

Ch-2 Material cost

- A) Direct material
- B) Raw material

* concepts :- valuation of material

I) Purchase cost

ii) Trade discount

iii) Quantity discount

iv) Cash discount

} Reduced if not already reduced from purchase cost
 ignore / No treatment

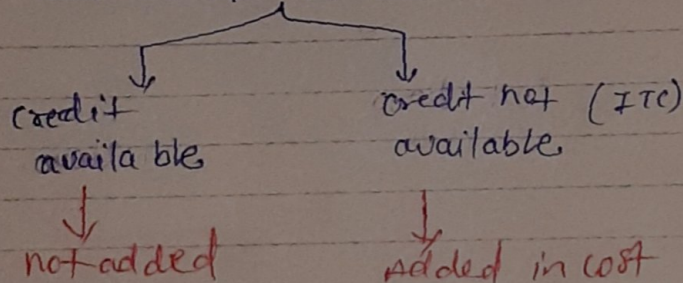
v) Grant / subsidy / incentive — Reduced

vi) Road tax / toll tax — Add (if paid by buyer)

vii) Custom duty — Added (if paid by buyer)

viii) Insurance — Added (if paid by buyer)

ix) SGST / CGST / IGST — (on value) → ₹ 1000 (but charges ₹ 1100)



commission / brokerage /

x) Freight inward — Added (if paid by buyer)

xi) Demurrage :- charges levied by transporter for delay
 ↓
 not added

xii) Detention charges :- not added

xiii) Any other fines / penalty :- not added

↓ they are debited to costing P&L A/c

xiv) cost of container :-

(xiv) lost of container

returnable

non returnable

Full Amt
£ 1000
cost = £ 0

Partial
Amt
£ 600
cost = £ 4000

(xv) shortage

normal loss

handling cost — (on invoice only)

gst — on value

freight freight — on quantity

Important point

Return of container is different from

repetition of container

Material

Taxes

Insurance

freight x

freight x

when paying
multiplying
when receiving

* Concept 2 :- Stock level + ROQ (EOQ)

a) Re-order level :-
level @ which order
for material is
placed

|| maximum
consumption
* maximum Re-order
Period

(ii) min stock or + (Avg
safety stock (avg consumption
* Avg. Re-order
Period)

Note :-

- (i) here we assume stock out risk to be "zero"
- (ii) **ROL** is the level @ which order for material
is placed
- (iii) **ROP** :- it is the time taken to deliver
goods by supplier

* Concept 3 :- Economic order quantity (EOQ)

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

at $EOQ \rightarrow OC = CC$

$$\frac{AO}{EOQ} \times OC_{\text{per order}} = \frac{EOQ \times CC \cdot pu \cdot p_1}{2}$$

$$EOQ \times EOQ = \frac{2 \times AO \times OC}{CC \cdot pu \cdot p_1}$$

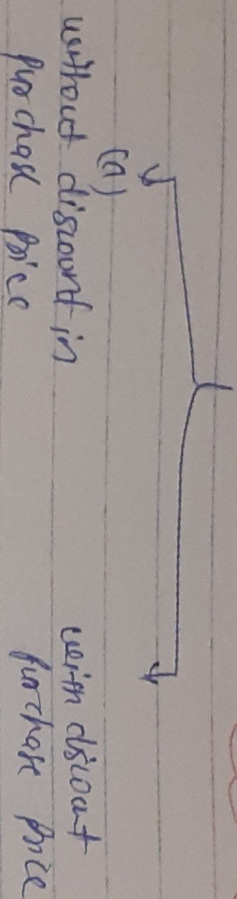
$$EOQ^2 = \frac{2 \times AO \times OC}{C}$$

Taking square root on both side
 $EOQ = \sqrt{\frac{2AO}{C}}$

$$\text{No. of orders} = \frac{AD}{\text{EOQ}}$$

$$\text{Associated cost} = OC + CC$$

* Concept 4 = £00 US non-£00 Decision making



a) without discount
given

$$AD =$$

$$OC =$$

$$CC =$$

$$\text{computation of } EOQ = \sqrt{\frac{2AD}{OC}} = \text{units}$$

£00 (non-£00) = given,

Statement of cost comparison b/w £00 & non-£00	
Particular	£00
1) AD	2 unit
	2 units

(ii) purchase price
(iii) purchase cost - (Since no disc. is offered purchased cost is irrelevant for decision making)

(iv) OE
calculator Given

(v) No. of order (2/iv)

(vi) OE = $2 \times OC$ per order

(vii) Avg. inv = (iv/2)

(viii) C.C. p.u.p.a. % of price

(ix) CC = (vii $\times$ viii)

(x) Total cost

(xi) (x) + (viii) $\times$ % of price

b) with discount

Given:-

AD ,

OC

$$CC = \frac{1}{2} \times \text{non-discounted price}$$

↳ As no discount is given when order is placed at EOQ.

