MAY 2018

CA Purushottam Aggarwal

CA Final - SCM & PE (Costing) - New Syllabus

One Day Revision Notes

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One Day Revision Notes - Learning Curve (LC)

Concept No. 1:- Basis of LC

1. "Practice makes a man perfect" :- When You keep on doing a work again and again then time to be consumed in doing that work keeps on decreasing.
2. LC says same thing "Labour hour per unit reduces as production in units increases".
3. Above rule shall apply only same work is repeated continuously.
4. LC Rule is applicable to labour hours, labour cost and cost which are dependent on labour hours (Variable Overheads).
5. LC Rule does not apply to material cost and Fixed Cost.

Concept No. 2:- Why LC Used?

1. LC rule helps in calculating labour hours to be consumed thereby labour cost to be incurred and finally helping in calculating minimum price (Total Cost to be incurred) to be quoted.
2. Total cost for an order means sum of material cost, labour cost and overhead cost.

Concept No. 3:- What is LC Rule ?

1. When total production becomes twice of previous production level then average time to be consumed per unit under next production

 

level shall be 90% of average time consumed per unit under previous production level.

2. *70% or 80% can also be used in place of 90%. This % will always be given in question.*
3. *LC Rule shall always provide average time to be consumed per unit on each production level. This average time per unit shall be multiplied by production units of respective production level to calculate total time to be consumed.*
4. *Incremental time is difference between total time under current production level and total time under previous production level.*
5. *We can calculate average time to be consumed per unit with help of LC rule **provided** current production level is just double of previous production level.*

Concept No.4:- What is Statement of LC?

1. *St. of LC shall be prepared in each question.*
2. *Format of St. of LC is as under*

Statement of Learning Curve

Cumulative Production Units (CU)	*Average time per unit (AT)*	*Total Time (TT)*	*Incremental Time (IT)*
0	*0*	*0*	*0*
1	*100*	*100*	*100*
2	*90*	*180*	*80*

4	81	324	144
8	72.90	583.20	259.20

Assume 90% Learning Curve

Concept No. 5:- Will LC rule change in case of lot wise production?

1. *Production happens in 2 ways i.e. first unit-wise & second lot-wise*
2. *Lot means multiple units are produced simultaneously.*
3. *There is no change in LC rule whether it is unit-wise or lot-wise.*

Statement of Learning Curve *(Lot – Wise)*

Cumulative Lots (CL)	*Average time per unit (AT)*	*Total Time (TT)*	*Incremental Time (IT)*
0	0	0	0
1 Lot (10 units)	100	100	100
2 Lot (20 units)	90	180	80
4 Lot (40 units)	81	324	144
8 Lot (80 units)	72.90	583.20	259.20

Assume 90% Learning Curve and 10 units are produced in 1 Lot.

Concept No. 6:- Will LC rule change in case of absorption costing to be used?

1. *In costing, decision making is done either with marginal costing or absorption costing.*

2. *Marginal costing is applied while calculating minimum price for an offer. Minimum price hereby means only relevant cost (ignoring unavoidable fixed cost)*
3. *Absorption costing is applied while calculating total cost per unit for a product of regular production. Total cost hereby means all variable cost and all fixed cost (whether avoidable or unavoidable).*
4. *There is No change in LC Rule whichever costing technique is applied.*

Concept No. 7:- Will LC Rule be applied to calculate average time per unit when current production is not double o previous production

1. *No, LC Rule cannot be applied.*
2. *In such case, following equation shall be used to calculate average time per unit*

$$Y = ax^b$$

Where Y = average time per unit / Lot (corresponding to X)

a = Total Time taken for first unit / Lot

x = Cumulative production units/lots for which average time to be calculated

b = LC Index

3.LC Index for 90% shall be $\frac{\text{LOG } 0.9}{\text{LOG } 2}$ *i.e. - 0.1521*

4. *LC Index for 80% shall be* $\frac{\text{LOG } 0.8}{\text{LOG } 2}$ *i.e. – 0.3219*

5.LC Index for 70% shall be $\frac{\text{LOG } 0.7}{\text{LOG } 2}$ *i.e.*

6. *This LC index are normally given in question.*

7. *We will learn this formula (Nose shape --- Naakkaaakar)*

Concept No. 8:- How to calculate LOG value?

1. *Kuch to LOG Kahenge, LOGO kakaam he kehna, Chodobekarki baton me, kahi beet najayeraina (Song)*
2. *LOG a^b = b LOGa (Naak par makkhi he ---- Uttha ke patak)*
3. *LOG ab = LOG a + LOG b (**MUA** fir aa gaya – multiply then Add)*
4. *LOG a/b = LOG a – LOG b (**DIM**py I love you – Divide then Minus) i.e. (Divide and Rule)*

Concept No. 9:- Value of LOG? *(Boy friendbannekidasta)*

1. ***Calculate value Log 12345.6789***

Step No. 1*:- BinduKepehlekeboy friendgino- First calculate no. of digits before decimal (Bindukepehlekitneboy friendgino) i.e. 5*

Step No. 2*:- Ek Boyfriend kokamkarokyuki tum uska bf banna he:-Less 1 (L for less & L for LOG) i.e. 5 -1 = 4*

Step No. 3*Crime Master Go-Go(Mere naam he crime master go-go, aayahu, kuch to lekarjaunga):- Now see value of LOG (12 ka 3) i.e. 0899 then see (12 ka 4) i.e. 14. Now add them i.e. 0913*

Step No. 4 *Abbinduko step 2 aur step 3 ke beech me rakhdo i.e.4.0913*

LadkaChaa Gayaaur result aagaya (Jhakaas):- Value of LOG 12345.5678 = 4.0913

2. ***Calculate value of LOG 10 10 means 10.00***
   - *First calculate no. of digits before decimal (Bindukepehlekitneboy friend he - GIN) i.e. 2*
   - *Less 1 (L for less & L for LOG) i.e. 2 -1 = 1*
   - *Now see value of LOG (10 ka 0) i.e. 0 then see (10 ka 0) i.e. 0. Now add them i.e. 0(Mere naam he crime master go-go, aayahu, kuch to lekarjaunga)*
   - *Value of LOG 10 = 1.00*

3. ***Calculate value of LOG 2 2 means 2.00***
   - *First calculate no. of digits before decimal (Bindukepehlekitneboy friend he - GIN) i.e. 1*
   - *Less 1 (L for less & L for LOG) i.e. 1 -1 = 0*
   - *Now see value of LOG (2 ka 0) (we will see 20 ka 0 since 2 is not there) i.e. 3010 then see (20 ka 0) i.e. 0. Now add them i.e. 0 (Mere naam he crime master go-go, aayahu, kuch to lekarjaunga)*
   - *Value of LOG 2 = 0.3010*

4. ***Calculate value of LOG 7 7 means 7.00***
   - *First calculate no. of digits before decimal (Bindukepehlekitneboy friend he - GIN) i.e. 0*
   - *Less 1 (L for less & L for LOG) i.e. 1 -1 = 0*

 

- *Now see value of LOG (7 ka 0) (we will see 70 ka 0 since 7 is not there) i.e. 8451 then see (70 ka 0) i.e. 0. Now add them i.e. 0 (Mere naam he crime master go-go, aayahu, kuch to lekarjaunga)*
- *Value of LOG 7 = 0.8451*

5. ***Calculate value of LOG 88 means 8.00***
   - *First calculate no. of digits before decimal (Bindukepehlekitneboy friend he - GIN) i.e. 0*
   - *Less 1 (L for less & L for LOG) i.e. 1 -1 = 0*
   - *Now see value of LOG (8 ka 0) (we will see 80 ka 0 since 8 is not there) i.e. 9031 then see (80 ka 0) i.e. 0. Now add them i.e. 0 (Mere naam he crime master go-go, aayahu, kuch to lekarjaunga)*
   - *Value of LOG 8 = 0.9031*

6. ***Calculate value of LOG 9 9 means 9.00***
   - *First calculate no. of digits before decimal (Bindukepehlekitneboy friend he - GIN) i.e. 0*
   - *Less 1 (L for less & L for LOG) i.e. 1 -1 = 0*
   - *Now see value of LOG (9 ka 0) (we will see 90 ka 0 since 9 is not there) i.e. 9542 then see (90 ka 0) i.e. 0. Now add them i.e. 0 (Mere naam he crime master go-go, aayahu, kuch to lekarjaunga)*
   - *Value of LOG 9 = 0.9542*

<u>Concept No. 10:- Value of Learning index at 70%, 80% and 90%?</u>

- *LC index at 70% means* $\frac{\text{LOG } 0.7}{\text{LOG } 2}$ *i.e.* $\frac{LOG\ 7/10}{LOG\ 2} = \frac{LOG\ 7 - LOG\ 10}{LOG\ 2} = \frac{.8451-1}{.3010} = -0.5146$

- *LC index at 80% means* $\frac{\text{LOG } 0.8}{\text{LOG } 2}$ *i.e.* $\frac{LOG\ 8/10}{LOG\ 2} = \frac{LOG\ 8 - LOG\ 10}{LOG\ 2} = \frac{.9031-1}{.3010} = -0.3219$

 

 

- *LC index at 90% means* $\frac{\text{LOG } 0.9}{\text{LOG } 2}$ *i.e.* $\frac{LOG\ 9/10}{LOG\ 2} = \frac{LOG\ 9 - LOG\ 10}{LOG\ 2} = \frac{.9542-1}{.3010} = -\ 0.1521$

- *Normally value of LC index shall be given in question.*

Concept No. 11:- How to calculate value of Antilog? *(ShaadiKarvayenge)*

Antilog 1.92742

Step No. 1*:- BinduKepehlekeboy friendgino- Bindukepehleka number as it is lelo i.e. 1*

Step No. 2*:- Ab usme 1 jod do kyukitumharishaadi ho rahi he:-Add 1 (A for Add & A for ANTILOG) i.e. 1+1 = 2*

Step No. 3*Crime Master Go-Go:- Now see value of ANTILOG (.92 ka 7) i.e. 8453 then see (.92 ka 4) i.e. 8. Now add them i.e. 8461 (Mere naam he crime master go-go, aayahu, kuch to lekarjaunga)*

Step No. 4 *Shaadi ho gayi ab full stop lagado 2 (Value under step 2) kebaad*

Step No. 4 *LadkaChaa Gaya aur result aa gaya (Jhakaas):- Value of ANTILOG 1.92742 = 84.61*

Concept No. 12:- Special points of LC

- *LC Rule shall not be applied when work is already done by experienced workers. LC Rule shall apply when work is done by new workers.*

 

- *LC Rule shall not apply on new machines purchased if features of this machines are same as in old machine. But if new machine has new features then LC Rule shall apply.*

 

One Day Revision Notes - TRANSFER PRICING

Concept No. 1:- What is transfer price?

- If a company has many departments. Each department produces and sells its own product in market and earn profit. In case any internal department use a component as raw material in manufacturing its product and this component is produced and sold by any of other departments. Then there is a option to purchase that component from outside market or from other internal department.
- In case component is purchased internally then price paid by one department to other department is known as transfer price.

Concept No. 2:- Features of transfer price?

- Transfer price is not sale price.
- In internal transfer, location of goods and services change within company i.e. it does not reach to customer.
- Transfer price is revenue for supply department and cost for receiving department.
- Actual profit does not arise in case of internal transfer until goods using that component is ultimately sold to customer.

Concept No. 3:- Will profit of company increase if transfer price is increased and vice-versa

 

- *No, profit of company shall not increase.*

Example 1:- *A company has 2 departments i.e. department A & B. Department A produces component C at cost of Rs. 10,000 and sell it to department B at transfer price of Rs. 12,000. Department B use that component and make final product "D" by incurring additional cost of Rs. 8000 and sell it to ultimate customer at Rs. 25,000. Calculate Profit of each department and company?*

Solution:- *Statement of Profit*

Particulars	*Department A*	*Department B*	*Company*
Sale /Transfer Price	*12,000*	*25,000*	*25000*
Less:- Own Cost	*10,000*	*8,000*	*10,000 (Dept. A) 8,000 (Dept. B)*
Less:- Transfer Cost	--	*12,000*	
Profit	***2,000***	***5,000***	***7,000***

Suppose in above example if transfer price is increased from Rs. 12,000 to 15,000. Will company profit change?

Solution:- *Statement of Profit*

Particulars	*Department A*	*Department B*	*Company*
Sale /Transfer Price	*15,000*	*25,000*	*25000*
Less:- Own Cost	*10,000*	*8,000*	*10,000 (Dept. A) 8,000 (Dept. B)*
Less:- Transfer	--	*15,000*	

Cost			
Profit	***5,000***	***2,000***	***7,000***

Conclusion:- Profit of company does not change due to change in transfer price but profit of individual department changes.

Concept No. 4:- How to decide transfer price

- *Transfer price must be mutually agreed by supply and receiving department.*
- *But conflicts arise since manager of supply department would love higher transfer price to increase profit of his department thereby claiming salary increment or promotion from top management.*
- *Manager of receiving department would love lowest transfer price to decrease its total cost of production thereby increasing profit of its department and claiming salary increment or promotion from top management.*
- *To resolve conflict, Top management sometimes decides transfer price on its own or sometimes consult management accountant to decide transfer price.*

Concept No. 5:- Transfer price – Fixed by management itself *(Mgt ek grandfather jaisa hota he uski baat koi ma aka lal taal nahi sakta) – Abhi hum jinda he uday*

Case 1:- when market price of component is constant:- Transfer price is fixed on the basis of market price.

Case 2:- When market price of component keeps on changing:- Transfer price is fixed as

- *Total cost plus fixed % on cost (Called markup) OR*

 

- *Total cost plus fixed % on capital employed (Called return on capital employed)*

Total cost = All variable cost + All avoidable fixed cost + All unavoidable fixed cost

Capital employed = Fixed assets + working capital

Concept No. 6:- Transfer price – Fixed by management accountant *(kabhi kabhi bacche grandfather ki baat nahi mante tab tisra insaan beech me aata he jisse log shenshah kehte he – Amitabh dialogue)*

- *To resolve conflict, Management accountant sometimes give a price range of transfer price to choose from or sometimes fixes exact transfer price.*
- *Lower price is called minimum transfer price which is equal to relevant cost.*
- *Higher price is called maximum transfer price which is normally equal to market price of component.*
- *Statement showing relevant cost*

Particulars	***Amount***
Cost to be incurred due to transfer	*XXX*
+ Benefit / Contribution to be lost due to transfer	*XXX*
-Benefit to be achieved due to transfer	*XXX*
Minimum Transfer Price	***XXX***

Sunk cost is ignored while calculating relevant cost.

