xxx
Salaries and wages payable account		xxx

At the end of the period balance is salaries wages account. Employee provident Fund expense account and Employee trust fund expense account are transferred to the profit and loss (Income statement) account.

### Assignment 01

Following salary details are related to kiran (PLC) for the month of march 2018

- Standard number of labour hours per month 160
- Rate per hour is Rs.200
- Overtime payment is 150% from the Basic salary
- EPF contribution from basic salary
- Employee 10%
- Employer 15%
- ETF contribution is 3% from basic salary

**Required:**

- Paysheet for the month of March 2018
- General journal entries
- 'Ledger accounts

**Assignment 02**

Given below are extracts of the wages report of suhada Company for the month of May 2018.

Earnings		Gross salary (Rs.)	Deductions			Net Salary (Rs.)	Employer's Contribution	
Basic Salary (Rs.)	Overtime Payments (Rs.)		Loan installments (Rs.)	Festival advance (Rs.)	EPF (Rs.)		EPF (Rs.)	ETF (Rs.)
40 000	5 000	45 000	4 000	1 000	3 200	36 800	4 800	1 200

**Required:**

Relevant accounts in the General Ledger together with the salaries and Wages control Account.

**Assignment 03**

Information Pertaining to wages of Mohammed Ltd. For the month ended 28<sup>th</sup> February, 2018 is shown below:

Name Of Employee	Number of Working hours							
	Week 1		Week 2		Week 3		Week 4	
	Week days	Weekend days	Week days	Weekend days	Week days	Weekend days	Week days	Weekend days
Nimal	45	6	45	4	40	5	40	-
Sarath	40	-	50	-	44	-	40	4

- i. Weekly wage rates are as follows:  
Weekdays – 40 hours per week, at normal wage rate of Rs.100 per hour  
Wage rate for overtime hours:  
- Week days: Rs150 per hour, Weekend days: Rs.200 per hour
- ii. Employee provident Fund (EPF) contributions: Employer 15%, Employee 10% (In computing EPF contribution overtime payments are not considered)
- iii. Wage advance taken during the month : Nimal Rs.5,000
- iv. Nimal's monthly vehicle loan installment of Rs.1,000 is deducted from his salary
- v. The company is advised to deduct sarath's monthly housing loan installment of Rs.3,000 and pay it to sahana Bank.

**Required:**

1. Prepare the pay sheet for the month ended 28<sup>th</sup> February 2018
2. Prepare relevant Ledger Accounts including wages control account by posting pay sheet information to the general ledger.

**Assignment 04**

- a) The following information is relevant to a particular job assigned to Mr. Nadeshan to produce product A.

- Time allowed (Hours)	40
- Time spend (Hours)	36
- Production target (units)	300
- Actual production (Units)	320
- Normal hourly pay rate (Rs.)	100
- Production incentives per extra unit (Rs.)	50
- Payment for time saved	150% of the normal pay rate

**Required:**

Calculate the gross salary entitled to Mr. Nadeshan's for the job.

- b) Summary of payroll of a company for the month of January 2018 is given below.

	Rs.	Rs.
Basic salary		100,000
Overtime pay		40,000
Cost of living allowance		10,000
Gross pay		150,000
Deduction:		
EPF	10,000	
Employee Loan recoveries	18,000	
Trade Union member Fees	2,000	
Total deduction		(30,000)
Net pay		120,000
Employer's contribution:		
EPF		15,000
ETF		3,000

Company pays monthly EPF and ETF in the following month. Monthly salary is paid at the 31<sup>st</sup> day of each month. The following account balances as at 01<sup>st</sup> January 2018 are also given.

	Rs.
• ETF payable	3 600
• EPF payable	30 000
• Employee's loan account	425 000

**Required:**

The following ledger accounts for the month of January 2018.

1. Salary control account
2. EPF payable account
3. ETF payable account
4. Employee's loan account

**2014 A/I**

The salary related information of Nathan Tyre Manufactures PLC for the month of March 2014 is given below.

	(All figures in Rs.'000)			
	<b>Employee Category:</b>			
	Production workers	Production Supervisors	Production Manager	Administrative Assistants
Basic salary	5000	3000	1500	500
Incentive payment (based on piece rate)	2500	-	-	-
Overtime	-	500	250	-
Travelling allowance	-	250	150	-
Bonus (based on company profit)	<u>250</u>	<u>150</u>	<u>75</u>	<u>25</u>
Gross salary	7750	3900	1975	525
Deductions:				
Recovery of staff loan	300	100	-	-
EPF contribution (10%)	<u>500</u>	<u>300</u>	<u>150</u>	<u>50</u>
Net salary	<u>6950</u>	<u>3500</u>	<u>1825</u>	<u>475</u>
Company contributions:				
EPF (15%)	750	450	225	75
ETF (3%)	150	90	45	15

**Additional Information:**

The incentive payment relates to completion of an order to manufacture a special category of tyres.

