

Valuation of Material Receipts

Items to be deducted

Trade discount

Quantity discount

Subsidy / grant / Incentives

Items to be added

EXCLUDED

• Insurance charge

• Commission or broker-
age paid

- Freight inwards

- Cost of containers

- Basic or customer

duty

- Road tax / toll tax

L.S.T

10,000 Hg @ 10/Kg

* L.S.T should not form part of cost purchase under mentioned specifically.

* L.S.T should not form part of cost however If credit is not available when it shall form part of cost.

* on echolab Ltd not registered under V.S.T purchased material from a company which is registered under V.S.T. The following information is available for the one lot of 1,000 units of material purchase.

listed price of one lot

Trade discount

50,000

@ 10% of list price

C.V.S.T. and S.V.S.T. (credit not available 12%) (15% C.V.S.T. and S.V.S.T.)

Cash discount

@ 10%

Will be given 30 days

freight and insurance

Toll Tax paid

3,400

Demurrage

1,000

Commission and brokerage on purchase 2,000

1,000

Amount deposited and taxable container 6,000

Amount of returning container

4,000

other Expenses @ 2% of total cost

20% of material shortage is due to normal reasons

The payment to the supplier was made within 20 days of purchase

calculate cost per unit of material purchase the Sky company

Solution

Listed price one lot	50000	45000 ⁽¹⁾
Freight and insurance		3400
Toll Tax paid		1000
Demurrage commission on brokerage on purchase		2000
After refund the amount will be		2000
Other exp. Expense:		
G.S.T will also calculated		5400
20% of material shortage = $\frac{50000}{800}$		58,800

Working Note (1) = 50000 price

- T.D = 5000

$50,000 - 5000 = 45000^{(1)}$

Working Note (2) C.G.S.T and S.G.S.T not be calculate because the company is not registered.
Cash discount will also be not calculate.

1. $R.O.L = \text{Maximum consumption} \times \text{maximum Re-order period}$

* Note: Re-order period: - Time taken to received the order

$R.O.L = \text{minimum stock level} + (\text{Average Rate of consumption} \times \text{Re-order period})$

* $\text{minimum stock level} = \text{Re-order stock level} - (\text{Average consumption rate} \times \text{Average Re-order period})$

* $\text{Maximum stock level} = \text{Re-order} + \text{Reorder quantity} - (\text{minimum consumption rate} \times \text{minimum Re-order period})$

$\text{Average stock level} = \frac{\text{maximum stock level} + \text{minimum stock level}}{2}$

$\text{Average stock level} = \text{minimum stock level} + \frac{1}{2} \times \text{Re-order quantity}$

$\text{Danger Level} = \text{Average consumption} \times \text{Lead time}$
for emergency purchase

Cable No = 111

$$\frac{1,20,000 \times 100}{4000}$$

7000

- EOQ the or total order and Total carrying cost are minimum
- Total order and Total carrying cost are same.
- or carrying cost = $\frac{1}{2} \times \text{Avg. inv. of } X \times \text{rate of purchase per unit}$
- (b) Re-order level + Re-order quantity - (minimum consumption per day $\times$ minimum lead time) (maximum stock level)
- (c) minimum stock level:-
Re-order level - Average consumption per day $\times$ Average lead time.
- Re-order level
Maximum Re-order period $\times$ maximum usage

EOQ

$2 \times \text{Annual use of Raw material} \times \text{cost/order}$

CCPOP (carry cost per unit per annum)

$$2 \times \frac{1,20,000 \times 100}{2} = 3464$$

$$\text{T.O.C} = \frac{12000 \times 100}{3464} = 3464$$

$$3464 \times \frac{1}{2} \times 2 = 3464$$

$$\text{Total} = 69280$$

- Q. A Ltd produces a product 'X' using a raw material 'D'. To produce one unit of X 4 k.g of D is required. As per the sales forecast conducted by the company, it will be able to sale 20,000 unit of X in the coming year.

The following are the information related to the raw material D:

(i) The Re-order Quantity is 400 k.g. less than in Economic order Quantity (EOQ)

(ii) maximum consumption per day is 40 k.g. more than the average consumption per day

(iii) There is an opening stock 2000 - already has

(iv) Time required to get the raw materials from the supplier is 4 to 8 days

(v) The purchase price is £ 2.50 per k.g.

There is an opening stock of 1800 units of the finished product X

The carrying cost of inventory is 14%.

To place an order company has to incur £ 1,340 on paper and documentation work

(a) Re-order Quantity = $2328 - 400 = 1928$

(b) maximum stock level

(c) minimum stock level

(d) calculate the impact on the profitability of the company by not ordering the EOQ (Take 300 days for a year)

X - 2 →

20,000

↓

1800

18,200

$$D = 18,200 \times 4 = 72,800 - 2,000 = 70,800$$

(a) Re-order Quantity

$$EOQ = \frac{2 \times \text{Annual mo. of Raw material} \times \text{OC/order}}{\text{CCPOPA (Carrying cost per unit per annum)}}$$

$$\frac{2 \times 70,800 \times 1,340}{33} = 2361 \text{ kg. } 2328 \text{ kg}$$

(b) maximum stock level:

$$= \text{Re-order level} + \text{Re-order Quantity} - (\text{Minimum consumption per day} \times \text{Minimum lead time})$$

$$1928 + 2208 + 1928 - (196 \times 4) = 3952$$

working note

$$250 \times 14 = 3500 \text{ (a)}$$

$$R.O.C = \text{Max. cons} \times \text{Max. lead time}$$

$$= \text{Avg Cons} + 40 \text{ kg}$$

↓

70,800

300

(b)

$$= 276 + 40 \times 8 \quad 236 + 40 \times 8$$

$$\Rightarrow 2208 \text{ kg}$$

$$276 \times 8 = 2208$$

A company uses four raw material A, B, C and D for a particular product for which the following data apply

Raw Material	Usage per unit of product (kg)	Re-order per quant (kg)	Price per kg	Delivery period (in week)		Re-order level	Minim level
				min	Avg		
A	12	12,000	12	2	3	60,000	?
B	8	8,000	22	5	6	70,000	?
C	6	10,000	18	3	3	?	250,000
D	5	9,000	20	1	2	?	?

max

4

7

7

3

- minimum stock of A ?
- maximum stock of B ?
- max Re-order level of C ?
- Average stock level of A ?
- Re-order level of D ?
- minimum stock level of A ?

weekly production varies from 550 to 1250 unit, averaging 900 units of the ball product what would be the following quantities:

min: 550, max: 1250, average: 900

a) minimum stock of A

Re-order level = (Average consumption per day $\times$ Average lead time)

$$12000 - (900 \times 3) = 6000 \quad (900 \times 3)$$

$$12000 - 2700$$

$$60000 - (900 \times 12) \times 3$$

$$60000 - 10800 \times 3$$

$$60000 - 32400 = 27600 \text{ Ans}$$

b) max stock of A

ROL + ROL - (Minimum consumption per day $\times$ minimum leading time)

$$70000 + 8000 - 4400 \times 0.5$$

$$70000 + 8000 - 2200 = 75800$$

$$78000 - 22000 = 56000$$

$$78000 - 22000 = 56000 \text{ Ans}$$

C MA Re-order level of C?

maximum Re-order, period $\times$ maximum usage)

$$7 \times (1,250 \times 6)$$

$$7 \times 7500 = 52500$$

(A) Average stock level of A

$\frac{\text{max. cons} + \text{min. cons}}{2}$

$$4 \times 1 \quad 27,600 +$$

$$\frac{27,600}{2}$$

max-stock (A) $\times$ 2

ROL + ROL - (min. C $\times$ min. mix L

$$60,000 + 12,000 - 550 \times 2 \times 1,250 \times 4 \times 2$$

$$72,000 - 1100 \times 5000$$

$$72,000 - 6600 \times 2$$

$$72,000 - 13,200 = 58,800$$

$$\frac{58,800 + 27,600}{2} = 43,200 \text{ kg.}$$

Valuation of Material issue

① First in first out

② Last in first out

③ Average price method

④ Weight average price method

Q:19. The following information is provided by Sunrise

Industries for the fortnight of April.

2021

Stock on 1-4-2021: 100 units at ₹ 5 per unit.

Purchases

5-4-2021, 300 units at ₹ 6

8-4-2021, 500 units at ₹ 7

10-4-2021, 600 units at ₹ 8

Issues

6-4-2021, 250 units

10-4-2021, 400 units

14-4-2021, 500 units

Required

(a) Calculate using FIFO and LIFO Method of

Issuing issue.