 

- *Management accountant fix transfer price beneficial to company (not consider benefit of individual department).*

Concept No. 7:- Steps followed by management accountant in deciding transfer price

Step 1:- Makes st. of comparative cost (Comparison of relevant cost of manufacturing (making) component or purchase cost of component).

Step 2:- Decide as to mfd internally or buy from outside market by choosing lower of both cost.

Step 3:- Fix transfer price in such a way that decision taken under step 2 remains valid.

***Example 1**:- A company has 2 departments i.e. department A & B. Department A produces component C at cost of Rs. 1000 per unit and sell it in market at a price of Rs. 1200 per unit. Department B use that component and make final product "D" by incurring additional cost of Rs. 800 per unit and sell it to ultimate customer at Rs. 2500 per unit. Department A has capacity to produce 6000 units but produce upto outside market demand of 2000 units. Department B needs 4000 units of component to make its own product. Kindly suggest*

- *Whether it is beneficial for company to purchase that component internally or continue buying from market?*
- *Fix transfer price*

***Solution**:- Statement of comparative cost (Make or Buy)*

Make		*Buy*	
Cost to be incurred	*1000*	*Purchase Cost*	*1200*

+ Benefit to be lost	NIL		
-Benefit to be achieved	NIL		
Relevant Cost	**1000**	**Purchase Cost**	**1200**

Decision:- It is beneficial for company to use component internally. (Better to make)

Now management accountant would fix such transfer price which will motivate department B to purchase internally for overall benefit of company.

Hence transfer price may range from Rs. 1000 to Rs. 1200 (Relevant cost to market purchase cost).

***Example 2**:- A company has 2 departments i.e. department A & B. Department A produces component C at cost of Rs. 1000 per unit and sell it in market at a price of Rs. 1200 per unit. Department B use that component and make final product "D" by incurring additional cost of Rs. 800 per unit and sell it to ultimate customer at Rs. 2500 per unit. Department A has capacity to produce 6000 units but produce upto outside market demand of 2000 units. Department B needs 4000 units of component to make its own product. Department A lease out spare capacity for Rs. 12,00,000. Kindly suggest*

- *Whether it is beneficial for company to purchase that component internally or continue buying from market?*
- *Fix transfer price*

***Solution**:- Statement of comparative cost (Make or Buy)*

Make	**Buy**
Cost to be incurred 1000 + Benefit to be lost (12,00,000 / 4000 units)300	Purchase Cost 1200

-Benefit to be achieved	NIL	
Relevant Cost	**1300**	**Purchase Cost** **1200**

Decision:- It is beneficial for company to purchase component from market (Better to buy)

Now management accountant would fix such transfer price which will motivate department B to purchase from outside market overall benefit of company.

Hence minimum transfer price shall be set as Rs. 1300 p.u.

Methods of Transfer Pricing

Point	Category 1	Category 2	Category 3
Description	**Cost Based Transfer Pricing,** using Cost or any variant of cost, with or without markup, e.g.	**Market Price based** Transfer Pricing	**Bargained or Negotiated** Transfer Pricing.
	(a) Variable Manufacturing Cost, (b) Full Manufacturing Cost, (c) Total Cost (Actual), (d) Standard Cost.	(a) Market Price of Intermediate Product (as quoted by Outside Supplier) (b) Market Price of substitute, if any.	Combination of Category 1 & Category 2 Methods of Pricing.
Merits	(a) Simple to understand (b) Easy to operate	(a) Maximum Prices (b) Demand & Supply (c) Opportunity Cost	(a) Proper Decisions (b) Autonomy &

	(c) Guarantees cost recovery	Recovery (d) Objective	Motivation Value (c) Optimality
Demerits	(a) Not suitable for Performance Evaluation (b) Ignores Opportunity Costs (c) Does not reward cost efficiency.	(a) Availability of Market Prices (b) Impact of S & D Costs (c) Unjust Enrichment	(a) Sub-Optimal (b) Conflicts (c) No scope for Performance Evaluation (d) Time and Cost

Criteria for Setting Transfer Prices

Criteria	***Cost Based***	***Market Price Based***	***Negotiated***
1. Achieves Goal Congruence	Often, but not always.	Yes, if markets are competitive.	Yes.
2. Motivates Management Effort	Yes, if based on budgeted costs. There is less incentive to control costs, if transfers are based on actual costs.	Yes.	Yes.
3. Useful for evaluating Sub-Unit performance	Difficult, unless Transfer Price exceeds full costs.	Yes, if markets are competitive.	Yes, but Transfer Prices are affected by bargaining strengths.
4. Preserves	No, since it is rule-	Yes, if markets	Yes, because it is based

Sub-Unit Autonomy	based.	are competitive.	on negotiations between sub-units.
5. Other factors	Useful for determining full cost of products and services.	No market may exist or markets may be imperfect or in distress.	Bargaining and negotiations take time, and may need to be reviewed repeatedly as conditions change.

Negotiated / Bargained Transfer Pricing

Minimum Transfer Price *(from Transferring Division's viewpoint)*	***Maximum Transfer Price*** *(from Recipient Division's viewpoint)*
Minimum TP = ***Relevant Cost,*** computed as under -	Maximum TP = ***Least of the following*** items -
(a) Variable Costs upto the point of internal transfer. (b) Fixed Costs, if specific to such transfer. (c) Opportunity Costs, i.e. Contribution foregone by the Transferring Division on its External Sales. ***Note:*** · Selling and Distribution Costs, not incurred for Internal Transfers are ***not*** included. · Opportunity Costs arises only if - (i) Transferring Division produces and ***sells*** marketable products, and	(a) ***Market Price,*** since this represents the Fair Value in exchange, based on market forces. (b) ***Effective Purchase Cost,*** i.e. Market Price + Buying Costs, since the Recipient Division would have to incur «this cost if the products are procured externally. (c) ***Recipient's Ability to Pay,*** e.g. if Recipient Division sells the Final Product at Rs. 100 after incurring incremental costs of Rs. 15 in its own division, it will be prepared to pay a maximum of Rs. 85 for the

(ii) Transferring Division operates **at full capacity.**	Intermediate Product. **Note:** If the Intermediate Product as such is not available for purchase in the market, the price of its substitute may be considered, in determining the above items.

Negotiation: Transfer Price may be determined by negotiations between Divisional Managers, subject to the range of minimum to maximum prices. Any price within the range (i.e. Minimum to Maximum) will be acceptable to both Managers.

Other Points

Concept	Points to Remember
Resolving TP Conflicts	1. **Dual Rate System:** Under this system - (a) Revenue for Transferring Dept = Full Cost + Mark up (b) Cost for Recipient Dept = Relevant Costs (Variable Cost + Opportunity Cost) (c) Company Profits = Total of Divisional Profits **Less** Interdivisional mark-up 2. **Two Part Transfer Pricing:** Here, Transfer Price = Marginal Costs + Lumpsum Fixed Fees.
Other Concepts	1. **PAT Maximisation by MNC:** (a) Income Tax Rates, (b) Import Duty, (c) Inflation, (d) Income Repatriation, (e) Penetrating a new market. 2. **Tfr Pricing - Merits:** (a) Goal Congruence, (b) Resource

	Allocation, (c) Wholistic Decisions, (d) Performance Evaluation, (e) Balance between Autonomy & Company's Goals, (f) Employee Compensation, (g) Taxation and Profit Remittance. 3. ***Tfr Pricing - Merits:*** (a) Identity, (b) Short Term Focus, (c) Reduction in Profits, (d) Disharmony, (e) Duplication, (f) Loss of Control, (g) Transfer Pricing Problems, (h) Ineffective Control.

One Day Revision Notes - Standard Costing & Variance Analysis

8 BOX APPROACH

Computation of Material Variances

SP x SQAO	SP x RSQ	SP x AQ	AP x AQ
M1	M2	M3	M4

Cost = M1 – M4
Usage = M1 – M3
Price = M3 – M4
Yield = M1 – M2
Mix = M2 – M3

Computation of Labour Variances (Without Idle Time)

SR X SHAO	SR X RSH	SR X AHP	AR X AHP
L1	L2	L3	L4

Cost = L1 – L4
Efficiency = L1 – L3
Rate = L3 – L4
Yield = L1 – L2
Mix = L2 – L3

Computation of Labour Variances (With Idle Time)

Computation of Variable Overheads

SR X SHAO	SR X RSH	SR X AHW	SR X AHP	AR X AHP
L1	L2	L3	L4	L5

Cost = L1 - L5

Efficiency = L1 - L3

Idle Time = L3 - L4 (Always Adverse)

Rate = L4 - L5

Yield = L1 - L2

Mix = L2 - L3

Output absorbed Var. OH	Input absorbed Var. OH	Actual Var. OH
V1	V2	V3

Cost = VO 1 - VO 3

Efficiency = VO 1 - VO 2

Expense = VO 2 - VO 3

Computation of Fixed Overhead Variances (Without Calender Variance)

Output absorbed Fixed OH	Input absorbed Fixed OH	Budgeted Fixed OH	Actual Fixed OH
F1	F2	F3	F4

Cost = FO 1 - FO 4

Volume = FO 1 - FO 3

Exp. =FO 3 - FO 4

Efficiency = FO 1 - FO 2

Computation of Fixed Overhead Variances (With Calender Variance)

Output absorbed Fixed OH	Input absorbed Fixed OH	Possible Fixed OH	Budgeted Fixed OH	Actual Fixed OH
F1	F2	F3	F4	F5

Cost = FO 1 - FO 5

Volume = FO 1 - FO 4

Exp. = FO 4 - FO 5

Efficiency =FO 1 - FO 2

Capacity = FO 2 - FO 3

Capacity =FO 2 – FO 3

Calender =FO 3 – FO 4

Computation of Sales Variances

Budgeted Selling Price P.U. x Budgeted Qty	*Budgeted Selling Price P.U. x Revised Std. Qty*	*Budgeted Selling Price P.U. x Actual Qty*	*Actual Selling Price P.U. x Actual Qty*
S1	*S2*	*S3*	*S4*

Value = S4 – S1

Price = S4 – S3

Volume =S3 – S1

Mix = S3 – S2

Quantity = S2 – S1

Computation of Profit Variances

Budgeted Profit Price P.U. x Budgeted Qty	*Budgeted Profit Price P.U. x Revised Std. Qty*	*Budgeted Profit Price P.U. x Actual Qty*	*Actual Profit Price P.U. x Actual Qty*
P1	*P2*	*P3*	*P4*

Value = P4 – P1

Price = P4 – P3

Volume =P3 – P1

Mix =P3 – P2

Quantity = P2 – P1

Some Additional Points

1. *DMV = std. cost per unit of output x (Actual output – expected output in actual input)*

$$= \frac{\sum M1}{\text{Actual output}} \times \left(\text{Actual output} - \frac{\text{Actual input}}{\text{budgeted input for 1 unit of output}}\right)$$

2. $$\text{Budgeted Output in budgeted input} = \frac{\text{total budgeted input}}{\text{budgeted input for 1 unit of ouput}}$$

3. $$\text{Budgeted output in actual input} = \frac{\text{total actual input}}{\text{budgeted input for 1 unit of output}}$$

4. *Budgeted input for actual output = Actual output x budgeted input for 1 unit of output*

5. *Material Price Variance at time of purchase = SP x AQP –AP x AQP*

6. *SQAO = Actual output x budgeted input for 1 unit of output = Actual output x* $\frac{\text{Total Budgeted Material Kg}}{\text{Total budgeted Output}}$

7. *SHAO = Actual output x budgeted input for 1 unit of output = Actual output x* $\frac{\text{Total Budgeted labour hours}}{\text{Total budgeted output}}$

8. *Output absorbed Overhead*

    a. *Formula 1:- = Actual O/P x Budgeted OH per unit*

    b. *Formula 2:- = Std Hrs for actual O/P x budgeted OH per Hr*

9. *Input absorbed Overhead*

    a. *Formula 1:- = Actual Hrs. x Budgeted OH per Hr*

    b. *Formula 2:- = Expected O/P in Actual Hrs x Budgeted OH p. unit*

10. *Possible OH*

    a. *Formula 1:- = Possible Output x Budgeted OH p.u*

    b. *Formula 2:- = Possible Hrs. x Budgeted OH per Hr*

11. *Budgeted OH*

    a. *Formula 1:- = Budgeted O/P x Budgeted OH p.u.*

    b. *Formula 2:- = Budgeted Hrs. x Budgeted OH per Hr*

 

12. Actual OH

    a. Formula 1:- = Actual O/P x Actual OH p.u.

    b. Formula 2:- = Actual Hrs. x Actual OH per unit

13. Production Volume Variance = (Actual capacity – budgeted capacity) x Budgeted FOH per unit

14. OH exp. Variance =

    Budgeted FOH x budgeted production capacity + budgeted VOH x actual production capacity – Actual OH

Concepts	Points to Remember			
Classification of Variances	Based on	Classification		
	1. Type of Cost	(a) Material, (b) Labour, & (c) Overheads.		
	2. Causal Factor	Variances of - (a) Efficiency, (b) Price, (c) Volume.		
	3. Impact on Profit	(a) Favourable, & (b) Adverse.		
Groups of Variances	Elements of Cost	Variance of Efficiency	Variance of Price	Variance of Volume
	Materials	Usage, Mixture, Yield	Price	Revision
	Labour	Efficiency, Idle Time	Rate of Pay	
	VOH	Efficiency	Expenditure	Revision
	FOH	Efficiency	Expenditure	Capacity, Calendar
	Sales	Quantity, Mixture	Price	

 