$$i) \text{ } EOQ = \sqrt{\frac{2AO}{C}} \quad \text{units}$$

ii) Statement of cost comparison b/w EOQ and non-EOQ

Particular	EOQ	non-EOQ
a) AD		
b) Purchase price	10% discount	with discount
c) Purchase cost (a x b)		

	calculate	given
d) OA		
e) no. of orders (a/d)		
f) OC = (e x OC per order)		
g) Avg. Inventory = (d/2)		
h) CC p.u.p.a. (1/2 x b)	1/2 x non discounted price	1/2 x discounted price

- i) $CC = (g \times h)$
- j) Total cost
(c + f + i)

Point:-

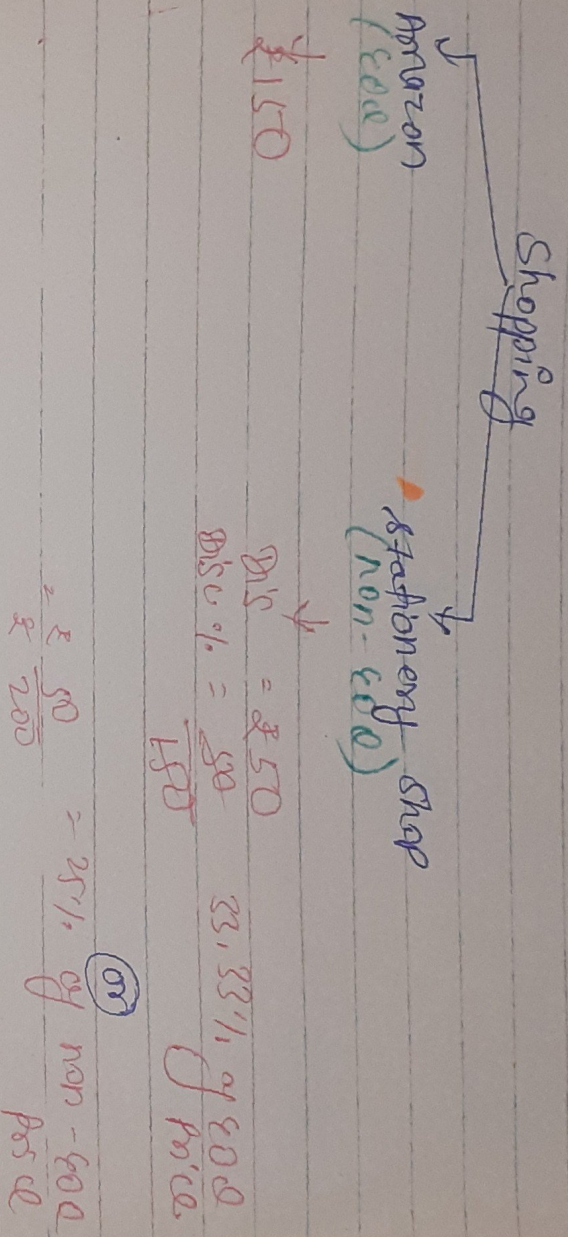
i) Since price varies due to discount policy, C.C.P.U.P.A will be different.

ii) Sometimes, question may state that C.C.P.U.P.A **does not** vary according to discount policy.

that time c.p.v.p.a. will be calculated using non-discount price,

* Discount at EoD.

Example.



* Concept: 5 Stock levels

(i) minimum stock level :- $ROL - (Avg. consumption \times Avg. re-order period)$

(ii) maximum stock level :- $ROL + EoD - (minimum consumption \times minimum re-order period)$

Note: formula includes EoD, and not EoD

(i) when question does not provide, EoD then $EoD = ROQ$.

(ii) when question provides ROQ & EoD both are will use ROQ to complete max stock level

(iii) Average stock level = $\frac{\text{min stock} + \text{max stock}}{2}$

(ii) $\frac{\text{or}}{\text{min stock level} + \frac{1}{2} \text{ROD}}$

(iv) Danger level :- Normal consumption $\times$ lead time for emergency purchases

* concept 6:- input-output ratio

Product function $\rightarrow$ $QO = 8 (OI)$
 $\downarrow$ quantity of output
 $\downarrow$ quantity of input
 Dependent $\downarrow$ Independent