L.T.F-0		P.T.F-0	
Date	Receipt D.R.A	Expenditure D.R.A	Balance D.R.A
1-04-2021	-	-	100 X 5 = 500
5-04-2021	300 X 6 = 1800	-	300 X 6 = 1800
6-04-2021	-	-	100 X 5 = 500
6-04-2021	-	100 X 5 = 500	300 X 6 = 1800
6-04-2021	100 X 5 = 500	-	150 X 6 = 900
6-04-2021	150 X 6 = 900	-	-
8-04-2021	500 X 7 = 3500	-	1500 X 6 = 9000
10-04-2021	-	150 X 6 = 900	500 X 7 = 3500
12-04-2021	600 X 8 = 4800	-	250 X 7 = 1750
12-04-2021	-	250 X 7 = 1750	600 X 8 = 4800
14-04-2021	-	250 X 7 = 1750	-
14-04-2021	250 X 8 = 2000	-	250 X 8 = 2800
14-04-2021	-	5450	-
14-04-2021	-	7800	-
14-04-2021	-	5450	-
Material consumed	-	-	-
Balance on 15-4-2021	-	2800	-

Balance	Date	Method	Receipts	Payments	Balance
Q.R.A			Q.R.A	Q.R.A	Q.R.A
100 X 5 = 500	1.04.2021		-	-	100 X 5 = 500
500 X 6 = 1800	5.04.2021		500 X 6 = 1800	-	100 X 5 = 500
100 X 5 = 500	6.04.2021		-	-	300 X 6 = 1800
300 X 6 = 1800					100 X 5 = 500
150 X 6 = 900					50 X 6 = 300
	8.04.2021		500 X 7 = 3500	-	100 X 5 = 500
900					50 X 6 = 300
X 6 = 3500					500 X 7 = 3500
X 7 = 3500	10.04.2021		400 X 7 = 2800	-	100 X 5 = 500
					50 X 6 = 300
X 7 = 1750					100 X 7 = 700
	12.04.2021		500 X 8 = 4000	-	100 X 5 = 500
7 = 1750					50 X 6 = 300
= 4800					100 X 7 = 700
					600 X 8 = 4800
X 8 = 2800	14.04.2021		-	-	100 X 5 = 500
					50 X 6 = 300
					100 X 7 = 700
					100 X 8 = 800
					900

Q.18 // B.T Ltd furnished the following store transactions for September 20X1

1-9-X1	opening balance	85 units @ value ₹ 162,560
4-9-X1	Issues Req. No 85	8 unit
6-9-X1	Received from B.S. Co. 26	50 units @ 5.75 per unit
7-9-X1	Issues-Req. No 97	10 unit
10-9-X1	Return to B.S. Co	10 unit
12-9-X1	Issues-Req. No 108	15 unit
13-9-X1	Issues Req. No 115	20 unit
15-9-X1	Received from M.S. Co. GRN No. 93	25 unit @ 6.10 per unit
17-09-X1	Issues Req. No 121	10 unit
19-09-X1	Return Received Replacement from B.S. Co. GRN No. 98	10 unit
20-9-X1	Returned from department Material of B.S. Co. MRR No. 4	5 unit
22-9-X1	Received from Job 182 to Job 187 in the Dept MTR 6	5 unit
26-09-X1	Issues Req. No 146	
29-09-X1	Received from Dept "A" to Dept "B" MTR 10	
30-09-X1	Shortage in stock taking	10 unit
		2 unit

Sl. No.	Particulars	Rate	Qty	Amount	Sl. No.	Particulars	Rate	Qty	Amount
1	...	...	...	...	13	...	...	...	...
2	...	...	...	...	14	...	...	...	...
3	...	...	...	...	15	...	...	...	...
4	...	...	...	...	16	...	...	...	...
5	...	...	...	...	17	...	...	...	...
6	...	...	...	...	18	...	...	...	...
7	...	...	...	...	19	...	...	...	...
8	...	...	...	...	20	...	...	...	...
9	...	...	...	...	21	...	...	...	...
10	...	...	...	...	22	...	...	...	...
11	...	...	...	...	23	...	...	...	...
12	...	...	...	...	24	...	...	...	...
13	...	...	...	...	25	...	...	...	...
14	...	...	...	...	26	...	...	...	...
15	...	...	...	...	27	...	...	...	...
16	...	...	...	...	28	...	...	...	...
17	...	...	...	...	29	...	...	...	...
18	...	...	...	...	30	...	...	...	...
19	...	...	...	...	31	...	...	...	...
20	...	...	...	...	32	...	...	...	...
21	...	...	...	...	33	...	...	...	...
22	...	...	...	...	34	...	...	...	...
23	...	...	...	...	35	...	...	...	...
24	...	...	...	...	36	...	...	...	...
25	...	...	...	...	37	...	...	...	...
26	...	...	...	...	38	...	...	...	...
27	...	...	...	...	39	...	...	...	...
28	...	...	...	...	40	...	...	...	...
29	...	...	...	...	41	...	...	...	...
30	...	...	...	...	42	...	...	...	...
31	...	...	...	...	43	...	...	...	...
32	...	...	...	...	44	...	...	...	...
33	...	...	...	...	45	...	...	...	...
34	...	...	...	...	46	...	...	...	...
35	...	...	...	...	47	...	...	...	...
36	...	...	...	...	48	...	...	...	...
37	...	...	...	...	49	...	...	...	...
38	...	...	...	...	50	...	...	...	...
39	...	...	...	...	51	...	...	...	...
40	...	...	...	...	52	...	...	...	...
41	...	...	...	...	53	...	...	...	...
42	...	...	...	...	54	...	...	...	...
43	...	...	...	...	55	...	...	...	...
44	...	...	...	...	56	...	...	...	...
45	...	...	...	...	57	...	...	...	...
46	...	...	...	...	58	...	...	...	...
47	...	...	...	...	59	...	...	...	...
48	...	...	...	...	60	...	...	...	...
49	...	...	...	...	61	...	...	...	...
50	...	...	...	...	62	...	...	...	...
51	...	...	...	...	63	...	...	...	...
52	...	...	...	...	64	...	...	...	...
53	...	...	...	...	65	...	...	...	...
54	...	...	...	...	66	...	...	...	...
55	...	...	...	...	67	...	...	...	...
56	...	...	...	...	68	...	...	...	...
57	...	...	...	...	69	...	...	...	...
58	...	...	...	...	70	...	...	...	...
59	...	...	...	...	71	...	...	...	...
60	...	...	...	...	72	...	...	...	...
61	...	...	...	...	73	...	...	...	...
62	...	...	...	...	74	...	...	...	...
63	...	...	...	...	75	...	...	...	...
64	...	...	...	...	76	...	...	...	...
65	...	...	...	...	77	...	...	...	...
66	...	...	...	...	78	...	...	...	...
67	...	...	...	...	79	...	...	...	...
68	...	...	...	...	80	...	...	...	...
69	...	...	...	...	81	...	...	...	...
70	...	...	...	...	82	...	...	...	...
71	...	...	...	...	83	...	...	...	...
72	...	...	...	...	84	...	...	...	...
73	...	...	...	...	85	...	...	...	...
74	...	...	...	...	86	...	...	...	...
75	...	...	...	...	87	...	...	...	...
76	...	...	...	...	88	...	...	...	...
77	...	...	...	...	89	...	...	...	...
78	...	...	...	...	90	...	...	...	...
79	...	...	...	...	91	...	...	...	...
80	...	...	...	...	92	...	...	...	...
81	...	...	...	...	93	...	...	...	...
82	...	...	...	...	94	...	...	...	...
83	...	...	...	...	95	...	...	...	...
84	...	...	...	...	96	...	...	...	...
85	...	...	...	...	97	...	...	...	...
86	...	...	...	...	98	...	...	...	...
87	...	...	...	...	99	...	...	...	...
88	...	...	...	...	100	...	...	...	...
89	...	...	...	...					
90	...	...	...	...					
91	...	...	...	...					
92	...	...	...	...					
93	...	...	...	...					
94	...	...	...	...					
95	...	...	...	...					
96	...	...	...	...					
97	...	...	...	...					
98	...	...	...	...					
99	...	...	...	...					
100	...	...	...	...					

Working Note

* Note: If purchase happens from supplier the good was taken on the same price which the supplier has paid, it will always show on P&L of that day.

* Note: If material will be replacement always shown to the price which has paid. If any other price not given.

* If any material of material the entry will be as follows.

* If any goods are given in question we will treat as follows.

Chapter-2

Material

meaning of Material - All Items used in the manufacture of final products.