Material Variance - Reasons	*1. **Controllable** - Failure to purchase anticipated quantities, Not availing cash discount, Failure to buy standard quality of materials, Deficiencies in price negotiation, Inefficient Purchase Planning and consequent emergency purchase at higher costs.* *2. **Non controllable** - Change in prices of basic materials, changes in related charges, Failure to buy standard quality of materials.*	
Material Usage Variance - Reasons	*1. Use of sub-standard/ defective materials.* *2. Carelessness in use of material.* *3. Products failing to pass inspection & further material required for rectification.*	*4. Pilferage* *5. Wastage.* *6. Difference in material quality* *7. Use of non-standard mix.*
Labour Rate Variance - Reasons	*1. Increase in Wage Rate due to inflation, cost of living index, etc.* *2. Higher wage awards not anticipated at the time of setting standards.* *3. Special increments/ allowances given to workers.* *4. Use of wrong type of labour.* *5. Using a composition different from that of standard.* *6. Excessive overtime & consequent premium payment.*	
Labour Eff. Variance - Reasons	*1. Changes in quality stds or material specifications.* *2. Use of sub-standard employees.* *3. Poor working conditions.*	*4. Inefficient organisation.* *5. Defective machinery or equipment.* *6. Incompetent Supervision*

VOH Variances - Reasons	*1. Over/Under spending.* *2. Faulty planning & selection of wrong base for estimation of absorption rates.* *3. Differences in rate of cost.* *4. Differences in processing time.*		
FOH Variances - Reasons	*1. Over or under **spending** - **Expenditure Variance.*** *2. Difference in output due to **time factor** - **Capacity Variance.*** *3. Difference in output due to **quantity factor** - **Efficiency Variance.*** *4. Difference in output due to **days factor** - **Calendar Variance.***		
Sales Variances – Reasons	*1. Changes in unit selling prices - **Price** Variance,* *2. Changes in physical volume of each product sold - **Quantity** Variance, and* *3. Changes in proportion of volume - **Mix** Variance.*		
Planning and Operational Variances	***Meaning***	***Planning Variance***	***Operational Variance***
	Comparison Item	*Comparison between Original Standard and Revised Standard.*	*Comparison between Revised Standard and Actual Results.*
	Control by Operational Management	*These are **Non-Controllable** by Operational Management, since they arise due to factors beyond the control of Management / Department.*	*These are **Controllable** by Operational Management, since they arise due to efficiency or inefficiency of the Cost Centre / Department.*

A/cing types	1. Partial Plan, 2. Single Plan & 3. Dual Plan		
Differences between Partial & Single Plan	**Particulars**	**Partial Plan**	**Single Plan**
	1. Computed at	End of the period.	At the point of transaction.
	2. Nature of Control	Helps only post-control.	Current control is facilitated.
	3. MPV computed for	Actual Quantity Consumed.	Actual Quantity Purchased.
	4. RM Valuation	Valued at Actual Cost.	Valued at Standard Cost.
	5. Variances adjusted	in WIP Control Account.	in respective Cost Accounts.
	6. Nature of analysis	Suitable if simple analysis of variance is sufficient.	Preferred if frequent detailed analysis of variance is desired.
	7. Documentation	Detailed documentation not necessary.	Requires more planning & effective documentation at each stage.
Disposition of Adverse Cost Variances	A. Write-off all variances to Costing P&L A/c at the end of every period - Assuming all variances are abnormal.	Costing P&L A/c Dr. To Variance A/cs (individually)	
	B. Assuming all variances are normal, Distribute all variances proportionately to - (1) Units Sold,	Cost of Sales A/c Dr. (for units sold) Finished Goods Control Dr. (for Closing FG)	

	(2) Closing Stock of FG, & (3) Closing Stock of WIP.	WIP Control A/c Dr. (for Closing WIP) To Variance Accounts (individually)
	C. Write off Quantity Variances (MUV, LEV etc.) to Costing P&L A/c & apportion Price Variances (MPV, LRV etc.) over Cost of Sales, WIP and FG Stocks.	Costing P& L A/c Dr.(For Quantity Var.) Cost of Sales A/c Dr. Finished Goods Ctrl A/c Dr. WIP Control A/c Dr. To Variance Accounts(individually)
Disposition of Favourable Cost Variances	A. Write-off all Variances to Costing P&L A/c at period end- assuming abnormal.	Variance A/cs (individually) Dr. To Costing P&L A/c
	B. Carry forward to next accounting period	No Journal Entry is required.
	C. Reversal of Cost Absorption Entries - Assuming all Variances are normal, and excess cost absorbed to be reversed to reflect correct cost, profits & stock values.	Variance Accounts (individually) Dr. To Cost of Sales A/c (for units sold) To Fin.Goods Ctrl A/c (for Closing FG) To WIP Control A/c (for Closing WIP)
Behavioural Concepts of Std Costing	1. Static Behaviour in Managers and Employees. 2. Undue Importance to Material Price, Labour Rate, Efficiency and Capacity Usage. 3. Emphasis on Standard Cost than Allowable Cost.	

	4. *Unsuitable for Pricing Decisions.*

 

One Day Revision Notes - Linear Programming

Concept	Points to Remember			
Meaning & conditions	Mathematical Model dealing with the use or allocation of certain scarce resources (i.e. Key Factor) in the best possible manner in order to maximize profit or minimize cost. **Conditions:** 1. Objective Function (Z) should be defined by use of a **linear function** involving the decision variables. 2. Decision Variables must be **non-negative.** 3. Constraints denoted by **inequations.**			
Application Areas	1. Industrial Applications 2. Product Distribution 3. Marketing Applications	4. Financial Applications 5. Administrative Applications 6. Agriculture Applications.	7. Operational Scheduling Applications	
Disadvantages	1. Existence of non-linear equations 2. Interaction between variables	3. Fractional Values 4. Knowledge of co-efficients of the equations		
Methods	1. Graphical, 2. Trial & Error Method/Algebraic Approach & 3. Simplex Method			
Slack, Surplus	Particulars	Slack	Surplus	Artificial

 

and Artificial Variables	1. Meaning	Idle or Unused Resources.	Excess Amount of resources utilized.	No physical or economic meaning. It is fictitious.
	2. When Used	'≤' inequality	'≥' inequality	'≥' and '=' constraints
	3. Co-efficient in the constraint	+ 1	-1	+ 1
	4. Co-efficient in the Obj. Function Z	0	0	+M for Minimization and -M for Maximization.
	5. Use as Initial Program Variable	Used as Starting Point (Initial Table).	Cannot be used since Unit Matrix condition is not satisfied.	Initially used but later eliminated.
	6. Presence in the Optimal Table	Helps to interpret Idle & Key Resources.	-	Indicates "No Feasible Solution."
Concept	***Points to Remember***			

Primal vs Dual	*For any LPP Model called the **Primal** Model, there exists a companion model called the **Dual Model.** The relationship between Primal and Dual LPP are -* *· The **Objective** of the Dual will be the **opposite** of the Primal.* *· **Constraints** in Dual LPP will be in tune with the Dual's Objective, e.g. Max Obj with '≤' constraints.* *· The **Dual of the Dual** problem is the Primal problem itself.* *· If Primal has "m" Variables and "n" Constraints, then Dual has "n" Variables and "m" Constraints.* *· Objective Functions of the Optimal Tables of Primal and Dual will have identical values. **[Note: NER** of Optimal Table of Primal LPP will be reflected in the **Quantity Column** of Optimal Table of Dual LPP, and vice-versa.]* *· If the Primal LPP has no optimal solution because of infeasibility, then the Dual LPP will also have no optimal solution because of unboundedness, and vice-versa.* *· Feasible Solutions to the Primal and Dual Problem are both optimal, if the complementary slackness conditions hold, i.e. -* *· (Value of a Primal Variable) × (Value of the corresponding Dual Surplus Variable) = 0, or* *· (Value of a Primal Slack Variable) × (Value of the corresponding Dual Variable) = 0* ***Note:** When this relationship does not exist, then either primal or dual solution or both are non-optimal.*

Steps in Simplex Method

***Step 1: Objective:** Determine the Objective Function (denoted by Z). [either Maximisation or Minimisation]*

 

Step 2: Constraints: *List the Constraints applicable for the objective. For Maximisation Objective, atleast one Constraint should bear < sign. For Minimisation Objective, atleast one Constraint should bear > sign.*

Step 3: Conversion of Inequalities into Equalities: *Convert Inequalities into Equalities as below:*

Nature of Inequality	***Introduce***	***Co-efficient of such Variable in the Objective Function***
≤	*A* ***Slack*** *Variable*	*Zero for all Slack Variables*
≥	*A* ***Surplus*** *Variable and* ***Artificial*** *Variable*	*Zero for all Surplus Variables +M, for all Artificial Variables in case of Minimisation Objective - M, for all Artificial Variables in case of Maximisation Objective*

Step 4: Revised Objective: *Re-draft the Objective Function by including the variables in this order - (a) Regular Variables as given in the objective, (b) Slack Variables with Zero Co-efficient, (c) Surplus Variables with Zero Co-efficient, and (d) Artificial Variables with + M Co-efficient (depending upon the Objective)* ***[Note: M = Infinity Cost.]***

Step 5: Initial Simplex Table: *The format of the Simplex Table is as under -*

Fixed	*Program*	*Profit/ Cost*	*Quantity*	*Variables Columns*	*Replacement Ratio*

 

Ratio				A	B	S_1	S_2	(RR)
	Row 1							
	Row 2, etc.							
			Z (= Objective Value)					
			C (= Computed Value)					
			NER (Net Evaluation Row) = Z - C					

*[**Note:** The terms Z and C used in this Book are based on the above meanings. Sometimes, these may also be used as C = Contribution, i.e. from Objective Function, and Z = Computed Value, i.e. Profit X Co-Efficient. So, NER = (C - Z).]*

*(a) Select Slack Variables as **Initial Program** for Maximisation Objective. In case of Minimisation Objective, Slack and Artificial Variables constitute the Initial Program, forming a Unit Matrix of Co-efficients.*

(b) Fill up Profit/ Cost of the Program Variables as per Objective Function.

(c) Fill up Quantity = RHS of Constraints.

(d) Fill up Co-efficients of various variables as per the Constraints, in the respective columns.

(e) Fill up Z Row (i.e. Objective Value) against each Variable, as per Objective Function.

(f) Compute C = Profit × Co-efficient of each Variable.

*(g) Compute Net Evaluation Row (NER) = Z - C. [Ensure that **Program Variables** have **Zero NER.**]*

*(h) Select **maximum positive** NER (Z - C) for Maximisation Objective and circle **Key Column.** Corresponding Variable is called as the Incoming Variable. In case of Minimisation Objective, select **worst negative** NER (Z - C).*

(i) Compute Replacement Ratio (RR) = $\frac{\text{Quantity}}{\text{Key Column Element}}$.

*j) Select **minimum non-negative** Replacement Ratio (RR) and **Circle Key Row.** In case RR = 0, it shall be selected as minimum non-negative. In case of tie in RR, arbitrary selection can be made.*

*(k) Identify **Pivot Element,** i.e. Junction of Key Row and Key Column.*

*(l) Compute **Fixed Ratio** (FR) for **Non-Key Rows** =* $\frac{\text{Key Column Element}}{\text{Pivot Element}}$. *For Key Row, FR is Not Applicable.*

(m) Determine Replacement Decision: (a) Incoming Variable = Key Column, and (b) Outgoing Variable = Key Row.

Step 6: Second and Subsequent Table:

(a) Fill up Program Variables by Replacement Decision as per earlier Table.

(b) Fill up Profit / Cost of the program variables based on Objective Function.

*(c) Update **Key Row** by the Transformation Rule =* $\frac{\text{Previous Table Key Row Element}}{\text{Pivot Element}}$.

*(d) Update **Non-Key Rows** by the Transformation Rule = (Previous Table Corresponding Row Element) **Less** (Key Row Element × Fixed Ratio)*

(e) Fill up Z Row (i.e. Objective Value) against each Variable, as per Objective Function.

 

(f) Compute C = Profit × Co-efficient of each Variable.

*(g) Compute Net Evaluation Row (NER) = Z - C. [Ensure that **Program Variables** have **Zero NER.**]*

(h) Repeat the selection and rea-llocation procedure [Step (h) to (m) as given above] till all Z - C ≤ o for Maximization Objective, and all Z - C ≥ o for Minimisation Objective.

Note/ Check Points:

- *Program Elements always form a **Unit Matrix,** but need not be adjacent,*
- *In every Table for all Program Variables, NER = Z - C = "o" (Zero)*
- *Retain fractions in all computations.*

Procedure for Minimisation Objective:

(a) Introducing Surplus Variables, the constraint functions are to be re-written and converted into equalities.

(b) However, since Surplus Variables when introduced as Initial Program, violate the non-negativity assumption, Artificial Variables "M" of heavy cost (close to infinity) are introduced and the constraints and objective functions are re-written.

(c) Initial Program is commenced using Artificial Variables only (since it satisfies the unit matrix condition).

(d) An Artificial Variable once eliminated (i.e. selected as Key Row) will be removed, and will not re-enter the Simplex Table in the subsequent iterations.

 

(e) If Artificial Variable exists in the "Optimal Table", the solution is not optimal. There is no feasible solution in that case.