**Required:**

The following for the month ending 31.03.2014 (Showing the composition of each item separately):

- 1). Direct wages
- 2). Employee related expenses included in production overhead
- 3). Employee related total expenses

**2016 A/I**

Migara educational institute established on 01.03.2016, conducts English diploma programs for school leavers. It employs two permanent teachers and a temporary teacher. Each teacher has to teach 120 hours per month.

- I. The gross salary of teachers consists of following items:

- Payments for teaching (for 120 hours):
 

Permanent – per teacher	Rs. 75 000 per month
Temporary	Rs. 500 per hour
• Payments for conducting extra sessions	Rs. 750 per hour
• Marking answer scripts	Rs. 100 per paper

- II. Number of teaching hours and answer scripts marked for the month of march 2016 are as follows:

Description	Permanent:		Temporary
	Nandani	Suresh	Manjula
Hours worked during the month	140	160	180
No. of answer script marked	100	150	200

- III. The contribution to the employee provident fund (EPF) and Employee trust fund (ETF) are based on the gross salary of both permanent and temporary teachers. The employer and employee contribution to EPF are 15% and 10% respectively. The employer's contribution to ETF is 3%

**Required:**

For the month of march 2016

1. Payroll
2. Salaries control account

**2017 A/I**

The following information relates to wages of a company for the month of July 2017.

- The gross wages for the month was Rs. 680 000, which consisted of the following:
  - i) Basic wages for the month was Rs. 680 000, which consisted of the following:
    - ii) Overtime premium for 500 hours worked at an hourly rate of Rs. 150.
    - iii) A bonus of Rs. 1000000 on profit basis
    - iv) Labour charges of Rs. 25000 paid to an outside party for installation of a machine
- Deductions from wages for the month is as follows:
 

i)	Contribution to Employee Provident Fund (EPF) Rs. 48000
ii)	Installment on staff loan Rs. 120000
iii)	Contribution to employee welfare fund Rs. 25000
- The employer and employee contributions to EPF are 15% and 10% respectively. The company calculates contributions to EPF based on basic wages.

**Required:**

The following accounts for the month of July 2017:

- 1). Wages
- 2). Wages Control
- 3). EPF Expenses
- 4). EPF Payable

**2021 A/I**

Mithun Education Institute was established on 01.05.2021 to conduct lectures for professional accounting programs. Three lectures serve in this institute. Each lecture has to conduct a minimum of 40 hours of teaching per month and an additional payment is made for extra teaching hours.

The remuneration per lecture is as follows.

Rs.

Monthly fixed payment (for minimum teaching time) 100 000

Fee for extra teaching time (per hour)	3000
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The following additional information is also provided.

- i) Due to the COVID pandemic, the lectures were conducted online and each lecture was paid a temporary internet allowance of Rs. 5000 per month.
- ii) The details of teaching hours and deductions from the salary for the month of May 2021 are as follows.

<b>Employee No.</b>	<b>Teaching Hours</b>	<b>Employee Loan Installment (Rs.)</b>	<b>Salary Advance (Rs.)</b>
001	50	40000	-
002	70	-	25000
003	40	60000	-

- iii) The lecture bearing employee number 003 also serves as the manager of this institute and he is paid an additional monthly fixed payment of Rs. 50000 in this respect.
- iv) The employee contribution to Employee Provident (EPF) is 15% and 10% respectively. The employer contribution to Employee Trust Fund (ETF) is 3%. All payments except the temporary internet allowance paid for working online are considered in the calculation of EPF and ETF.

**Required:**

- 1). Payroll for the month of May 2021
- 2). Salaries Control Account for the month of May 2021

**2023 A/I**

Lakmini Traders carries out a bookshop. This business has employed three workers and their salary related information for the month of December 2023 is given below.

<b>Employee No.</b>	<b>Cost of living allowance (Rs.)</b>	<b>Employee Loan deductions (Rs.)</b>	<b>Employer contribution to Employees Provident Fund (EPF) (Rs.)</b>
001	10000	15000	6000
002	10000	-	9000
003	10000	10000	7500

Additional information:

- The employer and employee contributions EPF and Employee Trust Fund (ETF) are as follows.

	EPF	ETF
Employer	12%	3%
Employee	8%	-

- EPF and ETF are calculated based on the gross salary.
- Gross salary of employees comprises the basic salary and the allowances.
- There are no allowances or deductions other than those mentioned above.
- EPF and ETF contributions of a particular month are remitted to the relevant funds in the first week of the following month.

**Required:**

For the month of December 2023:

- 1). Gross salary of each employee
- 2). Payroll of the business
- 3). Journal entries to record the following (including narration):
  - i) Salary expense
  - ii) Employee loan deductions
  - iii) EPF liability
  - iv) ETF liability

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