EX: 1. Table - wood, nails, glue, oil

2. Pen - plastic ink oil

3

Types of material

(a) Direct Material: → Incorporated in the final product. In short, its cost is directly attributable to the final product.

EX: 1. Pen ₹ 2 Kg @ ₹ 5/Kg = ₹ 10 Per Pen

(b) Indirect Material: → an auxiliary (supporting) material and cost is not directly attributable.

→ Pen machine
Output:

--

~~Pen~~ → Product

production is not interrupted

- ① Items to be deducted (2) Items to be added/Excluded
- (a) Trade discount (a) Insurance charges - add
(b) Freight inward - add
(b) Quantity discount (c) Commission or Brokerage - add
(c) Import/Export duties/subsidies (d) Basic Custom duty - add
(e) Road tax / Toll tax - added
(f) Integrated goods and services
→ G.S.T
→ C.G.S.T

* cash discount is not to be deducted from purchase price.
It is treated as interest and financial charges.

* Freight should not form part of cost of purchase unless mentioned specifically.

* Retention charges, penalties, demurrage are abnormal costs and therefore charged to carrying freight loss account.

* Cost of containers to be added only to the extent of refund not given i.e. cost paid for containers - Refund.

Material purchased = 1000 kg
 Purchase price = 100 per kg
 Trade discount = 10% on purchase
 Freight Inwards = 200
 Inv. (credit available) = 300
 $1000 \times 10 - 10\%$
 $9000 + 200 = 9,200$

Cost per kg = $\frac{\text{Total Cost}}{\text{Total kg}}$ = $\frac{9200}{1000} = 9.2 \text{ per kg}$

SHORTCUT



- | | | |
|-----|---|--|
| (1) | Normal Loss | 2. Abnormal Loss |
| - | Unavoidable | - Avoidable |
| - | Evaporation, Leakage etc. | - Theft, Pilferage |
| - | Cost of Normal Loss is absorbed by good input | - Cost of Abnormal Loss is charged to |
| | | → Input - Normal Loss absorbed to getting profit |
| | Cost per unit increases | Loss etc. |

Total cost 9200

cost per unit = $1000 - 50$
= 950

$\frac{9200}{950} = 9.68 / kg$

Inventory control

→ something within certain limits.

Quantitative levels. Relative classification using ratio

- Reorder level ABC analysis Bulk-out
- Reorder quantity - EOQ Just, slow & nonmoving Inventory
- maximum stock level vital, essential, desirable turnover.
- minimum stock level High medium & Low
- Average stock level
- range level
- buffer stock

Physical control

Two big system

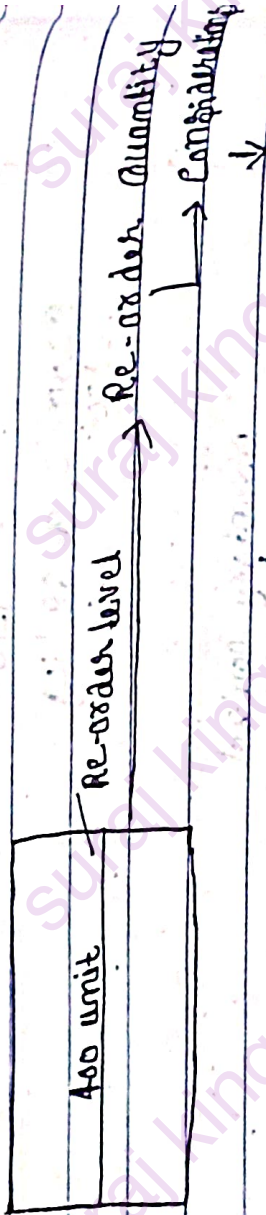
Est-ck system of budget

continuous stock

periodical stock

Re-order Quantity

Warehouse



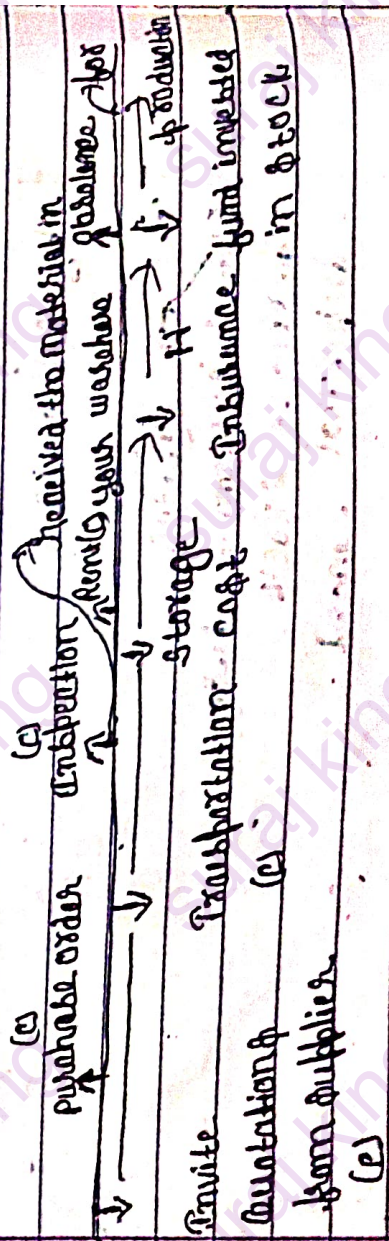
Cost - is minimum

Total cost



① purchase value ② ordering cost ③ carrying cost / holding cost

Eg 1000 units @ ₹ 10/unit = 10000



Total carrying cost

→ How much inventory we are carrying

Total carrying cost

How much inventory we are carrying - $\frac{1}{2}$ of order size
Standard deviation $\frac{1}{2}$ of order size

↓

Average stock

order size = 2000 kg

Average stock = $\frac{1}{2}$ of 2000 kg = 1000 kg

→ Carrying cost per unit per annum (C.C.P.U.P.A.)
(C.C.P.U.P.A. for one unit for the entire year)

C.C.P.U.P.A = ₹ 10

Total carrying cost = Average stock $\times$ C.C.P.U.P.A

= 1000 $\times$ 10 = 10,000

Total ordering cost

Ex Annual requirement of material = 10000 kg

Order size

2000 kg

Quantity ordered at each order

Number of order

Annual requirement of material

order size

Ordering cost per order = number of order $\times$ ordering cost per order

$$5 \times 2000 = 10000$$

Raw Material - material

↓
purchase price
↓
adding carrying cost

100 unit of A.M @ each / cost associated with purchase of the inventory = 900/-

Material Eg: Garbharnare

E.g. transportation cost, storage & inspection cost, cost of

cost of inventory valuation fund

documentation cost like inventory

preparation of purchase in inventory

order, handling cost of such

material etc. - obsolescence

etc.

Total ordering cost

Annual Requirement of Raw Material = 10,000 units
no. of units ordered to order size = 2000 units
at particular point of time

Annual Req. of Raw Material

order size

Always provided in Q. ordering cost per order = 5000/
Question, Total ordering cost = 5000×5
= 25000 /

number of X ordering cost
orders per order.

Total carrying cost

Avg. stock = $\frac{1}{2} \times \text{order size}$

warehouse = $\frac{1 \times 2000}{2}$

= 1000 unit

Qty of stock that will be maintained in warehouse throughout the year.

Avg. stock $\times$ carrying cost per unit per annum =

Total carrying cost.

एक unit की मात्रा को warehouse में रखा जायेगा

Assume: carrying cost per unit per annum

Total carrying cost = $1000 \times 20 = 10,000/-$

Find if that order size at which sum of total carrying cost & total carrying cost is minimum.

Economic order quantity

Size of an order for which sum of total ordering & total carrying cost is minimum

→ Purchase ordering cost ↓ but Total carrying cost ↑

Reverse: Total ordering cost ↑ but Total carrying cost ↓

How to compute EOQ?

$$EOQ = \sqrt{\frac{2AO}{C}}$$

A = Annual consumption of Raw Material
O = ordering cost per order
C = carrying cost per unit per annum

Q.1

Annual consumption = 10,000 unit

ordering cost = ₹ 50/order

Purchase price = ₹ 80 per unit

carrying cost per unit = ₹ 5

for EOQ

$$EOQ = \sqrt{\frac{2 \times 10000 \times 50}{5}}$$

Annual consumption = 10,000 unit

ordering cost = ₹ 50/order

carrying cost per unit = ₹ 5

Purchase price = ₹ 80 of 5-1-4

$$EOQ = \sqrt{\frac{2 \times 10000 \times 50}{5}} = 500 \text{ unit}$$

Q:2

✓ Weekly usage of Raw Material = 100 unit
Annual demand = 5000 unit
Ordering cost per order = ₹ 40/order
Carrying cost per unit = ₹ 10 per annum
Find EOQ, total ordering cost, total carrying cost

$$EOQ = \sqrt{\frac{2AO}{C}}$$

$$A = \text{Annual consumption} = 500 \times 52 = 5200$$

$$\text{Ordering cost per order} = 40/\text{order}$$

$$\text{Carrying cost per unit} = 10 \text{ per annum}$$

$$EOQ = \sqrt{\frac{2 \times 5200 \times 40}{10}} = \sqrt{41600} = 204 \text{ unit}$$

Note: When Annual demand given in question, it will ignore because Annual demand is only work on finished good stock in Raw Material.