Special Cases and Treatment

Situation	*Treatment*
Degeneracy	· *It occurs if there is a tie in the* ***minimum non-negative Replacement Ratio.*** · *In case of Degeneracy, the Outgoing Variable (Key Row) should be selected on an arbitrary basis.* · *The Variable not selected as Outgoing, will bear "0"(Zero) in the Quantity Column in the next Table.* ***(Note:*** *This zero need not continue till the Optimal Table)*
Equality Constraints	· *The given Equality Constraint is split into* ***two*** *inequalities in opposite directions, '≤' and '≥' signs.* · *The regular procedure like introduction of Slack, Surplus and Artificial Variables will be adopted thereafter.* ***[Note:*** *Alternatively, an Artificial Variable can be introduced in an equality constraint.]*
Multiple Optimal Solutions	· *For any Optimal Solution, NER = Z - C = 0 for all Program Variables (i.e. Basic Variables).* · ***LPP*** *has alternative solution(s) if in the Optimal Table, a* ***Non-Program Variable*** *has NER = 0.* · *The Alternative Solution(s) can be obtained by identifying such Non-Program Variable (bearing NER = 0) as the Incoming Variable.(i.e. Key Column)*
No Feasible solution	· *Artificial Variable, once eliminated, should not re-enter subsequent iterations (tables).* · *If Artificial Variable exists in the "Optimal Table", the solution*

	is not optimal. There is ***no feasible solution*** *in that case.*
Unbounded Solution	· *Outgoing Variable is selected on the basis of minimum non-negative Replacement Ratio.* · *If* ***all*** *Replacement Ratios are* ***negative,*** *the Outgoing Variable cannot be identified.* · *The* ***LPP*** *is said to have* ***unbounded solution*** *in such cases, when all* ***RR*** *are negative.*

Interpretation of existence of Slack Variables in the Optimal Table of a maximization LPP

Nature of Slack	***Nature of NER***	***Nature of Resource***	***Interpretation / Remarks***
Non-Program Variable	*NER < 0 (i.e. negative)*	*Key Resource*	*This means that for every reduction in the RHS of that Constraint, the Profit will be reduced by the NER. Thus, the value of NER represents the* ***Contribution Loss per unit*** *of RHS of that Constraint / Key Resource.* ***[Note:*** *This Contribution Loss is also called* ***Shadow Price*** *(or) Marginal Value of that Resource.]*
Program Variable	*NER = 0*	*Idle Resource*	*This means that the Resource has no Contribution Loss, and is hence not fully utilized. The extent of Slackness / Idleness / Unused Resources is equal to the "Quantity Column" of the concerned Program Slack Variable.*

Interpretation of Peculiarities in the Graph (Note: *Number of Variables = 2 only)*

1. Degeneracy	*The feasible region may be defined by a* ***single point*** *which*

	satisfies all conditions.
2. No Feasible Solution	*There is **no feasible region** which satisfies all the constraints given in the LPP.*
3. Unbounded Solution	*The Feasible Region is **not finite.** The upper bound (in case of Maximisation LPP) or the lower bound (in case of Minimisation LPP) is not identifiable.*
4. Multiple Optimal Solution(s)	*The Iso-Profit (or Iso-Cost) Line has the same Slope as that of a Constraint, i.e. the Objective Function and any one of the Constraints have the same Slope. **[Note: Slope** = Ratio of Coefficient of the Variables.]*

 

One Day Revision Notes - Target Costing & Cost Reduction Concepts

Concept	Points to Remember	
Steps in Target Costing	1. Identify **market requirements** and product qualities / attributes. 2. Set **Target Selling Price** = customers' willingness to pay. 3. Set **Target Production and Sales Volumes.** 4. Establish **Target Profit Margin** for each product. 5. Set **Target Cost** (or Allowable Cost) per unit, for each product. Target Cost = Target Selling Price **Less** Target Profit Margin. 6. Determine **Current Cost** of producing the new product. 7. Set **Cost Reduction Target** in order to reduce Current Cost to Target Cost. 8. Analyse Cost Reduction Target into various components and identify cost reduction opportunities using VE & VA (for Direct Costs), and ABC (for Indirect Costs). 9. Achieve Cost Reduction & Target Profit by **Effective Implementation** of cost reduction strategies and decisions. 10. Focus on further possibilities of cost reduction and quality, i.e. **Continuous Improvement.**	
Steps in implementing Target Costing	1. Customer - Product Design Specification 2. Market - Target Selling Price and Production Volume	4. Setting Target Costs 5. Computing Current Costs 6. Setting Cost Reduction Targets

 

	3. Profitability - Target Profit Margin	7. Identifying Cost Reduction Opportunities
Target Costing in Service Sector	1. In Service Sector, the Target Costing Team can observe and analyse the actual provision of services to customers, and provide suggestions for cost reduction, by re-configuring / streamlining the activities performed by employees in the course of rendering the service. 2. Target Costing at the "Production" phase in Service Sector, will - (a) lead to cost & wastage reduction, (b) improve productivity of employees, and (c) enhance the quality of services provided to customers.	
Cost Reduction	1. ***Meaning:*** Cost Reduction is defined as achievement of ***real and permanent reduction,*** in the ***unit cost*** of goods manufactured or services rendered, without impairing their ***suitability*** for the use intended or diminution in the quality of the product. 2. ***Focus:*** Reduction in expenditure and Increased Productivity. 3. ***Advantages:*** (a) ***Individual Firm*** - Improvement in profits and enhancement in value of shares, (b) ***Society*** - Availability of goods and services of proper quality at reasonable prices, and (c) ***Country as a whole*** - Reduction in cost, Increase of Market Share in Exports and increased Forex Savings, and Increase in Government's Tax Revenue.	
Value Engineering (VE) and Value	1. ***Value Engineering:*** It is the application of Value Analysis to new products. Hence, it is more associated with Target Costing as it seeks cost avoidance or cost reduction, before production. It is more associated with ***New Products.***	

Analysis (VA)	*2. **Value Analysis:** It is a planned, scientific approach to Cost Reduction, which reviews the material composition of a product and its production design, so that modifications and improvements can be made which do **not** reduce the value/functionality/quality of the product to the Customer/ User. Generally, it is associated with **Existing Products.***
Role of VA/VE	*1. investigates into the economic attributes of value.* *2. reduces cost through change in Product Design, Material Specifications, Sources of Supply, etc. „* *3. emphasizes on finding new ways of getting equal or better performance from a product at a lesser cost without affecting its quality, function, utility and reliability.* *4. systematically examines each product or component thereof, to ascertain its utility in the product, its cost, Cost Benefit Ratio and better substitute, etc. The best product is one that will perform satisfactorily at the lowest cost.*

One Day Revision Notes - Life Cycle Costing

Particulars	Introduction	Growth	Maturity/Stabilization	Decline
Phase	I	II	III	IV
Sales Volumes	Low.	Rise at increasing rates.	Rise at decreasing rates.	Constant & then start decreasing.
Prices of products	High levels.	Retention of high level prices	Prices fall closer to Cost.	Gap between Price & Cost is reduced.
Sales Values	Low, due to low sales quantities.	Rise in Sales Values at increasing rates.	Rise in Sales Values at decreasing rates.	Sales Value starts decreasing.
% of SOH to Sales	Highest	Total Exp.remain same, while ratio of S&D OH to Sales is reduced.	Ratio reaches a normal % of sales, which becomes industry standard.	Reduced sales promotional efforts.
Nature of Customers	Innovators, Acceptors of new changes	Early Adopters	Middle Majority	Resistors of Change, Prefer Old

				Styles.
Competition	Negligible & insignificant.	Entry of large no. of competitors.	Fierce Competition.	Starts disappearing.
Profits	Nil.	Increase at rapid pace.	Normal rate of profits.	Declining profits.
Major Cost Items	R&D, Design, Promotional Costs, Capacity Costs	Manufacturing Costs, Distribution Costs, Product Support Costs	Manufacturing Costs, Distribution Costs, Product Support Costs	Plants re-used / sold / scrapped / related costs
Pricing Strategies	Penetration Pricing, or Skimming Pricing.	· Cost plus Pricing, · Value based Pricing, · Demand-Elasticity based pricing	· Pricing to match or beat competitors · Reduced prices to attract price-sensitive customers	Price Cutting to sell-off existing stocks.
Product Strategies	Basic Product only - No product refinements or add-ons.	Product Extensions and Add-ons, Service, Warranty features, etc.	· Brand Diversification, · More Models & Versions, · More Product Features.	Phasing out of weak products at lower prices.
Customer Strategies	· Acquisition of	· Customer Retention, · Repeat	Preserve Loyalty of existing customers, and encourage switch-	Preserve Loyalty of existing

	Customers, · Motivating Product Trials,	Purchases, · Building Brand Loyalty	over from Competitors.	customers for next product version.
Advertising Strategies	· Create Product Awareness & Visibility, · Inform Product Features, · Inform Dealers / Customers.	· Create interest in the product in the mass market, · Create Brand identity	Focus on Brand Differences, Superior Quality & Benefits, etc.	Maintain hard core loyalty of customers for next product version.
Distribution Strategies	· Selective Distribution to Focus Group Customers who are Early Adopters	· Expanding Supply Chain Relationships, · Make product more available & visible.	· Extensive Distribution, · Higher Incentives to Dealers, to handle competition.	Selective Distribution, Close down unprofitable distribution outlets / channels.
Promotion Strategies	· Heavy Sales Promotion · Free Trials to Customers	Leveraging the products' "perceived" differentiation advantages for	Incentives for - · Brand Switching, · Higher buying from loyal customers, etc.	Reduce all Promotional Expenses, and spend only for

	· Sale or Return Offer	securing market position		reducing inventory levels.

Concept	Points to Remember
PLC – Features	1. Finite lives, 2. Follow predictable courses, 3. Profit p.u varies for each product, 4. Different opportunities and threats, 5. Functional emphasis in each phase, 6. Extend life of the product.
PLC – Importance	1. Time based analysis, 2. Overall Cost Analysis, 3. Pre-production costs analysis, 4. Effective Pricing Decisions, 5. Better Decision Making, 6. Long Run Wholistic view, 7. Life Cycle Budgeting, 8. Review

One Day Revision Notes - CVP Analysis & Decision-Making

FORMULAE

PV Ratio	$\frac{\text{Total Contribution}}{\text{Total Sales Value}} \times 100 = \frac{\text{Contribution per unit}}{\text{Sales Price per unit}} \times 100 = \frac{\text{Change in Contribution}}{\text{Change in Sales}} \times 100$ $= \frac{\text{Change in Profit}}{\text{Change in Sales}} \times 100 = 100\%$ Less Variable Cost Ratio.	
	in Sales Value (Rs.)	in Quantity (units)
BEP	$\frac{\text{Fixed Costs}}{\text{PV Ratio}}$	$\frac{\text{Fixed Costs}}{\text{Contribution per Unit}}$
MGS	Total Sales Less BEP Sales = $\frac{\text{Profit}}{\text{PV Ratio}}$	Total Sales Qtty Less BEQ = $\frac{\text{Profit}}{\text{Contribution per Unit}}$
Indifference Point	$\frac{\text{Difference in Fixed Costs}}{\text{Difference in PV Ratio}}$ $= \frac{\text{Difference in Fixed Costs}}{\text{Difference in Variable Cost Ratio}}$	$\frac{\text{Difference in Fixed Costs}}{\text{Difference in Contribution per Unit}}$ $= \frac{\text{Difference in Fixed Costs}}{\text{Difference in Variable Cost per Unit}}$
Shut Down Point	$\frac{\text{Avoidable Fixed Costs}}{\text{PV Ratio}}$	$\frac{\text{Avoidable Fixed Costs}}{\text{Contribution per Unit}}$

Related Points:

Cash BEP	Cash BEP (Quantity) $= \frac{\text{Fixed Costs } (-) \text{ Depreciation and Amortisation}}{\text{Contribution per Unit}}$
BEP in ABC System	BEQ (under ABC) $= \frac{\text{Fixed Costs } (+) \text{ Set up Cost} \times \text{No.of Set ups } (+) \text{ Engg Cost} \times \text{No.of Engg Hours}}{\text{Sale Price } (-) \text{ Unit Varia ble Cost}}$
BEP in JIT System	BEQ (under JIT) $= \frac{\text{Fixed Costs (including Labour) } (+) \text{ Engg Cost} \times \text{No.of Engg Hours}}{\text{Sale Price } (-) \text{ Unit Varia ble Cost (excluding Labour)}}$

Concept	Points to Remember		
CVP Analysis	· Analysis of three variables, viz. Cost, Volume and Profit. · Aims at measuring variations of Profits and Costs with Volume, which is significant to business profit planning.		
Variable Cost & Fixed Cost	Particulars	Variable Cost	Fixed Cost
	Meaning	Cost which changes or **varies proportionately** based on output / volume / quantity.	Costs which are assumed to **remain constant,** for a given period of time, irrespective of level of output during that period.
	Items	Direct Materials + Direct Labour + Direct Expenses+Variable POH+Variable SOH.	Fixed Cost = Fixed Production OH + Administrative OH + Fixed S&D OH.
	Examples	Raw Materials, Labour, etc.	Rent, Salary, Insurance, etc.
	Cost per unit	Variable Cost per unit is assumed to remain constant at all levels of output.	Fixed Cost per unit will vary inversely with changes in the level of output.
	Point of incurrence	Incurred only when production takes place. Hence, no production means no Variable Costs.	Incurred even at zero level of output. Hence, even at Nil Activity Level, Fixed Costs will be incurred.
	Cost Behaviour	Once incurred, Variable Costs will increase	Fixed Costs, once incurred, will be constant at all output levels.

		proportionately based on the level of output / quantity.	
	Nature	Variable Costs are considered as product-related costs.	Fixed Costs are treated as period-related costs.
	Inclusion in Inventory	Variable Costs are Product Costs, and hence included in inventory valuation.	Fixed Costs are not included in Inventory Valuation, and charged off to P&L A/c.
Concept	**Points to Remember**		
Methods of segregating Semi-Variable Costs	Expenses that exhibit characteristics of Fixed and Variable Costs, which can be segregated using - 1. Graphical Method (Scatter Graph) or Line of Best Fit Method, 2. Analytical Method or Best Judgement Method, 3. High and Low Points Method, 4. Comparison by Period or Level of Activity Method, and 5. Least Squares Method. **Need:** (a) Control over Expenses, (b) Budgeting & Estimates, and (c) Decision-Making		
MC Eqn	Sales less Variable Cost = Contribution = Fixed Cost + Profit		
Contribution	Sales - Variable Costs = Contribution. It is called so, since it initially contributes towards recovery of Fixed Costs and thereafter towards Profit of the business.		
Profit	Contribution - Fixed Cost = Profit. Hence, Surplus Contribution = Profit.		
Loss	Loss = Excess of Fixed Cost over Contribution. Hence, Loss =		