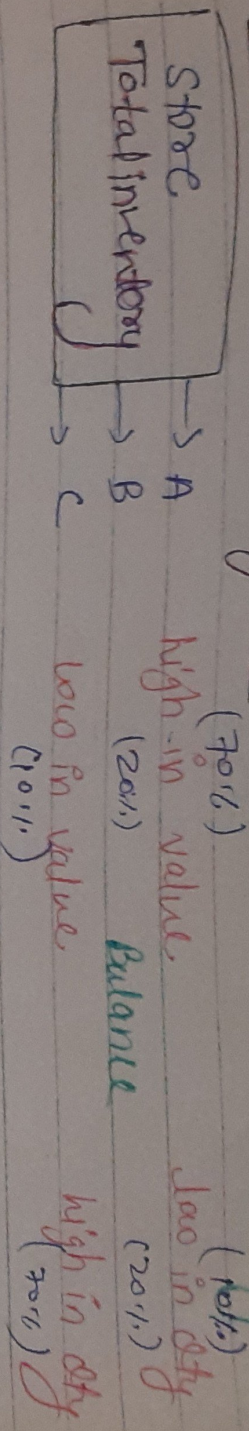
Formula :- $\frac{\text{input}}{\text{output}}$

Interpretation :-

(a) when output: output ratio is given as 2:3 it means for every 3 unit of output we need 2 unit of input

(b) when input: output is given as 110:1, it means that for every 100 units of output we need 110 units of input

* concept 71 — ABC Analysis ; selective / discriminating control



* concept 81 — FSN analysis (Fast, slow, non-moving)

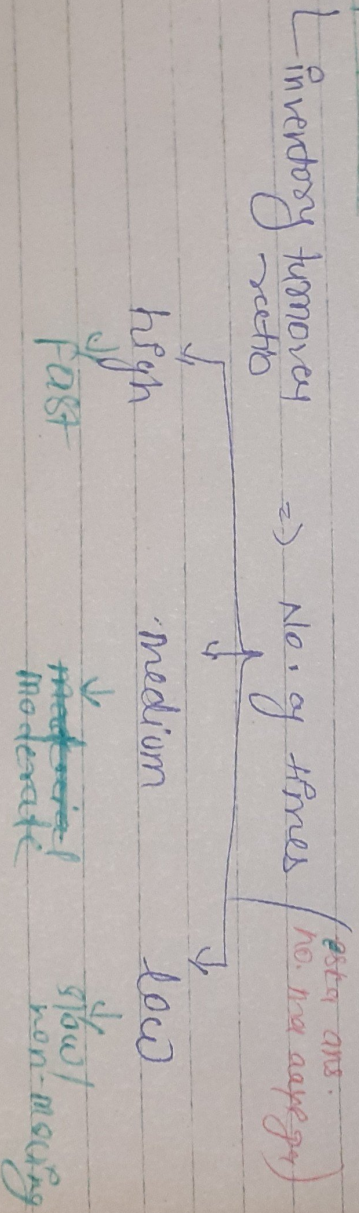
Inventory Turnover Ratio = $\frac{\text{consumption (i)}}{\text{stock (ii)}}$

(i) cost of material consumed = $\frac{\text{opening (+) purchase}}{\text{closing (-)}}$

$\frac{\text{cost of material consumed}}{\text{opening + closing stock}}$

(ii) cost of Avg. Stock = $\frac{\text{opening + closing stock}}{2}$

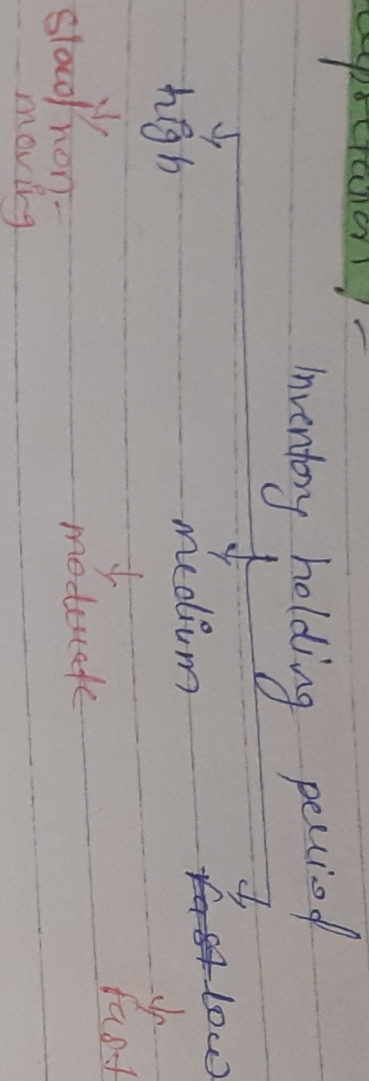
* Interpretation



Inventory holding period = $\frac{\text{No. of days / weeks / months}}{\text{Inventory turnover ratio}}$

eg:- no. of days = 365
Inventory to ratio = 10
y $\frac{365}{10}$ days
Inventory is held

Interpretation :-



Concept 3 :- Stores ledger

- └ FIFO (first in first out)
- └ LIFO (last in first out)
- └ Simple Avg. method
- └ Weightage method