Total ordering cost

$$\text{No of orders} \times \text{ordering cost per order}$$

$$\text{Annual cost} = 5200 = 25.40 = 26$$

$$\text{Order size} = 204$$

$$2540 \times 40 = 1016$$

$$26 \times 40 = 1040$$

Total carrying cost

$$\text{Avg. stock} = \frac{1}{2} \times \text{order size}$$

$$= \frac{1}{2} \times 204 = 102$$

Total carrying cost = Average stock $\times$ carrying

cost per unit per annum

$$= 102 \times 10 = 1020$$

Fundamental principle: * At EoQ level, Total ordering

cost is always equal to total

carrying cost.

Statement of Proposed Analysis

A	Total purchase price At EOQ level 500	AT order size of 1000 22,50,000 50,000 X 45	End of order month
B	Number of order	Annual concept = 50,000 = 100 / order size 500	Total order discount in ann. cost
C	ordering cost 5 /	5 / -	The purchase cost of materials
D	Total ordering cost : 100 X 5 = 500	50 X 5 = 250	price of p R.S
E	Avg stock : $\frac{1 \times 500}{2} = 250$	$\frac{1 \times 1000}{2} = 500$	1,200 1,180 1,160 1,140 1,120
	Carrying cost per unit per annum 2 /	2 / ordered	The annual delivery cost and the p material co
	Total carrying cost = $\frac{2 \times 500}{2} = 500$	1000	

Ex: Order size at which sum of total ordering cost & total carrying cost is minimum

total cost may be minimum of vendors offer candidate discount if that amount of EOQ level any other cost can be ordered.

Important Question

The purchase department of your organization has received an offer of quantity discount on its order of materials as under

price of per tone	R.S	order size	Tonnes
1,200		400 /	less than 500
1,180		500 /	500 and less than 1000
1,160		1000 /	1000 and less than 2000
1,140		2000 /	2000 and less than 3000
1,120		3000 /	3000 and above

The annual requirement for the material is 5000 tonnes. The delivery cost per order is cost per order is Rs 1200 and the stock holding cost is estimated at 20% of material cost per annum.

Note: Repeating the the mo of

Statement of Probable Amalgams

Advice: Set up Qd						Unit
Particulars	400	500	1000	2000	3000	
Total purchase price	6000000	5000000	5000000	5000000	5000000	
Order size (1200X500)	1200X500	1200X500	1200X500	1200X500	1200X500	
No. of orders (Annual)	5000 = 12.5	5000 = 10	5000 = 5	5000 = 2.5	5000 = 1.67	
Order size	400	500	1000	2000	3000	
Ordering cost	1200	1200	1200	1200	1200	
Total ordering cost	15000	12000	6000	3000	2000	
Avg. Stock	1800 = 200	250	500	1000	1500	
Carrying cost per unit per annum	1200X201	1800X201	1600X201	1400X201	1200X201	
	240	236	232	228	224	
Total carrying cost	200X240	250X236	500X232	1000X228	1500X224	
	48000	59000	116000	228000	336000	
At + B [Total cost	6000000 + 15000 + 48000	5000000 + 12000 + 59000	5000000 + 6000 + 116000	5000000 + 3000 + 228000	5000000 + 2000 + 336000	

$$= 69,63,000 - 59,19,100 = 59,24,100$$

Note: Regarding the organization as going concern for the no of nearest if not round off.

Advice: It is advisable to management to order 1000 unit at a time to minimize total

cost.

Price per tonne	Order size	Tonnes number
Rp 9600	450	less than 50
Rp 9360	50	50 and less than 100
Rp 9120	100	100 and less than 200
Rp 8800	200	200 and less than 300
Rp 8640	300	300 and above

Statement of purchases Analysis		②		F.O.D - J A.O C	
Particulars	400	50	100	200	300
A Total purchase per	48000000	468000	912000	176000	2592000
B No of order	$\frac{500}{45} = 11.11$	$\frac{500}{50} = 10$	$\frac{500}{100} = 5$	$\frac{500}{200} = 2.5$	$\frac{500}{300} = 1.67$
(C) ordering cost	12,500 156250 138750	12,500	12,500	12,500	12,500
d Total ordering cost	11,11 x 12,500	1,250,000	62,500	31,250	20,815
(e) Avg stock	$\frac{1}{2} \times 400 = 200$	25	50	100	150
(f) carrying cost per unit per annum	9600 x 25 = 187248000	9360 x 25 = 234000	9120 x 25 = 228000	8800 x 25 = 220000	8640 x 25 = 216000
Total carrying cost	187248000	48000	479600	469200	466200
At + d + g	49,13000	486350	47,2600	4699250	4664,875
Total purchase No of order ordering cost = Total ordering cost Avg stock = C.C.P.U.A = Total carrying Total cost:					

②

300

100

2000	1760000	2592000
------	---------	---------

$$\frac{500 = 2.5}{2.00} \frac{500}{300} = 1.67$$

500	12,500	300
500	12,500	300

500	31,250	20,875
-----	--------	--------

8640X201-
2160
17980

A

2

9

५

५७

५

57

५.

Stock Level / Inventory Control

Re-order stock level: when to order

max comp x maximum Re-order period

minimum stock level = Re-order stock level + Avg comp x

Avg Reorder period

min stock level + $\left[\text{Avg} \times \text{Avg} \right]$
Comp. Time = Re-order stock level

max stock level = Reorder + min comp x min time period

minimum rate of consumption

Stock level $\rightarrow$ minimum stock level + max stock level

2

or

Avg. minimum stock level + $\frac{1}{2}$ Re-order qty

Two components A & B are used as follows

Req-usage/normal usage = 50 per week each

Maximum usage = 75 per week each

Minimum usage = 25 per week each

Re-order quantity: A = 300, B = 500

Re-order period: A = 4 to 6 weeks

B = 2 to 4 weeks

Find for each component (a) Re-order level

(b) Minimum level

(c) Maximum level

(d) Avg. stock level

(a) Re-order level = max consumption $\times$ maximum reorder period

$$75 \times 6 = 450 \quad (B = 75 \times 4 = 300)$$

(b) Minimum level = Re-order stock level - Average consumption $\times$ Average reorder period

$$\text{Average consumption} = A = 450 - (5 \times 50) = 450 - 250 = 200$$

$$B = (75 \times 2) = 300 - 225 =$$

$$B = 75 \times 4 = 300 - (2 \times 50)$$

$$300 - 150 = 150 \text{ units}$$

Maximum level

$$A = 450 + 300$$

$$A = 450 + 300$$

$$= 750 - 1$$

$$B = 300 + 50$$

$$= 300 +$$

$$= 800 -$$

Average stock

25

$$A = 200 + 6$$

$$B = 150 +$$

maximum level = Re-order level + Rate of quantity -
minimum consumption X minimum

time period

$$A = 450 + 300 - 25 \times 4$$

$$A = 450 + 300 - 100$$

$$A = 750 - 100 = 650$$

$$B = 300 + 500 - 25 \times 2$$

$$= 300 + 500 - 50$$

$$= 800 - 50 = 750$$

Average stock level = minimum stock level + maximum
stock level

2

$$\frac{250 + 750}{2} = 500$$

$$A = \frac{200 + 650}{2} = 425$$

$$B = \frac{150 + 750}{2} = 450$$

Ordering cost per order = ₹ 20

Number of units purchased = 5000

Purchase price per unit = ₹ 50

Annual cost of storage per unit = ₹ 5 p.a

Detail of lead time = Avg 10, max - 15 days, minimum - 5 days

For emergency purchases = 4 days

Rate of consumption = Avg - 15 unit per day

Maximum - 20 unit per day

Find the re-ordering level

(a) maximum level

(c) maximum level

(d) danger level

(a) Re-order level = Max. consumption $\times$ Maximum order period
 $15 \times 20 = 300$

(b) Maximum level = Re-order level + Rate of quantity -
Minimum consumption $\times$ minimum time
period