<table>
<tr><td></td><td colspan="2">Unrecovered Fixed Costs</td></tr>
<tr><td>PV Ratio</td><td colspan="2">1. Ratio of Contribution to Sales. 2. Basic Indicator of Profitability. 3. Higher PVR is better.</td></tr>
<tr><td>Break-Even Point</td><td colspan="2">1. Meaning: Level of Sales where Contribution is sufficient only to recover Fixed Costs. So, there is no profit or no loss. At BEP, Total Sales = Total Costs, Contribution = Fixed Costs, Profit / (Loss) = Zero.
2. Significance:</td></tr>
<tr><td></td><td>Level of Sales</td><td>Impact on Profits</td></tr>
<tr><td></td><td>Less than BEP</td><td>Firm incurs Losses. [Contribution < Fixed Cost]</td></tr>
<tr><td></td><td>Equal to BEP</td><td>No Profit & No Loss. [Contribution = Fixed Cost]</td></tr>
<tr><td></td><td>Greater than BEP</td><td>Firm earns Profits. [Contribution > Fixed Cost]</td></tr>
<tr><td>Assumptions of BE Analysis</td><td colspan="2">1. Costs classifiable into Fixed and Variable Costs only.
2. Factors remain unchanged - SP per unit, VC per unit, Total Fixed Costs, Productivity of factors of production, Inventory, Sales Mix (incase of multi-product Co.)
3. Revenue and Cost functions are linear over the range of activity under consideration.
4. All resources are abundantly available for consumption (i.e. There is no Key Factor).</td></tr>
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<table>
<tr>
<td>Impact of Non Linear Sales and Cost functions</td>
<td>
1. Optimum Output Level: In case of non-linear relationships, the Company should operate at the Optimum Output Level, i.e. the output where the profitability is maximum, which is -
(a) Gap / Distance between Total Sales and Total Cost is the greatest, i.e. Maximum Contribution and Maximum Profit,
(b) Total Contribution (and not Contribution p.u.) is the highest, and
(c) Incremental Contribution (or Additional Contribution) equals Zero.
2. BEP: BEP is identified as the point at which Total Revenue Curve cuts Total Cost Curve from below and not from above, (i.e. from "Loss" area to "Profit" area, and not otherwise).
In case of Step-Fixed Costs with multiple points of intersection between Total Sales and Total Cost Curves, every point at which Total Revenue Curve cuts the Total Cost Curve from below, will be a BEP. Hence, there may be multiple BEPs at different activity levels.
3. Effect on Profits:
<table>
<tr><th>Particulars</th><th>At Optimum Level</th><th>Beyond Optimum Level</th></tr>
<tr><td>(a) Gap between TR and TC Curves</td><td>Maximum</td><td>Narrows down / reduces.</td></tr>
<tr><td>(b) Total Contribution and Total Profit</td><td>Maximum.</td><td>Reduces.</td></tr>
<tr><td>(c) Incremental Contribution</td><td>Zero.</td><td>Negative.</td></tr>
</table>
</td>
</tr>
<tr>
<td>Margin of Safety</td>
<td>1. Meaning: Difference between Total Sales and the Sales at Break-Even Point.</td>
</tr>
</table>

<table>
<tr><td></td><td>2. Significance:
(a) Profit = Contribution earned out of MOS.
(b) Low MOS means Firm has large Fixed Costs and is more vulnerable to changes in Sales.
(c) High MOS means a slight fall in Sales may not affect the business very much.</td></tr>
<tr><td>Indifference Point</td><td>1. Meaning: Level of Sales at which Total Costs (and hence Total Profits) of two options are equal. Decision-maker is indifferent as to option chosen, since both options lead to same profit.
2. Significance:
<table>
<tr><td>Level of Sales</td><td>Profitable Option to be chosen</td></tr>
<tr><td>Below Indifference Point</td><td>Option with Lower Fixed Cost.</td></tr>
<tr><td>At Indifference Point</td><td>Both options are equally profitable.</td></tr>
<tr><td>Above Indifference Point</td><td>Option with Higher PVR (lower VC)</td></tr>
</table></td></tr>
<tr><td>Concept</td><td>Points to Remember</td></tr>
<tr><td>Shut Down Point</td><td>1. Meaning: Level of operations (Sales), below which it is not justifiable to pursue operations / production. Contribution is insufficient even to recover Avoidable Fixed Costs.
2. Significance:
<table>
<tr><td>Level of Sales</td><td>Decision</td><td>Reason</td></tr>
<tr><td>Below Shut down Point</td><td>Close Down Operations</td><td>Avoidable Fixed Costs are not fully recovered.</td></tr>
<tr><td>At Shut down Point</td><td>Continue Operations</td><td>Avoidable Fixed Costs are just recovered.</td></tr>
<tr><td>Above Shut down Point</td><td>Continue Operations</td><td>Avoidable Fixed Costs are fully recovered.</td></tr>
</table></td></tr>
<tr><td>Impact of</td><td>Situation</td><td>Decision</td></tr>
</table>

Non-Financial Factors	*If Relevant Benefits > Relevant Costs*	*Accept the Proposal, unless Non-Financial factors & Ethics require otherwise.*
	If Relevant Benefits = Relevant Costs	*Accept the Proposal, subject to Non-Financial factors & Ethics.*
	If Relevant Benefits < Relevant Costs	*Reject the Proposal, unless Non-Financial factors & Ethics require otherwise.*
Concept	***Points to Remember***	
Key Factor	*Key Factor / Budget Factor / Critical Factor represents a resource whose availability is less than its requirement. Denotes a Resource Constraint situation, e.g. RM or DLH or Plant capacity shortage.* ***Steps:*** *1. Identify the Key Factor.* *2. Compute Total Contribution or Contribution per unit of the product.* *3. Compute Contribution per unit of the Key Factor, i.e. Contribution per Direct Labour Hour, Contribution per kg of Raw Material, etc.* *4. Rank the products based on Contribution per unit of the Key Factor.* *5. Allocate the Key Resources based on Ranks given above, and other conditions.*	
Key Factor - Principles	*1. If Availability < Requirement, that Resource is called a Key Factor or Key Resource.* *2. If Availability > Requirement, that Resource is called as an Idle Resource.*	

	3. Key Resource and Idle Resource are mutually exclusive, i.e. they do not refer to the same resource. *4. Key Resource should not be kept idle, and an Idle Resource will always have spare capacity.* *5. Key Resource has Opportunity Costs, while Idle Resources have no Opportunity Costs.* *6. A Key Resource, if kept idle, will erode / reduce Contribution.* *7. For identifying Key Resource, Availability = Normal Resource Availability at Normal Costs. Any additional resource availability at higher cost (e.g. additional labour hours due to Overtime Work and Premium) will not be considered.* *8. For identifying Key Resource, Requirement is at 100% Capacity Levels, i.e. Maximum Output.* *9. In case of minimum production condition, minimum resource requirements should be allocated independent of the Key Factor Ranking priority. Additional Resource requirements only should be allocated based on Key Factor Ranking.* *10. In case of Multiple Products and Multiple Key Factors with difference in ranking priority, Linear Programming (LPP) Techniques may be applied for Resource Allocation decision.* *11. Application of Key Factor Principles is subject to - (a) feasibility, and (b) Company policy.*

Divestment Strategy	*1. **Meaning:** It is a strategy of selling-off or shedding business operations to divert the resources, so released, for other purposes. Selling-off a business segment of Product Division is one of the frequent forms of Divestment Strategy. It may also include selling-off or giving up the control over a Subsidiary whereby the wholly-owned Subsidiaries may be floated as independently quoted Companies.* *2. **Reasons:*** *(a) Opportunity to get more profitable product or segment but has **resource constraints.*** *(b) In case of purchase of **new business,** if some of the part of the acquired business is not upto the standard norms of profitability.* *(c) If any Business Segment / Product / Subsidiary **pulls down** the profit of the whole Firm.* *(d) If **managing the organisation** is very constrained, it is better to dispose off those divisions which involve large management skill, but less profitability.* *(e) If the Firm has **considerable losses,** selling-off or divestment policy is one suitable option to "**exit**" the current situation, and to go for **Turnaround Strategy.***
Concept	***Points to Remember***
Product Mix Decision	***Relevant Costs:** (a) Future Costs, and (b) Differential Costs,* *Other factors include -* *1. Available Production Capacity and Limiting Factors, if any.* *2. Contribution per unit of the Limiting Factor.* *3. Market Demand for the products.* *4. Opportunity Costs, if any.*

Product Distribution Decision	1. ***Objective:*** *Getting the right goods to the places at the right time for the optimal cost.* 2. ***Basic Output:*** *% of customers who should get their order in so many number of days.* 3. *Considered efficient if it maintains a particular level of service at minimum cost.* 4. ***Decision-making tools:*** *(a) Linear Programming (Transportation Model), (b) Inventory Models, and (c) Simulation Models.* 5. *Factors in* ***Channel of Distribution:*** *(a) Type of Product, (b) Type of Market, (c) Industry Practices, and (d) Effect on Profitability.*
Make or Buy Decisions - Factors	1. *Quality of goods supplied by Supplier.* 2. *Reasonable certainty of the Supplier meeting the delivery dates, i.e. Timeliness.* 3. *Availability of more than one Supplier to reduce the risk involved in buying.* 4. *Lead Time involved in receiving the materials versus time involved in own production.* 5. *Supplier Stability, i.e. whether the Supplier will support the Firm in the long-run also.* 6. *Availability of skilled labour, technical know-how & capability to make product / component.* 7. *Labour relations - adverse effect on labour relations if it is decided to buy instead of making.* 8. *Cost of labour redundancies, if any.* 9. *Cost of Special Machineries to be installed in making the component.*

	10. Possible use of released capacity and facility as a result of buying instead of making. 11. Possibility of expanding capacity or creating extra capacity (e.g. Overtime Work, II Shift) 12. Process of making - whether confidential or patented or a general process. 13. Technical obsolescence of the component - whether investment in machinery is risky or not. 14. Seasonal demand of Components, leading to costs of inventory holding. 15. Price Stability and possibility of escalations in the Price of Components purchased. 16. Possibility of adverse Foreign Exchange Rate Fluctuations in respect of Imported Components. 17. Availability of transport and other infrastructure for procuring the component from outside. 18. Behaviour of cost of make and cost of buy in the long run. **Note:** Of the above (1) to (5) are relating to Suppliers, (6) to (8) are relating to Labour, (9) to (13) are relating to Capacity & the balance are relating to Other Factors.	
Asset Replacement Decisions	**Cost Factors**	**Non Cost Factors**
	1. Operating Costs 2. profitability Return on Capital Employed and Interest on Capital 3. Opportunity Costs 4. Effect of disposal of the existing plant	1. Market standing of the product 2. Nature of the market 3. Constraints on the resources 4. Possibility of any bottleneck 5. Possibility of any substitute product

	5. Additional Capital Expenditure 6. Effect on tax liability	6. Likely effects of any change in Government policy
Sell or Further Process	1. Compute Additional Revenue = Sale Value after further Processing **Less** Sales Value at Split off. 2. Compute Additional Costs = Further Processing Costs + S & D OH if any. 3. Compute Additional Profit = Additional Revenue Less Additional Costs. 4. Decide: If Additional Profit ≥ 0, process further. If not, sell at split off point.	
Minimum Pricing or Special Order Decisions	1. **Concept:** In situations where price discrimination is permissible, lower prices can be charged for certain orders. Such lowest price is called Minimum Price. 2. **Computation:** Minimum Price = Relevant Cost = Incremental (both Fixed and Variable) Costs of Manufacturing and Distribution + Opportunity Cost, if applicable. 3. **Use:** Minimum Pricing Approach is useful in case of - (a) meeting intense competition, (b) need to use Surplus Production Capacity, (c) clearance of old inventories, (d) obtaining special orders, and/or (e) improving Market Share of the Product.	
Decision Making under Uncertainty	1. **Sensitivity Analysis:** (a) Sensitivity Analysis refers to analysis of the change in one factor on the other related factors. It focusses on how a result will be changed if the original estimates of the underlying assumptions change.	

Concept	*Points to Remember*
	(b) CVP-based Sensitivity analysis will help top Management to cope up with uncertainty and to get answers to questions like - What will be the Total Profit if the Sales Mix is changed to include more of Product L and less of Product M? or What will be the Profit if Fixed Costs increase by 30% and Variable Costs decline by 5%?, etc. *2. **Normal Distribution Theory:** The Probability of earning a particular amount of profit is computed using the Areas under Standard Normal Curve (Z Value) as under -* *· Compute* $Z = \frac{X-\mu}{\sigma}$ *where X = Required Profit,* μ *= Expected Profit,* σ *= Standard Deviation.* *· Determine Area under the Standard Normal Curve from Z Tables for the computed Z.* *· Ascertain probability of a particular amount of profit using values from Z Tables.*

One Day Revision Notes - Relevant Cost Analysis

Relevance of Material Cost

Materials

- **Already Available (See Note 1)**
  - **Regularly used** → **Current Replacement Cost** is relevant as Incremental Cost. (Note 2)
  - **Rarely used** → **Net Realisable Value** is relevant as Opportunity Cost. (Note 3)
- **To be purchased** → **Current Purchase Price,** being Out-of-Pocket Cost, is relevant. (Note 2)

Notes:

1. Materials already available includes - (a) Materials under Firm Purchase Orders, (b) Materials in Transit, where the risk / property in materials is already with the Buyer Company.

2. Generally, Current Replacement Cost = Current Purchase Price = Current Market Price of the Material.

3. If there are alternatives for disposal of rarely used material, e.g. substitution or re-use or scrap, the highest of Opportunity Costs shall be considered relevant.

4. If a regularly used material is restricted in supply, the Total Relevant Cost = Current Purchase Price **Plus** Indirect Opportunity Cost.

Relevance of Labour Cost

Labour

- ***Already Available***
  - ***General Rule,*** *i.e. Labour Cost in respect of future contracts*
  - ***Excessive Labour Force,*** *and -*
    - *Company has no retrenchment policy, or*
    - *Reduction in Idle Time Cost of Labour*
  - *Labour in short supply, i.e.* ***yielding Contribution*** *in a different department*
- *To be engaged / appointed specifically*

Labour Cost is Variable Cost and hence relevant.	*Labour Cost is Committed Cost, hence irrelevant.*	*Variable Cost + Opportunity Cost (Contribution foregone) is relevant.*	*Out of Pocket Costs, i.e. Wages of **new workers** is relevant.*

***Note:** If acceptance of special contract necessitates replacement / transfer of workers, i.e. existing jobs carried out with new workers, and existing workers are transferred to the special contract, the Wages of New Workers is relevant for the special contract.*

Relevance of Other Costs

Nature of Cost	***Relevant Cost***
Variable Overheads	· *Irrelevant if already incurred.* · *Relevant, only if such costs are to be incurred in future.*
Fixed Overheads	*Relevant, only under specific situations described in Question above.*
Depreciation	***Irrelevant,** as it is an apportionment of Historical Cost. However, fall in Asset Disposal Value due to delay in disposal, becomes relevant.*
Other Department Costs	· *Irrelevant if already incurred or apportioned.* · *Relevant if they are to be incurred specifically for any contract / work.*
Intra-Company Transfer Price Charges for services	*(Incremental Costs upto the point of transfer + Opportunity Costs) are relevant.*

Other Points

Concept	Points to Remember
Fixed Costs become relevant for decision making	1. Fixed Costs are **specifically incurred** for any contract, 2. Fixed Costs are **incremental** in nature, 3. Fixed portion of Semi-Variable Cost increases due to **change in level of activity** consequent to acceptance of a contract, 4. Fixed Costs are **avoidable** or **discretionary,** 5. Fixed Costs are such that one cost is incurred in lieu of another (the difference in costs will be relevant for decision-making.)
Opportunity Cost- Principles	1. Opportunity Cost is a Relevant Cost where **alternatives** are available. It involves **choice** and **decision-making** out of many alternatives. 2. Opportunity Cost is **generally** evaluated for **short-term** purposes. 3. Opportunity Cost is **not useful for accounting,** reporting and cost control. It does not find any place in formal accounts and is computed only for comparison purposes. 4. Opportunity Cost arises **only** in case of restriction of resources, i.e. **Key Factor situation.** If resources are abundantly available, they can be used for pursuing **all** available alternatives / courses of action. 5. When a number of alternatives are available, the highest of the Opportunity Costs will be considered relevant for decision-making.

Opportunity Gain	*Opportunity Gain = incidental, indirect benefit derived out of choosing a particular course of action, from among various options, and comprises - (a)* ***Savings in Costs,*** *or (b)* ***Additional Indirect benefits*** *derived by accepting / choosing a certain option.*

One Day Revision Notes - Pricing Strategies and Decisions

Concept	*Points to Remember*
Cost Plus Pricing	*1.* ***Meaning:*** *Selling Price= Estimated Cost plus a fixed Profit Margin.* *2.* ***Merits:*** *(a) Guaranteed Contribution, (b) Assured Profit, (c) Reduced risks & uncertainties, (d)Most suitable in long run, (e) Considers market factors, (f) Full Recovery of all costs, (g) Price Stability, (h) Simplicity.* *3.* ***Demerits:*** *(a) Ignores demand, (b) Ignores competition, (c) Arbitrary Cost allocation, (d)Ignores opportunity costs, (e) Price-Volume relationships.*

ROCE Pricing	*1.* ***ROCE Pricing*** *is used when each division is treated as an Investment Centre.* *2.* ***Determination:*** *The Firm should determine an* ***average mark-up on cost,*** *which is necessary to produce a desired rate of ROCE. The issues to be considered are -* *(a) Basis and Assumptions on which the Capital Employed is computed,* *(b) Components to be covered in the ROCE, and* *(c) Fairness of the ROCE.* *3.* ***Advantages:*** *Allowing each Firm (and hence the industry as a whole) to earn an adequate ROCE would - (a) attract additional capital, (b) increase the number of factories and production of the commodity, which would ultimately lead to competition and reduction in costs and prices.*	
Marginal Cost Pricing - Situations	*1. When goods are of perishable nature.* *2. When the Firm has already purchased huge quantities of Raw Materials, and the prices of these Materials is falling considerably in the market.* *3. To launch or introduce a new product in the market at competitive prices (using*	*4. To eliminate Competitors from the market.* *5. To obviate shut-down costs.* *6. To push up sales of another highly profitable product.* *7. To capture / retain future market.* *8. To capture / retain foreign market.* *9. To ensure sale of old and*

	Penetration Pricing Strategy).	defective stocks, seconds, etc.
Conversion Cost Method	Based on the assumption that Profit should be related to Value Added in the form of Conversion Costs since Materials Cost do not contribute to Profits. Price = Conversion Cost + Profit Margin on Conversion Cost + Materials Cost.	
Std. Cost Method	Selling Price = Standard Costs + Suitable Profit Margin.	
Efficiency Curve Method	1. Recognises improvements in production efficiency due to repetitive nature of operations and large batch quantities. 2. As efficiency improves, the unit cost of production comes down and this is reflected in pricing.	
Differential Selling Price	Use of Differential Selling Price, which is above Marginal Cost but below Total Cost, intended to absorb surplus capacity & can be achieved by - 1. Different Markets-Export Pricing, 2. Different products.	
Going Rate Pricing	1. Competitive Pricing Method wherein a Firm tries to keep its price at the average level charged by the industry. This Method can .be used in Pure Competition and Oligopoly Markets. 2. **Advantages:** (a) Useful where it is difficult to measure costs, (b) Yields fair return to all Firms in the industry, (c)	

	Most conducive for industry's harmony, (d) Signifies the pricing practice in homogeneous product markets.
Sealed Bid Pricing	***Bid*** *constitutes the Firm's Offer Price, based on the Incremental Costs plus a Reasonable Mark-Up.* *1. Low price quoted in order to win the contract - Firm may lose on profits.* *2. High prices quoted - chances of gaining the contract may be reduced.* *3. Probability Analysis may be used to analyse the impact of various bid prices.*
Incremental Pricing	*1. Involves comparison of the impact of decisions on revenues and cost If a pricing decision results in a greater increase in revenue than in costs, it is favourable.* *2.* ***Analyses*** *- (a) Relevant Cost, (b) Product-Line Relationship, (c) Opportunity Cost, (d) Time factor, (e) CVP, and (f) Risk.*
Non-Cost Factors in Pricing Decisions	*1. Provide an incentive to the Firm for adopting improved technology & maximising production,* *2. Encourage optimum utilisation of resources,* *3. Work towards better balance between demand and supply,* *4. Promote exports and / or other avenues to utilize the Firm's spare capacity, and* *5. Avoid adverse effects on the rest of the economy.* ***Note:*** *These are relevant in - (a) Price Discrimination, (b)*

 

	Peak Load Pricing, (c) Predatory Pricing.
Curvilinear CVP Analysis	*Optimum Output is the point where the gap between the Total Cost and Total Revenue curves is the* ***maximum.*** *If volume is increased beyond this level, Profits are reduced since the Incremental Cost is more than the Incremental Revenue.*
Price Equation	*1.* ***Price Equation*** *for Maximum Profit:* $P = a - bQ$, *where* P = *Price,* Q = *Quantity demanded,* a = *Price at which demand is zero,* b = *Slope of the Demand Curve* $= \frac{\text{Change in Price}}{\text{Change in Quantity}}$. *2.* ***Marginal Revenue Equation:*** *Marginal Revenue (MR)* $= P = a - 2bQ$.
Pricing in Pure Competition Market	*1.* ***Features:*** *(a) Large no. of Buyers & Sellers, (b) Homogenous product, (c) Free entry or exit, (d) Perfect knowledge of Purchasers and Sellers on prices & quantities, (e) Absence of Market Segmentation, (f) Absence of Transportation Cost, and (g) Perfect mobility of Factors of Production.* *2.* ***Price Determination conditions:*** *(a) Firm has no pricing policy of its own as it has to accept the prevalent market price.* *(b) Firm can sell nothing at any higher price.* *(c) Decision is not on price, but on the quantity to sell.*

 

	(d) Every Firm can continue to produce so long as its Marginal Cost < Selling Price.
Pricing in Monopoly	1. ***Features:*** (a) Single Seller of a particular good or service, (b) No Competition, (c) No Close Substitutes, and (d) Power to influence price. 2. ***Price determination conditions:*** (a) A Monopolist can raise the price of its products without frightening away all his customers. Extent of price increase depends on the elasticity of demand for the product. (b) Optimal Price is determined at the output level at which Marginal Revenue = Marginal Cost.
Pricing in Monopolistic Competition	1. ***Features:*** (a) Product Differentiation, (b) Existence of many Sellers and Buyers, (c) Availability of Close Substitutes (similar but not identical). 2. ***Price Determination conditions:*** For Optimal Price (a) short run: ***Marginal Revenue = Marginal Cost.*** (b) long run: ***Average Revenue = Average Cost,*** & ***Marginal Revenue = Marginal Cost.***
Pricing in Oligopoly Market	1. ***Going Rate Pricing:*** (a) Characterised by the presence of a few large sellers occupying a major share of the market. (b) Decision of each Seller will necessarily be in tune with the

 

	industry. *(c) Firms tend to charge the same price as is being charged by their competitors.* *(d) One Firm assumes role of Price Leader and the others follow any change in price by the Leader.* *2. **Pricing Strategies:** Predatory Pricing, (b) Limit-Pricing, (c) Collusion, (d) Cost-Plus Pricing.* *3. **Non-Price Competition:** Price Competition can lead to destructive price wars. Hence, Oligopolies also indulge in Non-Price Competition, viz. -* *(a) Spending more on Advertising, Sponsorship, and Product Placement,*	
	(b) Sales Promotion Strategies, e.g. free door delivery, Order Now Pay Later, Buy-l-Take-1 Free, *(c) Higher levels of Quality and After Sales Servicing, e.g. Extended Guarantees / Warranty, Free Insurance, etc.* *(d) Loyalty Schemes, Reward Points, etc. to encourage repeated buying from the same Seller.*	
New Products	***Procedure for Price Determination:*** *1. Market Survey* *2. Price Volume Relationship* *3. Incremental Contribution*	***Types of New Products:*** *1. Revolutionary Product* *2. Evolutionary Product* *3. Me-Too Product.*

 

	Approach	
Pricing Strategies	*1. **Meaning:** Broad plan of action by which an organisation intends to reach its goal.* *2. **Types:** (a) Market Entry Strategies, (b) Discount Strategies, (c) Price Discrimination Strategies, and (d) Geographic Pricing Strategies.*	
Skimming Pricing	*1. **Meaning:** Policy of charging high prices during the early period of a product's existence and in the later years the prices are gradually reduced.* *2. **Reasons:** (a) Inelastic Demand, (b) Sales Boost, (c) Assured Profit, (d) Cost-Revenue Matching.*	
Penetration Pricing	*1. **Meaning:** Policy of using a low price as the principal instrument for penetrating mass markets early. This method is used for pricing a new product and to popularise it initially.* *2. **Circumstances:** (a) Elastic demand, (b) Mass Production and, (c) Frighten off competition.*	
Distributor's Discount	*1. **Meaning:** Price deductions that systematically make the Net Price vary according to Buyer's position in the chain of distribution, and given to various Distributors in the trade channel.* *2. **Forms:** (a) Different Net Prices for different Distributor Level, (b) Uniform List Price subject to a discount structure, differing for various Distributors, (c) Single discount*	

 

	combined with differing supplementary discounts.
Price Discrimination	*1.* ***Meaning:*** *Charging different prices and it takes various forms according to whether the basis is customer, product, place or time.* *2.* ***Conditions:*** *(a) Segmentable Market, (b) No resale, (c) No competition.* *3.* ***Forms:*** *Based on - (a) Customers, (b) Product Version, (c) Place, (d) Time.*
Time Differentials	*1.* ***Meaning:*** *Charging different prices on the basis of time is a kind of price discrimination called Time differentials.* *2.* ***Classification:*** *(a) Clock-Time Differentials, (b) Calendar-Time Differentials, (c) Geographical Price Differentials, and (d) Consumer Category Price Differentials.*
Geographic Pricing	*1. Point-of-Production Pricing 3. Zone-Delivered Pricing* *2. Uniform Delivered Pricing 4. Freight-Absorption Pricing*
Sensitivity Analysis	*1.* ***Meaning:*** *It involves evaluating the effect of Price on various other factors (Demand, Output, Marketing Costs, etc.), and vice-versa. Sensitivity Analysis is performed by choosing the critical parameters upon which the Company has made its initial estimates of Revenues and Profits, and systematically changing them to evaluate how the changes will affect the Revenues and Profits.* *2.* ***Significance:*** *(a) To balance between Costs, Competitive*

 

	Market conditions, etc. and its impact on Price, (b) To determine what Price is attractive enough to generate more Sales, but is also profitable for the Firm, (c) To identify opportunities to increase or decrease prices to drive Sales, (d) To determine how sales and costs will respond to changes in the market conditions, (e) To determine how much money can be spent on Development or Marketing, etc 3. **Factors:** (a) **Internal Factors:** R&D Costs, Production Costs, Marketing Costs, Product Launch Dates, etc. (b) **External Factors:** Market Demand, Change in Competitors' Prices, Inflation, Forex Rate Fluctuations, etc.	
Pricing in Service Sector	Different methods are used for pricing and billing customers, who receive services are - (a) Supply and Labour Billing, (b) Pure Labour Billing, (c) Cost Plus Pricing, (d) Service Overhead Based Billing	
Pareto Analysis	1. Focus on the most important Concepts of decision making, in order to simplify the DM process. 2. Management can use 80:20 relationship in a number of business situations to direct its attention to key control mechanism or planning Concepts, It helps to clearly establish top priorities and to identify both profitable and unprofitable target.	
Pareto Analysis - Applications	1. Product Pricing 2. Customer Profitability Analysis	4. Activity Based Costing 5. Quality Control

	3. *ABC Analysis - Stock Control*	

One Day Revision Notes - Performance Measurement

Concept	Points to Remember	
Responsibility Centre	1. **Meaning:** (a) Activity centre of a business organisation entrusted with a special task, (b) Unit of function of a business organisation headed by an executive responsible for its performance. 2. **Types:** (a) Cost, (b) Revenue, (c) Profit, and (d) Investment Centres.	
Responsibility Accounting	1. Control system of management accounting and reporting. 2. Involves the creation / recognition of various responsibility centers. 3. Standards of performance are clearly defined. 4. Furnishing of performance report at periodical intervals. 5. Actuals compared with standards to identify deviations & initiate appropriate action.	
Pre requisites for Resp. Accounting	1. Area of responsibility and authority of each Responsibility Centre 2. Set of goals	3. Performance Report 4. Items which may require Management's attention