$300 + 15 - \frac{5000}{50} \times 20 = \frac{5000}{50} \times 20 = 200$ unit

300 + 15 =

Avg = max

$15 = \frac{20 + 10}{2}$

$30 = 20 \times$

$30 - 20 =$

$\therefore 10$

$300 + 200 =$

$500 - 150$

$\therefore 350$

$300 + 200 =$

$500 - 50$

(c) minimum

Danger level

$$300 + 15 = 300 + 45,000$$

$$\text{Avg} = \frac{\text{max} + \text{min}}{2}$$

$$15 = \frac{20 + \text{min}}{2}$$

$$30 = 20 + \text{min}$$

$$30 - 20 = \text{min}$$

$$10$$

$$300 + 200 = 10 \times 15$$

$$500 - 150$$

$$350$$

$$300 + 200 - 10 \times 5$$

$$500 - 50 = 450 \text{ Ans}$$

(c) minimum level = $\frac{1}{2} \times \text{Re-order quantity}$

$$= \frac{1}{2} \times 300 = 150 \text{ unit}$$

D Average level = Average consumption $\times$ Lead time for emergency purchase

$$= 15 \times 4 = 60$$

Q.2

ordering cost per order = ₹ 20

Number of units purchased = 5000/

Purchase price per unit = ₹ 50/

Annual cost of storage per unit = ₹ 5 P.A.

Detail of lead time = Avg 10, max 15 days, minimum 5 days
for emergency purchases = 4 daysRate of consumption - Avg - 15 unit per day
maximum - 20 unit per day.

find (a) Re-ordering level

(b) maximum level

(c) minimum level

(d) danger level

$$(a) \text{ Re-order level} = \text{Max. consumption} \times \text{maximum order period} \\ 15 \times 20 = 300$$

$$(b) \text{ maximum level} = \text{Re-order level} + \text{Rate of quantity} - \\ \text{minimum consumption} \times \text{minimum time period}$$

$$300 + 15 - \text{Rate of quantity} \quad \sqrt{2 A \cdot C}$$

$$= \frac{5000}{50} \times \frac{20}{50} = \sqrt{40,000} = 200 \text{ unit}$$

$$300 + 15 = 300 + 40,000$$

$$\text{Avg} = \frac{\text{max} + \text{min}}{2}$$

$$15 = \frac{20 + \text{min}}{2}$$

$$30 = 20 + \text{min}$$

$$30 - 20 = \text{min}$$

$$10$$

$$30 = 20 + \text{min}$$

$$30 - 20 = \text{min}$$

$$10 = \text{min}$$

$$300 + 200 = 10 \times 15$$

$$500 - 150$$

$$350$$

$$300 + 200 - 10 \times 5$$

$$500 - 50 = 450 \text{ Ans}$$

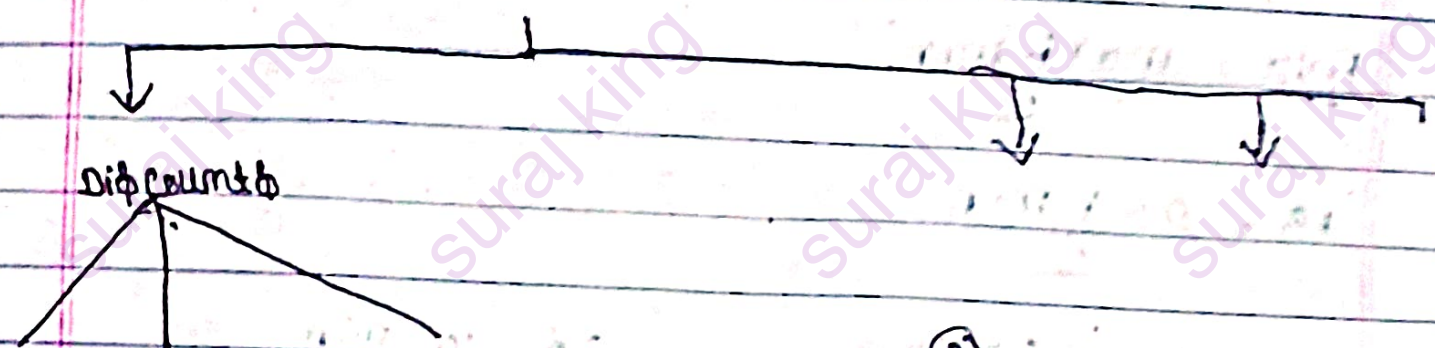
$$(c) \text{ minimum level} = \frac{1}{2} \times \text{Re-order quantity}$$

$$= \frac{1}{2} \times 300 = 150 \text{ unit.}$$

$$(d) \text{ Danger Level} = \text{Average consumption} \times \text{Lead time for emergency purchase}$$

$$= 15 \times 4 = 40 \quad 15 \times 4 = 60$$

Landing price



- | | | |
|----------------|--------------|-----------------------|
| Trade discount | Qty discount | Other discounts |
| (-) | (-) | (Ignore other name) |
| ✓ | ✓ | (Discount, Incentive) |
| | | (-) |

(3) Duties & Taxes

- (a) - Road tax / toll tax (+)
 (b) - In.S.T.
 { IGST, CGST, SGST }
 (Ignore)

C. Basic consumption tax (+)
 duty
 (No Input tax credit)

Other Expenditure

- | | | |
|---|---|-------------------|
| | Added | with can be avoid |
| 1 | Insurance charges (✓) | penalty |
| 2 | Commission or brokerage paid (✓) | Detection charges |
| 3 | Freight Inward (✓) | |
| 4 | Cost of container (to the extent and in non refundable) | |

8-12 number.

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The following details in respect of consignment of 1250 kg of material in

- (a) Invoice price = Rs 30
- (a) Invoice price - Rs 20/kg
- (b) 1-5-1 8% on Invoice price
- (c) Trade discount - 5% on Invoice price
- (d) Insurance 1% of aggregate cost
- (e) Delivery charges - Rs 250
- (f) Cost of containers at Rs 60 per container is 50 kg of material, weight allowed at Rs 40/gs. container is returned of which 6 weeks which is normal feature.

One container load of material was rejected on inspection, not accept.

Cost of unloading and holding are 0.25.

Solution

Consignment of 1250 kg of material in

$$1250 \times 20 =$$

25000

$$(-) T.d =$$

(2500)

(A) Insurance 1% on Invoice

22500

225

22,725

Delivery charges

250

22,975

Inventory Turnover Ratio

Help in determining that how fast inventory of raw material is moving

⇒ Higher ratio indicate fast movement.

opening + purchases - closing stock

$$= \frac{\text{Cost of Raw Material Consumed}}{\text{Avg Inventory}}$$

Time period for which Inventory is held / Avg
Holding period = 360 / 12 / 32 / 36.5
ITR

$$\text{Avg Inventory} = \frac{\text{opening} + \text{closing}}{2}$$

opening stock = 20,000

Purchases = 1,270,000

closing stock = 1,10,000

calculate

(a) Inventory turnover ratio

(b) No of days for which Inventory is held

Inventory Valuation (A.S-2)

Trading
org

→ finished
goods

manufacturing org

- Raw material
- work in progress
- stores & spares
- packing material
- finished goods

Method of Inventory Valuation:

Hypothetical
cost

Method

- Adjusted selling
price method



where it is not
possible to find
cost of every
individual unit

Prescribe
by A.S-2

→ FIFO (first in first
out)

→ LIFO (last in first out)

→ weighted Avg. method

→ Simple Avg method

→ Specific identification
Cost

when
Inventory
is deal on
regular basis

when inventory
is not deal on
regular basis

Chapter: 3

labour cost / Employee cost

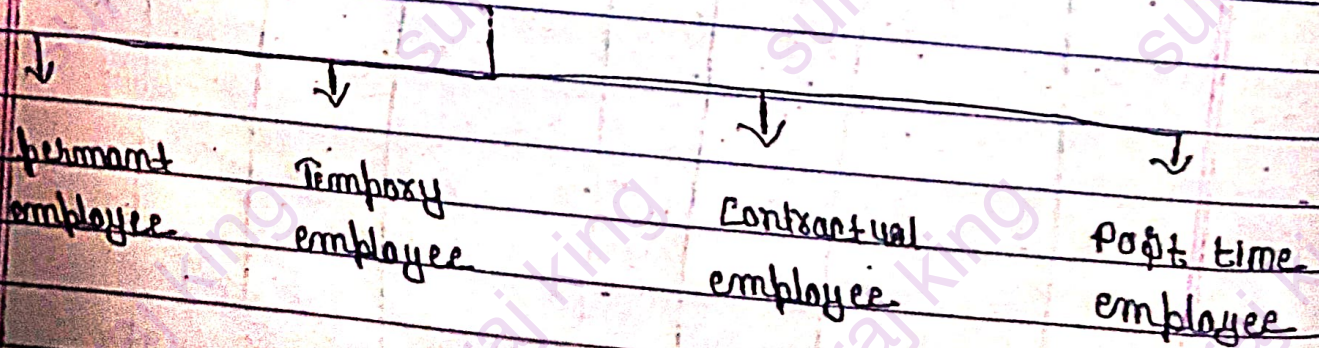
Introduction

1. Labour cost is also known as employee cost [C.A.S-7]
2. Labour cost is classified as direct labour and indirect labour

3. Labour is an important element of cost to overall cost capital and cost reduction

Meaning

A.S per CAS-7 Employee/Labour cost is the benefit paid or payable in all form of consideration gives for the services rendered by employee.