Limitations	*1. Difficulty in preparation of an organisation chart.* *2. Conflict of individual interest with organisational interest.* *3. Passive resistance to the reporting system.*		
Responsibility Budgeting	*1.* ***Meaning:*** *Budgetary Control System wherein a budget is prepared for each responsibility centre, showing the performance expected of the Responsibility Centre Manager.* *2.* ***Principles:*** *(a) Goal Congruence, (b) Autonomy, and (c) Performance Appraisal.*		
Performance Measurement Process	*1. Identify the* ***Vision, Mission and Objectives*** *of the Entity* *2. Define the* ***Strategy*** *to achieve the above Vision, Mission and Objectives of the Entity* *3. Link the Strategies with* ***CSFsfor*** *various Financial & Non Financial perspectives* *4. Identify appropriate Performance Measures/ Key Performance Indicators for each perspective/CSF.* *5. Measure the actual outcome and* ***compare*** *with the pre-defined Performance Measures.* *6. Analyse and* ***implement suitable action*** *including redesign of previous stages.*		
Linking CSFs and KPIs to Strategy		***Critical Success Factors (CSF)***	***Key Performance Indicators (KPI)***
	Meaning	*Objectives that Businesses are trying to*	*Sets of measures & associated targets, that*

		achieve, as an Entity, as a Dept, or as SBU.	*will result in successful completion of a CSF.*
	Focus	*CSFs denote the "**what**" factors - i.e. what are the things the Company needs to do in order to achieve its goals.*	*KPIs represent the "**how**" factors - i.e. how the Company will achieve what it wants to.*
	Linkage	*CSFs are tied to the Entity's overall strategy & derived from the strategic goals.*	*KPIs are linked to the CSF. A single CSF can have more than one KPI, if required.*
	Purpose	*CSFs seek to go deeper into the high-level strategic goals, and lay them out as a list of categorized objectives that will collectively drive the Company's strategy forward.*	*To operationalize the CSFs into achievable elements called Targets or Thresholds. KPI should be specific, measurable, achievable, relevant and time-constrained **(SMART).***
	Factors	*(a) Industry Structure, (b) Competitive Strategy, (c) Environmental Factors, and (d) Temporary Influences.*	*KPI Targets are ascertained using factors like Industry Analysis, and Internal Analysis.*
	Review	*To be reviewed & evaluated with respect to*	*Governed by a feedback and monitoring process, to*

		the Company's high-level strategic goals.	*achieve CSFs & Goals.*
	Linkage: *1. To ensure effective measurement of business performance -* *(a) KPIs must be selected and designed, so as to ensure that the CSF is delivered if the KPI meets the Threshold,* ***and*** *(b) CSFs in turn must be constructed, to ensure that the Company's strategic vision is delivered if the CSFs are met.* *2. Objectives, CSFs, and KPIs together represent a chain of links that together deliver a Company's strategic goal, by breaking down that strategic vision in to a set of quantifiable targets.*		
Performance Reporting	*Important considerations in drawing reports & determining their scope are - (1) Significance of a Report, (2) Timeliness, (3) Accuracy, (4) Appropriateness, (5) Discrimination, (6) Presentation.*		
Divisional Performance Measures	*1.* ***Merits:*** *(a) develops agreed measures of activity, (b) helps in setting of targets for Managers, (c)leads to greater understanding of Process, (d) clarifies the Entity's objectives, (e) promotes accountability to Stakeholder, (f) better comparison between Divisions, (g) inter-Firm Comparison.* *2.* ***Demerits:*** *(a) undue focus on Measurements, (b) focus on one measurement to the detriment of others, (c) more emphasis on short-term measures, (d) misinterpreting the data reported, (e) Misrepresentation of data to suit specific*		

	purposes, (f) using out-of-date measures, and a tendency towards being rigid, conventional and unimaginative. *3. **Good Performance Measure:** (a) Completeness, (b) Pervasiveness, (c) Comprehensiveness, (d) Goal Congruence, (e) Responsibility, (f) Goal Orientation, (g) Objectivity, (h) Clarity.*
Types of Performance Measures	*1. **Financial Evaluation:*** *(a) **Return on Investment (ROI):** Divisional Profit expressed as a percentage of the Assets employed in the Division.* *(b) **Residual Income (RI):** Divisional Profit (less) [Divisional Investment × Cost of Capital].* *(c) **Economic Value Added (EVA):** NOPAT less [WACC × Capital Employed], where NOPAT =* *(i) Operating Profit (EBIT) (-) Tax Expense (+) (Interest × Tax Rate) [OR]* *(ii) Profit After Tax (EAT) + [Interest × (100% - Tax Rate)].* *(d) **Shareholder Value Added (SVA):** Shareholder Value = Value of a Company's present and future Cash Flows, discounted at an appropriate Cost of Capital.* *2. **Financial and Non-Financial Evaluation:*** *(a) **Triple Bottom Line (TBL):** Bottom Line represents "Profit" or "Loss". TBL (or 3BL or 3P) Concept focusses on the following dimensions - (i) **People,** i.e. the **Social Equity** Bottom Line, (ii) **Planet,** the **Environmental** Bottom Line, (iii) **Profit,** the **Economic** bottom line*

	(b) ***Performance Pyramid:*** Performance Pyramid links the business strategy with day-to-day operations, as under - (i) Level 1 or Top Level, (ii) Level 2 or Business Level, (iii) Level 3 or Operating System Level, (iv) Level 4 or Department Level. (c) ***Performance Prism:*** It aims to manage the performance of an Entity from five inter-related "facets" - (i) Stakeholder Satisfaction, (ii) Stakeholder Contribution, (iii) Strategies, (iv)Processes, (v) Capabilities. (d) ***Building Block Model:*** focusses on 3 Concepts - (i) Standards (ii) Rewards (iii)Dimensions.
Balanced Score Card (BSC)	1. ***Meaning:*** Set of financial & non-financial measures relating to a Company's CSFs. 2. ***Objective:*** to provide a comprehensive framework for translating a Firm's strategic objectives into a coherent set of performance measures. 3. ***Perspectives:*** (a) Customer, (b) Internal, (c) Innovation and Learning, (d) Financial. 4. ***Advantages:*** (a) Wholistic approach, (b) Overall Agenda, (c) Objectivity, (d) Management By Objectives, (e) Feedback and Learning, (f) System Approach. 5. ***Disadvantages:*** (a) Non-financial Concepts, (b) Need for Trade-offs, (c) Objective and Subjective Measures, (d) Non Consideration of IT and R&D, (e) Performance Evaluation. 6. ***Process of creating BSC:*** (a) Identify the Firm's Vision, (b) Identify the Firm's Strategies, (c)Define CSFs and

	Perspectives, (d) Identify Measures to ensure everything is as planned, (e)Evaluation of BSC, (f) Create Action Plans, (g) Follow up and Manage. *7. **Strategy Mapping:** (a) allows Entities to describe and communicate their strategies, (b) serves as a basis for the development of financial and non-financial BSC measures that can be used to monitor strategy execution and performance, (c) links & aligns organisational and individual targets and initiatives with a defined mission and desired strategic outcomes,*
Benchmarking	*1. **Meaning:** Process of identifying and **learning** from the best practices anywhere in the world.* *2. **Types:** (a) Competitive, (b) Strategic, (c) Global, (d) Process, (e) Functional, (f) Internal, (g)External, (h) Intra-Group, (i) Inter-Industry.* *3. **Stages:** (a) Planning, (b) Collection of Data & Information, (c) Analysis of findings based on data collected, (d) Formulation & implementation of recommendations, (e) Constant monitoring & reviewing.* *4. **Pre-Requisites:** (a) Commitment, (b) Clarity of Objectives, (c) Appropriate Scope, (d)Resources, (e) Skills, (f) Communication.* *5. **Difficulties:** (a) Time consuming, (b) Lack of Management support, (c) Resistance from Employees, (d) Paper Goals, (e) Copy-Paste attitude.* *6. **Code of Conduct:** (a) Principle of Legality, (b) Principles of*

	Exchange, (c) Principle of Confidentiality, (d) Principle of Use, (e) Principle of first Party Contact, (f) Principle of Third Party Contact, (g) Principle of Preparation.

One Day Revision Notes - Strategic Analysis of Operating Income

Strategic Analysis of Operating Profit

Growth Component (for measuring the increase/ decrease in Revenue and Costs, due to **change in Sale Quantity**)	**Price Recovery Component** (for measuring the Change in the Revenue & Costs due to **Changes in Prices**)	**Productivity Component** (for measuring the Change in Operating Income due to **Changes in Product Mix and/or Yield of Inputs**)

Revenue Effect	Cost Effect	Revenue Effect	Cost Effect		
↓		↓			
A		**C**			
Variable Cost	Fixed Cost	Variable Cost	Fixed Cost	Variable Cost	Fixed Cost
↓	↓	↓	↓	↓	↓
B1	**B2**	**D1**	**D2**	**E1**	**E2**

Component	**Computation Formula**
GROWTH:	For measuring the increase/ decrease in Revenue and Costs, due to change in Sale Quantity
A. Revenue	(Sales Quantity in CY - Sales Quantity in LY) × Selling

Effect	*Price in LY*
***B1.** Variable Cost Effect*	*Input Prices for LY × (A - B) where -* *A = Actual Units of Input used to produce LY Output, i.e. Base Year Standards,* *B = Units of Input that would have been used to produce CY output, i.e. Standard Consumption for Actual Output, assuming the same input-output relationship in LY.*
***B2.** Fixed Cost Effect*	*Price pu of Capacity in LY × (A - B) where -* *A = Actual Units of Capacity used to produce LY Output, i.e. Base Year Standards.* *B = Units of Capacity that would have been used to produce CY output, i.e. Standard Capacity for Actual Output, assuming the same relationship in LY.*
PRICE RECOVERY:	*For measuring the Change in the Revenue & Costs due to Changes in Prices*
***C.** Revenue Effect*	*(Selling Price of CY - Selling Price of LY) × Sale Quantity in CY*
***D1.** Variable Cost Effect*	*(A - B) × C where -* *A = Input Prices for LY, i.e. Standard Prices of Materials, etc. for LY.* *B = Input Prices for CY, i.e. Standard Prices of Materials, etc. for CY.* *C = Units of Input that would have been used to produce*

	the CY output, i.e. Standard Consumption for Actual Output, assuming the same input-output relationship in LY.
***D2.** Fixed Cost Effect*	*(A - B) × C where -* *A = Input Prices for LY, i.e. Standard Prices of Materials, etc. for LY.* *B = Input Prices for CY, i.e. Standard Prices of Materials, etc. for CY.* *C = Units of Capacity that would have been used to produce CY output, i.e. Standard Capacity for Actual Output, assuming the same relationship in LY.*
PRODUCTIVITY:	*for measuring the Change due to Changes in Product Mix and/or Yield of Inputs.*
***E1.** Variable Cost Effect*	*Input Prices for CY × (A - B) where -* *A = Units of Input that would have been used to produce CY Output, i.e. Standard Consumption for Actual Output, assuming the same input-output relationship in LY.* *B = Actual Input or Capacity used for CY.*
***E2.** Fixed Cost Effect*	*Price pu of Capacity in CY × (A - B) × C where -* *A = Units of Capacity that would have been used to produce CY Output, i.e. Standard Capacity for Actual Output, assuming the same relationship in LY.* *B = Actual Input or Capacity used for CY.*

 

Activity Based Costing (ABC)

Concept	*Points to Remember*	
Changes in nature of Mfrg Costs	1. Cost Pool Identification, 2. Activity Related Costs,	3. Standard Costing System, 4. Design of Cost Accounting System.
ABC - Meaning	An approach to the costing and monitoring of activities which involves tracing resource consumption and costing final outputs. Resources are assigned to Activities, and Activities to Cost Objects based on consumption estimates. The latter utillise Cost Drivers to attach Activity Costs to Outputs.	
Cost Object & Cost Driver	1. **Cost Object** - Item for which cost measurement is required. 2. **Cost Driver:** Factor that causes a change in the cost of an activity. Cost Drivers are classified as - (a) **Resource Cost Driver:** Measure of quantity of resources consumed by an activity & used to assign the cost of a resource to an activity/ cost pool. (b) **Activity Cost Driver:** Measure of frequency and intensity of demand, placed on activities by cost objects & used to assign activity costs to cost objects. **Note:** Selection of Cost Drivers is dependent upon - (a) Degree of Correlation, (b) Cost of Measurement, and (c) Behavioural Effects.	
Stages in ABC	*Step*	*Particulars*
	1	Identify various activities within the Firm into - Primary & Secondary.
	2	Relate the Overheads to activities using Resource Cost Drivers.