Concept of effective working hours

effective working hour

Total hour spent in factory / Actual working Hours
- Idle hours

Idle Time / Hours

↓
Normal Idle Time

↓
Abnormal Idle Time

It is inherent in a nature in any job situation and thus It cannot eliminated or Reduce

It is A time as an Idle time that arises an Account of Abnormal causes

ex Land, Labour, Lunch Break

Labour, & Machine, Break down

The cost of Normal Idle time is transfer to factory overhead and charged to the cost of production

The cost of Abnormal idle time is transfer to the debit of cost side of company costing P&L A/c

concept of effective wages rate

E.K. Hour Ke Kitna payment dia jata hai worker ko
usko hum effective wages rate bolte hai

$$\text{Effective Wages Rate} = \frac{\text{Total Labour cost}}{\text{effective working hours}}$$

Statement showing calculation of Total cost

Particular	Amount
Basic wages	XXX
Add: Dearness Allowance	XXXX
Add: Other Allowance	.
⇒ House Rent Allowance	
⇒ Travelling Allowance	
Add: Prequisite	
Add: Bonus	
Add: Commission	
Add: employer contribution toward-	
⇒ P.F.	
⇒ E.S.I.	
⇒ Gratuity	
⇒ Pension	
Total Labour cost	

Question

Basic pay = 1000 P.m

D.A = 200 P.m

Bonus @ 20% of salary $\rightarrow$ (Basic + D.A)

Other Allowance = 250 P.m

employer cost toward P.F = 10% of salary

Actual working H.R = 2400 H.R

Non production H.R = 400 H.R

Find out effective wages Rate ?

Statement of Total cost

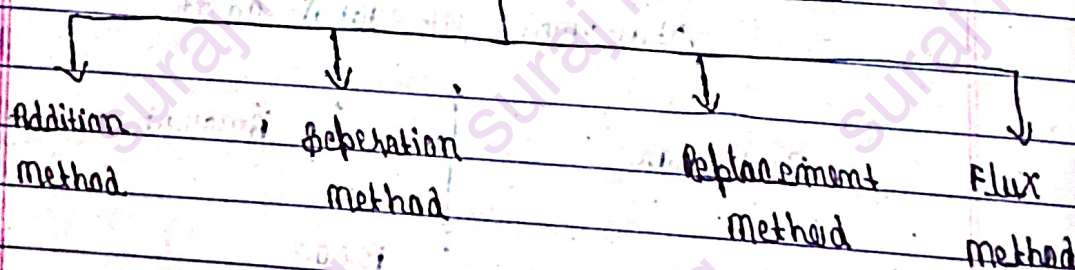
Particular	Amount
Basic pay	12000
D.A	2400
Other Allowance	3000
Bonus 20%	14,400 2,880
employer cost toward P.F @ 10%	1,440
Total Labour cost	<u>18,800</u>
	21,720
effective wages Rate =	$\frac{18,800}{2000} = 9.4$

Labour Turnover Ratio

Labour turnover of an organisation is change in the labour force during a specific period.

Labour turnover ratio ka matlab hota hai ki kitne labour aate hai or kitne labour jate hai ek specific period mai. Labour ki volume jo change aate hai usko Labour turnover Ratio khte hai.

Measurement of Labour Turnover



Is method mai hum yha dekhte hai ki ek particular period ma kitne employee labour Add hote hai.

Is method mai hum yha dekhte hai ki ek particular period ma kitne employee labour leave hua hai.

Is method mai Is method mai hum yha dekhte hai ki labour kitne employee add or Replace hua hai.

Labour Turnover

① Addition Method

② Separation Method

③ Replace Method

④ Flux Method

Avg number of

Labour Turnover Ratio

$$① \text{ Addition Method} = \frac{\text{Number of Worker Addition} \times 100}{\text{Avg Number of Worker}}$$

$$② \text{ Separation Method} = \frac{\text{Number of Worker Separation} \times 100}{\text{Avg Number of Worker}}$$

$$③ \text{ Replace Method} = \frac{\text{Number of Replace Worker} \times 100}{\text{Avg Number of Worker}}$$

$$④ \text{ Flux Method} = \frac{\text{No of Addition} + \text{No of Separation}}{\text{Avg Number of Worker}}$$

$$\text{Avg Number of Worker} = \frac{\text{opening} + \text{closing Worker}}{2}$$

Note

Replacement = No of Replacement = 20

No of New Employee = 10

No of Addition = No of Replace + No of New employee.

or = $20 + 10$

No of Accession = 30

* Replace Method = $\frac{\text{Number of Replace worker} \times 100}{\text{Avg number of worker}}$

① 5×30

Avg number of worker.

$5 \times \text{Avg number of worker} = 30$

Avg number of worker = 600

② Separation Method = $\frac{\text{Number of worker separation} \times 100}{\text{Avg number of worker}}$

$3.1 \times \frac{\text{Number of worker separation}}{600}$

18 = Number of worker separation

Flux Method = $\frac{\text{No of Addition} + \text{No of Separation}}{2}$

Avg number of worker.

$$10.1 = \frac{20 \times 18}{2}$$

$$600$$

$$10 = \frac{48 \times 600}{2}$$

$$10 = 48 \times 300$$

$$10 = 14,400$$

$$10.1 = \text{No of Add} + \text{No of Separation}$$

$$10.1 = \text{No of Addition} + 18$$

$$600$$

$$60 = \text{No. of Addition} + 18$$

$$42$$

$$42 = \text{No of Addition} = 18$$

$$42 - 18 = \text{No of Addition}$$

$$\text{No. of Addition} = 42$$

$$\text{Replaced} = 30$$

$$\text{New employee} = 12$$

Concept of efficiency

on the basis of
Time

on the basis of
output

on the basis of Time

Standard Hour = 8 Hr
Actual Hour = 100 Hr

[Kisi bhi kaam ko start krne se phle
jab hum Time/Hour ka Estimate krte
hai usko Standard time/Hour krte hai]

$$\text{Efficiency} = \frac{\text{Standard Hour}}{\text{Actual Hour}} \times 100$$

$$\text{Efficiency} = \frac{150}{120} \times 100 = 125$$

on the basis of output

Standard output = 100 unit

Actual output = 90 unit

$$\text{Efficiency} = \frac{\text{Actual output}}{\text{Standard output}} \times 100$$

concept of Total earning

Total earning = Normal wages + Incentive / Bonus

method of wages payment

Time Rate System



under this method, a wages rate per hour are fixed in Advance and total wages of a worker is computed by multiplying the wages Rate with the hour worked by worker.

Wages = $\frac{\text{Total Hour} \times \text{wages Rate}}{\text{worker}} \quad \text{Per hour}$

Piece Rate System



under this method, a piece rate per unit is fixed in Advance and the total wages of a work are computed by multiplying the piece rate with the total piece produce by the worker.

Total unit produce =
wages = $\frac{\text{Total price} \times \text{wage}}{\text{produce Rate per price}}$

Premium Bonus / Incentive Method

Halsey premium plan

Rowan premium plan

Halsey premium plan: Halsey Support Time Rate System
According to Halsey premium plan If the worker complete his job before the time Allowed to him then the bonus shall be given to the him

As per Halsey the bonus should be 50% of time saving wages

EX: Standard time = 10 hour → Time Allowed
Actual time = 8 hour → Time taken
Wages Rate = 150 / hour
Find total earning?

Total earning = wages + Bonus

$$= (8 \times 150) + (150 \times 2) \times 50\%$$

$$1200 + 150 = 1,350$$

$$14.4 + \frac{48 \times 3.6}{60} = 14.4 + \frac{2.88}{1} = 17.28$$

$$14.4 + \frac{48 \times 12}{60} = 14.4 + 9.6 = 24$$

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As per Rowan plan Bonus calculated as under

$$\text{Bonus} = \frac{\text{Time Taken}}{\text{Time Allowed}} \left(\frac{\text{Time} \times \text{Wages Rate}}{\text{Saved per hour}} \right)$$

$$\text{Total earning} = (8 \times 150) + \frac{8}{10} (2 \times 150)$$

$$= 1200 + 240 = 1440$$

Illustration: 6

Time Rate (per hour)	₹ 60
Time allowed	8 hours
Time taken	6 hours
Time saved	2 hours

$$\text{Total earning} = \text{Wages} + \text{Bonus}$$

$$= 8 \times (6 \times 60) + 156$$

$$6 \times 60 + 2 \times 60 \times 50$$

$$360 + 60 = 420 \text{ Ans}$$

$$\text{Total earning} = 6 \times 60 + \frac{6}{8} (2 \times 60)$$

$$= 360 + 6 \times 120$$

$$= 360 + 90 = 450 \text{ Ans}$$

Concept of overtime.

- ①. Work done beyond the Normal working Hour is known as overtime work.
2. The wages paid for Hour beyond the Normal working Hour is known as overtime premium/wages.
3. In India overtime wages is paid According to the factor Act, 1948 i.e. Double the wages Rate.
4. The Factory Act is not Applicable to an employee then overtime wages are paid as per agreement between employer & employee.
5. As per factor Act, a worker work in a factory for more than ⁹ hours in a day or for more than 48 hours in a week. He/she is entile to Received overtime or Double the normal wages Rate.

Treatment of overtime.

- ① When overtime due to = urgency of work. Overtime should be treated as factory overhead/directly charged to the job.
- 2 If overtime done at the = Request of customer. Overtime should be charged to the job.
- 3 When overtime is done due to lack of capacity as normal policy of the company [shortage of workers] overtime should be treated as labour cost employee cost.
- 4 When overtime is done due to Abnormal situation. Overtime should be charged in costing P&L.
- 5 When overtime is done due to meet the Requirement of production. Overtime should be treated as factory overhead.

Illustration : 3

Calculate the earnings of A and B from the following particulars for a month and allocate the employee cost to each job X, Y and Z.

Particulars	A	B
Basic wages (₹)	10,000	16,000
Dearness Allowance	50%	50%
Contribution to P.F (on basic)	8%	8%
Contribution to employee's	2%	2%
State Insurance (on basic)		
Overtime (Hours)	10	—

Solution Statement showing Earnings of worker A and B

Particulars	A	B
Basic wages	10,000	16,000
Dearness Allowance	50% 5,000	8,000
Overtime	1,500	—
Contribution to P.F	(800)	(1,280)
State Insurance	(200)	(320)
	15,500	22,400

Working Notes.

$$2 \times \text{Basic wages} + \text{O.A.T.O} = 2 \times 15000 \times 10 = 150000$$

100 10 200

Statement of Employee Cost

Particulars	A(₹)	B(₹)
Basic wages (excluding overtime)	15000	24000
Add: P.F	800	1280
Add: E.S.I	200	320
Basic wages cost	16000	25600
Normal wages working ordinary wages rate	200	200
	80	128

Illustration: 13

Basic pay	10,000 P.m
D.A	3,000 P.m
Fringe benefits	5,000 P.m

① Effective working days on full pay 300

Less: Leave day on full pay 20

280 days

Total effective working hours = $280 \times 8 = 2,240$

Basic pay : $10,000 \times 12 = 1,20,000$

D.A $3,000 \times 12 = 36,000$

Fringe benefits $5,000 \times 12 = 1,20,000$

1,68,000

Hourly rate = $\text{₹ } 1,68,000 / 2,240 = \text{₹ } 75.00$

Illustration : 5

overtime Rate

Normal working Rate = 100 / hour

overtime before & After = $100 \times 175\% = 175 / Hr$

overtime on Sunday / Holiday = $100 \times 225\% = 225 / Hr$

Statement Showing wage Rate / Hour (including overtime)

wages (1,00,000 X 100) = 1,00,00,000

overtime

Before & After (20,000 X 175) = 35,00,000

Sunday & Holiday (5,000 X 225) = 11,25,000

Total wages

1,46,25,000

wage Rate / Hour = $\frac{1,46,25,000}{1,25,000} = 117 / hr$

⑥ overtime wages is treated as a part of labour employee cost.
= $1125 \times 117 = 1,31,62.5$

$$75 + 25 \times 125$$

$$= 75 +$$

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overtime wages is treated as a part of labour/employee cost and normal wages is also the part of employee cost

chargeable to Job Z

(normal wages + overtime) $\times 117$

$$(100 + 125) \times 117$$

$$1,125 \times 117 = 1,31,625$$

(ii) normal wages is the part of employee cost & overtime wages is a part of factory overhead

employee cost chargeable to Job Z

$$H\&A \ 1,125 \times 100 = 1,12,000$$

factory overhead

$$100 \times 75 + H\&A \ 125 \times 25 = 10,625$$

$$7500 + 3,125 = 10,625$$

1. Calculation of hours to be paid for worker A:

	Normal Hours	Extra Hours	Overtime hours	Equivalent normal hour	Total normal hours
Monday	8	1 hour	1.5 hour	3 hours	12 hours
Tuesday	8	-	-	-	8 hours
Wednesday	8	1 hour	1.5 hours	3 hours	12 hours
Thursday	8	1 hour	1.5 hours	1 hour	10 hours
Friday	8	1 hour	1.5 hours	3 hours	12 hours
Saturday	-	-	-	-	-
Total					
Total	40	4	5 hours	10 hours	54

Calculation of hours to be paid for worker B

	Normal hours	Extra Hours	Overtime hours	Equivalent normal hour	Total normal
Monday	8	-	-	-	8
Tuesday	8	-	-	-	8
Wednesday	8	-	-	-	8
Thursday	8	-	-	-	8
Friday	8	-	-	-	8
Saturday	4	4*	-	-	8
Total	44	4	-	-	48

Calculation of hours to be paid for working

	Normal hours	Extra hours	Overtime hours	Equivalent normal hours	Total normal
Monday	8	1	1.5	3 hours	8 12
Tuesday	8	-	-	-	8 8
Wednesday	8	1	1.5	3 hours	8 12
Thursday	8	0.5	0.5	1 hour	8 10
Friday	8	1	1.5	3 hours	8 12
Saturday	4	4	-	-	8 8
	44	8	5	10	8 62

Wages payable

	A	B	C
Basic wages per hour	25 (200)	12.5 (100)	37.5 (300)
Dearness allowance per hour	5.50	5.50	5.50
Hourly rate (£) hourly rate	30.50	18.00	43.00
Total normal hours	54	48	62
Total wages payable	1,964	864	2,666

chapter-4

overhead Absorption costing method

overview

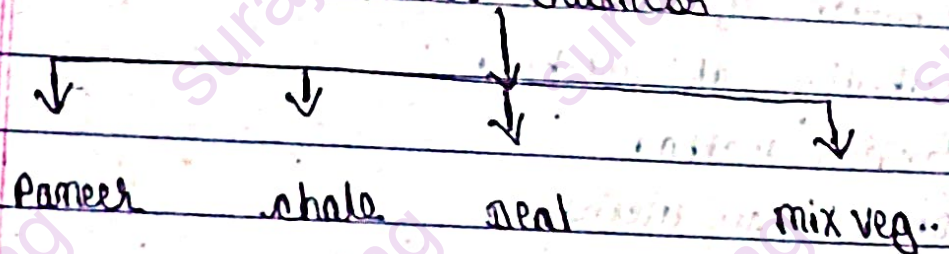
- 1 meaning of overhead
- 2 classification of overhead
- 3 distribution of overhead
 - (a) primary distribution of overhead
 - (b) secondary distribution of overhead
 - (i) Direct Distribution of overhead
 - (ii) step Distribution of overhead
 - (iii) Reciprocal services method
 - iv Repeated Distribution method
 - v Simulation Equation method
 - vi Trial & error method
- 4 Recovery / Absorption of overhead
- 5 machine Hour Rate
- 6 over & under Absorption of overhead.

meaning of overhead

- ① Sum of All Indirect expense is known as overhead
- ② Indirect cost include Indirect material Indirect labour + Indirect expenses
- ③ overhead cost is not directly charged to the particular product But It can apportioned or Absorbed.

Example

Reetro Business

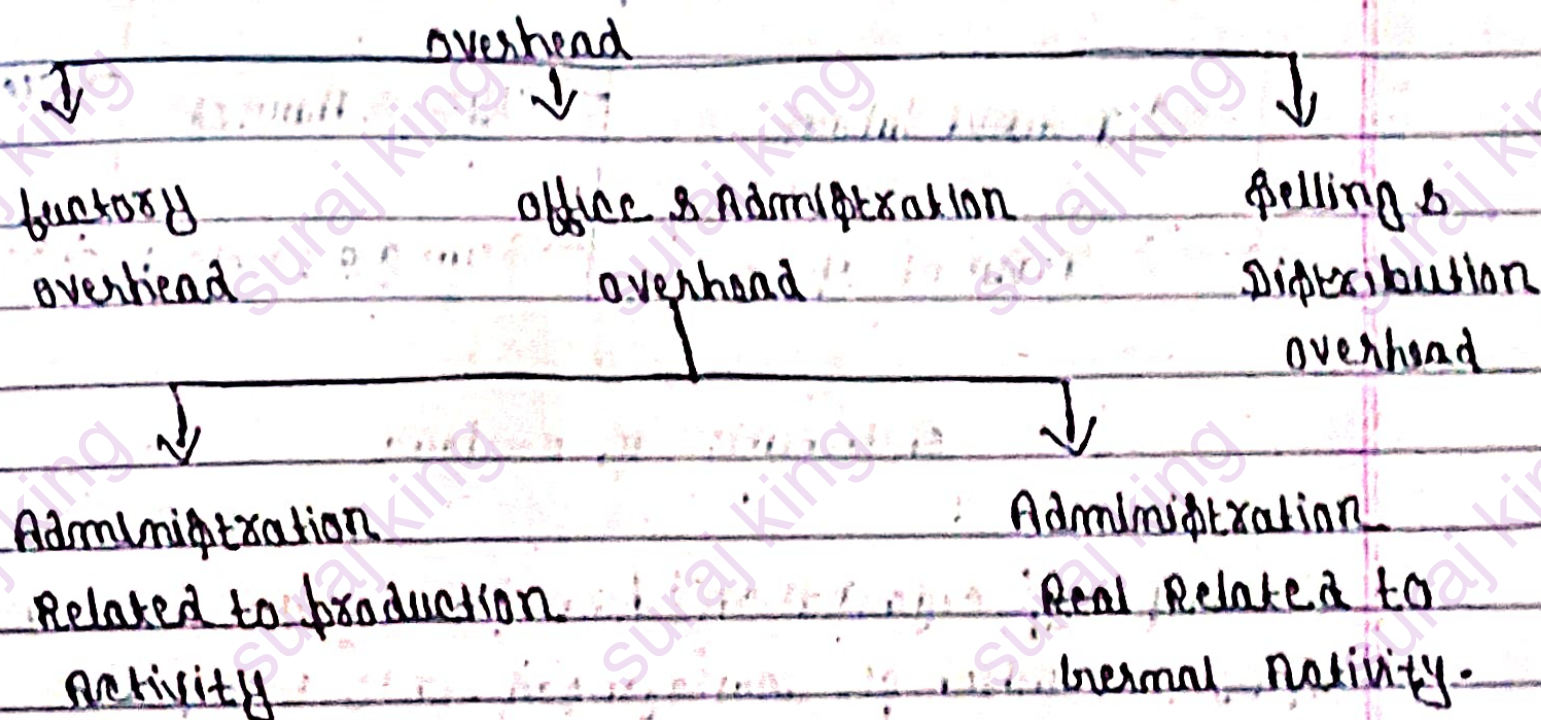


₹ 30 → 50 times

$$\frac{50}{30} = 0.6$$

20	15	10	5
12	9	6	3

4. Absorption of overhead means charging each unit of product with an equitable share of overhead expense. In simple words all indirect expense are charged with a suitable base given in question. When the overhead is allocated with suitable base are known as Absorption of overhead.



Classification of overhead

By element or
Nature

→ Indirect material

→ Indirect labour

→ Indirect expense

By function

→ factory O/H

→ office & admin O/H

→ selling & distrib O/H

By behaviour

→ Variable

→ Fixed

→ Semi-variable

Distribution of overhead

A company/ organisation/ firm/ entity etc. have different department which are categorised into two part

↓
Production
Department

↓
Services
Department

primary distribution of overhead

1. In order to distribute overhead in various department as overhead distribution sheet is prepared categorising the production dept & service dept.
2. In overhead distribution sheet separate column is prepared for each production dept. and each service dept.
3. After that overhead cost must be Apportioned / Absorbed in the department according to the suitable base.

overhead distribution sheet

Particular	Basis of Apportionment	Total cost	Production department			
			A	B	C	D
Overhead Name						

Job hum phali baar overhead ke bare khaashe ko production department and service department mai Allocation kar deta hai toh hum primary distribution of overhead karte hai.

Important point

- ① In overhead distribution sheet, direct material, direct labour are shown in service department only
- ② Direct material, direct labour & direct expense of production department are not shown in overhead distribution sheet because all these 3 cost are the part of prime cost

$$\text{Direct material} + \text{Direct Labour} + \text{Direct Exp} = \text{prime cost}$$

overhead		Base
1	Building owned / owned	
2	Depreciation Buildi	floor
3	Repair & maintenance	area
4	Municipal tax	Value
5	Rented	
(a)	Building Rent	
(b)	Repair & Maint	
6	Machinery	
(a)	Dep on machine	
(b)	Repair & Maint	Value
(c)	Insurance	

Basis of Apportionment		Rented	
overhead	Basis of Apportionment	(a) Rent	value of machine
1 Building owned / owner	3	(b) Repair	
Depreciation Buldi	4	Intercept lighting: 1st = no of light point	no 2nd = Area occubi.
2 Repair & maintenance	5	Supervision: no of work	
3 municipal tax	Value of department.	Indirect → Direct	Material → material
4 Rented	6	Indirect → Direct	wages/labour wages
(a) Building Rent		Employee cost	
(b) Repairs Maint		to →	
5 Machinery		P.F	Direct
(a) Dep on machine	Value of machine	F.S.T	wages
(b) Repair & Maint			
(c) Insurance			
	8	Summary → Direct	Expenses wages
	9	Canteen → no of workers	
	10	Store	→ Direct Requ
		overhead /	i & Mon.
		Material	surplus of
		Handling	material
			→ value of material

		machine K/W	20 (a) Compensation to worker	
11	Power →	House power of	(b) Hour Holiday pay	Direct wages
12	Internal overhead →	labour/machine Hour/direct wages	(c) cost of P-F	
13	Telephone →	No of extensions	deb & E-S-T	
14	Fire Insurance →	No of stocks	(d) Perquisite	
15	Work manager salary →	No of employees		
			20 (a) Power/Steam Consumption	Capital
			(b) Internal Transport	Technical
16	Cost of idle time →	Direct wages or No. of employees	(c) Management Salary	Ext. amb
17 (a)	Perquisite	No of worker		
(b)	Labour welfare exp.			
(c)	Time keeping			
(d)	Personal office			
(e)	Supervision			
18 (a)	C.O.E	Direct wages		
(b)	Holiday pay			
(c)	Part to P-F			
	E-S-T			
(d)	per perquisite			
19	Insurance of stock →	Capital stock		

1. A factory has 3 production department (P_1, P_2, P_3) and 2 service departments (S_1 & S_2). The following overheads & other information are extracted from the books for the month of January 2016

Expense	Amount
Rent	6,000
Repair	3,600
Depreciation	2,700
Lighting	600
Supervision	9,000
Fire Insurance for stock	3,000
E.S.T	900
Power	5,400

Solution (primary distribution of overhead)

Particulars	Basis of Apportionment	Total Cost	Production Dep			Service Dep	
			P_1	P_2	P_3	S_1	S_2
Rent	Area Sq ft	6,000	2000	1500	1350	750	400
Repair	40+20+27+15+8 value of plant	3600	1,440	1,080	960	120	-
Depreciation	Value of Plant	2700	1,080	810	720	90	-
Lighting	Area Sq ft	600	200	150	135	75	40
Supervision	No. of worker	9000	2700	2400	1800	1200	900
Fire Insurance	Stock Value	3000	1500	900	600	-	-
E.S.T. Controll-	wages	900	225	270	180	135	90
Power	HP of Plant	5400	2160	1440	1800	540	180
Distribution of overhead.		11,350	8505	6825	2490	1640	1610
						6825	2000

Secondary distribution of overhead

Secondary distribution of overhead means Re-distribution of service department O/H/Cash/Selling price to the production department in the ratio of service rendered by the service department to the production department.