 

	3	*Apportion costs of Support activities over Primary activities.*
	4	*Determine Activity Cost Drivers for each Activity/ Cost Pool.*
	5	*Compute ABC Rate = Total Cost of Activity (Cost Pool) ÷ Activity Cost Driver*
	6	*Assign Costs to Cost Objects using formula- Resources Consumed × ABC Rate*
Activities	*1. Unit Level Activities, 2. Batch Level Activities, 3. Product Level Activities, 4. Facility Level Activities*	
VA vs NVA Activities	***Value-Added Activities (VA)***	***Non-Value-Added activities (NVA)***
	Activities ***necessary*** *for the utility or performance of the product.*	***Additional and extraneous activities,*** *not fully necessary for product performance / utility.*
	Customers perceive as adding usefulness to the product or service that they purchase.	*If eliminated, this will not reduce the actual or perceived value that customer obtain by using the product or service.*
	Work that is valued by the external or internal customer.	*Work that is not valued by the external or internal customer.*
	They improve or maintain the quality or function of a product. VA activities result in "costs" and not in losses.	*NVA activities do not improve the quality or function of a product or service, NVA activities create waste, result in delay of some sort.*

	Making product more versatile for certain other uses.	*Expediting due to work delays, cost of re-work of defectives, etc.*
	Management aims to simplify VA Activities and manage "costs".	*Management should focus on elimination of NVA Activities and thereby avoid "losses".*
Identification of VA & NVA	*1. Generally, activities resulting in Direct Value Added Costs are **Value-Added Activities** - i.e. (a) absolutely necessary, (b) valued by customer, (c) performed efficiently, (d) ensures product quality.* *2. Activities that are attributed to inefficiency, defective working, and are absolutely unnecessary are considered as **Non-Value-Added Activities.*** *3. Every other activity is considered as "Grey Area Activity", i.e. benefit of doubt activity, which may be further classified into "VA" and "NVA" after careful analysis of facts.*	
Time Components for VA vs NVA	***Type***	***Description***
	Processing Time	*Time during which a Product is undergoing conversion activity.*
	Inspection Time	*Time spent in confirming that the Product is of the required quality.*
	Waiting Time	*Time spent by Raw Material or WIP in waiting for the next Operation.*
	Move Time	*Time spent in moving Raw Materials, WIP or Finished Goods between Operations.*
	Storage Time	*Time during which Materials, WIP, or Finished Goods are held in Stock before further processing or shipment.*

	Delivery Cycle Time	*Time between the receipt of Customer Order and Delivery of Goods.*
	Manufacturing Cycle Time	*Total Production Time required per unit = VA Time + NVA Time, where* *· VA Time = Processing Time* *· NVA Time = Processing Time +Inspection Time + Waiting Time + Move Time*
	Velocity	*Number of Units produced in the given Time.*
	Manufacturing Cycle Efficiency	Processing Time (Processing Time + Inspection Time + WaitingTime + MoveT
Variances in ABC System	***Total OH Variance*** *= Efficiency Variance + Price Variance, as computed below -* *·* ***Efficiency Variance*** *= (Resources Allowed - Actual Resources)×Std ABC Rate* *·* ***Expenditure (or Price) Variance*** *= (Std Rate - Actual Rate) × Actual Cost Driver Units used*	
ABN	*1. The use of ABC as a costing tool to manage costs at activity level is known as Activity Based Cost Management (ABM). ABM utilises cost information gathered through ABC.* *2. Through various analyses, viz. (a) Cost Driver Analysis, (b) Activity Analysis, and (c) Performance Analysis, ABM manages activities rather than resources. It determines what drives the activities of the Firm & how activities can be improved to increase profitability.* *3. ABM seeks to satisfy the following customer needs while making fewer demands for resources - (a)Lower Costs, (b) Higher Quality, (c) Faster Response Time, and (d) Greater*	

	Innovation. ***4. Stages:*** *(a) Identification of the activities that have taken place in the Firm.* *(b) Assigning Costs to Cost Pool for each activity.* *(c) Spreading of Support Activities Costs across the Primary Activities.* *(d) Determining Cost Driver for each activity.* *(e) Assigning the costs of Activities to Products, according to product demand for Activities.* *5.* ***Business Applications:*** *(a) Cost Reduction, (b) Activity Based Budgeting, (c) Business Process Reengineering (BPR), (d) Benchmarking, (e) Performance Measurement.* *6.* ***Benefits:*** *(a) Cost Reduction, (b) Budget Implementation, (c) Cost Definition, (d) Management Decision Making, (e) Efficient Resource Utilisation.*
Customer Profitability Analysis	*Using ABC, profitability can be analysed customer group-wise, since ABC creates cost pools for activities. Customers use some activities but not all, and different groups of customers have different 'Activity Profiles'. Hence analysis of relative profitability based on customer category and related decision-making is called Customer Profitability Analysis.*

Format of DPP Statement

Particulars / Product	***A***	***B***	***C***	***D***	***Total***
Selling Price per unit	*XX*	*XX*	*XX*	*XX*	*XX*
Less: *Bought-in-Price per unit*	*XX*	*XX*	*XX*	*XX*	*XX*
Gross Margin per unit	*XX*	*XX*	*XX*	*XX*	*XX*
Less: *Directly Attributable Product Costs*	*XX*	*XX*	*XX*	*XX*	*XX*

1. Warehousing and Storage Costs - e.g. space, insurance	XX	XX	XX	XX	XX
2. Transport Costs - e.g. fuel, vehicle maintenance, labour	XX	XX	XX	XX	XX
3. Product Batch Costs	XX	XX	XX	XX	XX
4. Inventory Financing Costs	XX	XX	XX	XX	XX
Direct Product Profit per unit	XX	XX	XX	XX	XX
***Less:** Indirect Costs and Common Overheads*					XX
Net Profit					XX

 

One Day Revision Notes - Budgetary Control

Concept	Points to Remember
Budget	1. Budget is a financial and /or quantitative statement. 2. prepared & approved before a defined period in which it is to be pursued to attain given objectives. 3. may include Income, Expenditure and Employment of Capital.
Budgetary Control	Process by which budgets are prepared for the future period and are compared with the actual performance for finding out variances, if any. Managers set financial and performance goals, compare the actual results with the budgets, and adjust performance, as it is needed.
Prerequisites of Effective Budgetary Control	1. There should be clear demarcation between areas of Managerial Responsibility. 2. Budget Targets should be reasonable and capable of being achieved. 3. There should be proper Data Collection, Analysis and Reporting Techniques. 4. Variance Reports should be generated in a timely manner. 5. The reporting periods should be shorter and appropriate for the Entity, generally a month.

 

	6. Reports should be aimed at individual Managers, rather than as general information. 7. There should be an attitude of Personnel to take Reports seriously. 8. Focus should be to get operations back under control if they are shown to be out of control.		
Limitations of Traditional Budgeting	1. Not strategically focussed on long-term goals, 2. Often contradictory amongst themselves, 3. Focus on Cost Reduction and not on Value Creation, 4. Based on unsupported assumptions and guesswork, 5. Time-consuming and costly, 6. Lacks responsiveness and flexibility, 7. Creates barrier to change, 8. Does not add much Value, 9. Creates Departmental Barriers rather than encourage Knowledge Sharing, 10. Updated too infrequently, usually annually, 11. Does not adequately motivate people,		
Traditional Budgeting vs Beyond Budgeting	**Point**	**Traditional Budgeting**	**Beyond Budgeting**
	Objective	Efficient Utilization of Financial Capital	High Degree of Enterprise Adaptability and Constant

		and other Resources.	Innovation..
	Targets and Rewards	· Incremental Targets · Fixed Incentives	· Stretchable Goals · Relative Targets and Rewards
	Planning and Controls	· Fixed Annual Plans · Variance-based Controls	· Continuous Planning / Improvement · KPI's & Rolling Forecasts
	Resource and Coordination	· Pre-allocated resources · Centralised coordination	· Resources on demand · Dynamic Co-ordination
	Organizational Culture	· Central Control · Focus on managing numbers	· Local control of Goals/ Plans · Focus on Value Creation

One Day Revision Notes - Basics of Strategic Cost Management

	Difference between **Traditional vs Strategic Cost Management**		
		TCM	**SCM**
	Approach	**Re-active** Approach	**Pro-active** Approach
	Time	focusses on **short-run** objectives	focusses on **long-run** objectives of the Firm.
	Dimension	TCM aims at satisfying the **internal** decision-making dimension.	SCM aims at satisfying all Stake-holders, and has **internal & external** dimensions.
	Business Activities	viewed as **functions,** viz. Manufacturing, Admin, Selling, Distribution, etc.	viewed as part of a **Value Chain** concept, with intricate inter-relationships.
	Product Focus	**Internal** Perspective of Product, i.e. produce what the Firm is good at producing, and effectively market it	**External** Perspective of Product, i.e. identify what customers want, and increase capabilities to produce products for satisfying Customers.
	Impact	may lead to inferior	SCM seeks to maintain and

	on Quality	*quality of products & services, to lower costs.*	***improve value or quality*** *to the Customer.*
	Cost Driver Concept	***Cost Unit*** *is taken as the Cost Driver. Thus, TCM is a* ***volume-based*** *absorption costing approach.*	*involves detailed analysis of multiple Cost Drivers, for each activity. In addition, Structural and Executional Cost Drivers are also identified.*
	Risk	*TCM is a* ***risk-averse*** *approach.*	*SCM seeks to* ***manage risks*** *effectively.*
	Approach to Cost	*Primary Objective is* ***Cost Control & Cost Reduction.***	*Primary Objective is Cost Management & Cost Containment* ***simultaneously.***
Concept	***Points to Remember***		
	Scope of MIS Reports	*Ensuring adherence to Budgets / Plans, and drawing Managerial Attention to major Variances.*	*Assisting an Entity to create sustainable* ***competitive advantage*** *through - (a) Product Differentiation, and (b) Cost Leadership.*
	Cost Data	*TCM primarily uses* ***internal,*** *historical cost data.*	*SCM uses both* ***internal*** *&* ***external*** *data, e.g. Market Information, Competitive Information.*
	Economic Models	*TCM uses simple models of Micro-Economics and Price-Demand relationships*	*SCM uses advanced models in Economics, Industrial Organisation, Operations Research, Value Analysis,*

		for cost analysis.	*etc.*
Components of Strategic Cost Management	***1. Value Chain Analysis – Refer this Chapter*** ***2. Cost Driver Analysis - Structural vs Executional Cost Drivers:***		
		Structural Cost Drivers	***Executional Cost Drivers***
	(a)	*They consist of* ***organisational factors*** *that determine the economic structure driving the cost of the Firm's products.*	*They capture a Firm's* ***operational decisions*** *on how best to employ its resources to achieve its goals and objectives.*
	(b)	*These reflect a Firm's* ***long-term decisions,*** *which position the Firm in its industry and marketplace.*	*These Cost Drivers are determined by management policy, style & culture. They are comparatively* ***short-term.***
	(c)	*Structural Cost Drivers* ***may change.***	*Executional Cost Drivers* ***may improve.***
	(d)	*They cover Concepts like Scale, Scope, Learning, Technology, Complexity, etc.*	*They cover Concepts like Capacity Utilisation, Plant Layout, Product Design, Employee Participation, Supplier and Customer Liaison, etc.*
	3. Strategic Positioning Analysis (SPA): *(a) SPA is an Entity's relative position within its Industry matters for performance,* *(b) SPA is concerned with impact of external and internal*		

	environment on the overall strategy of a Firm, *(c) Strategic Positioning - (i) reflects the choices an Entity makes about the kind of value it will create and how that value will be created differently than its Competitors, (ii) considers the future, to assess whether the current strategy is a suitable fit with the strategic position.* *(d) Strategic Position is driven by - (i) External Environment, (ii) Internal Environment, (iii)Organization Values, Culture and Systems.*
Vision, Mission & Objectives w.r.t Strategic Cost Management	*1.* ***Vision:*** *(a) a road map of a Company's future, (b) providing specifics about technology and customer focus, the geographic and product markets to be pursued, and (c) the capabilities it plans to develop, and the kind of Company that the Management is trying to create.* *2.* ***Mission:*** *(a) Mission is an expression of the growth ambition of the Firm, (b) Mission answers the question "What business is the Company doing?", (c) Mission seeks to ensure unanimity of purpose.* *3.* ***Objectives:*** *Objectives are - (a) an organization's performance targets, i.e. results and outcomes it wants to achieve, (b) yardstick for tracking an Entity's performance and progress, (c) used for translating Business Vision and Mission, (d) open-ended attributes that denote the future states or outcomes, whereas Goals are close-ended attributes which are more precise and specific.* ***Note:*** *The terms "Objectives" and "Goals" may be used interchangeably.* *4.* ***Significance:*** *(a) Purpose of Strategic Cost Mgmt is to* ***align*** *the Vision &*

	Mission Statements, along with Objectives. *(b) Effective Cost Management involves a broad focus on the* ***Value Chain,*** *to identify which activities are the most valuable (i.e. in terms of Cost or Differentiation Advantage) to the Firm and which ones could be improved to provide competitive advantage.* *(c) Strategic Cost Management seeks to evaluate the positive or adverse reactions of the Entity's Strategies (based on its Vision, Mission, Objectives) to each element of - (i) Value Chain, (ii) Positioning Decisions and (iii) Cost Drivers.* *(d) The overlap between these three types of Analysis Techniques can relate back to Executional, Structural and Organizational Costs. Cost is thus driven by the strategic choices that Managers make in the Firm.*	
"Value Shop" Concept	***Point***	***Description***
	Concept	*A Value Shop is an organization designed to solve Customer or Client problems rather than creating value by producing output from an input of Raw Materials.*
	Features	*1. Mobilize resources to solve specific problems.* *2. In Value Shop,* ***no value addition*** *takes place. It only deals with the problem, figure- out the main area requires its service and finally comes with the solution.*
Concept	***Points to Remember***	
		3. ***iterative,*** *repeatedly performing a generic set of activities until a solution is reached.* *4. applies to* ***Service Sector Entities,*** *like Telecom, Insurance & Banks.*

 

		5. ***Support Activities*** *in a Value Shop comprise of - (a) Infrastructure, (b) Human Resource Management, (c) Technology Development, and (d) Infrastructure.*
	Activities	*(a) Acquisition, (b) Problem Solving, (c) Decision-making, (d) Execution, (e) Control.*
	Areas	*Areas of Value Shop includes - 1. Problem & Opportunity Assessment, 2. Resource Mobilisation, 3. Project Management, 4. Solutions Delivery, 5. Outcome Measurement, & 6.Learning.*
Supply Chain	*1. It is the entire network of Entities working together to design, produce, deliver and service products.* *2. All activities associated with the flow and transformation of goods from Raw Material to the Final Customer is called Supply Chain.* *3. It comprises Vendors who supply Raw Material, Producers who convert the Raw Material into Finished Products, Warehouses that store products, Distribution Centers that deliver to the Retailers, and Retailers who sell the product to the Final Customer.*	
Supply Chain Management (SCM)	*1.* ***Definition:*** *The Global Supply Chain Forum (GSCF) defines Supply Chain Management as the "integration of key business processes from end-user through original suppliers that provides products, services, and information that add value for customers and other stakeholders".* *2.* ***Process:*** *(a) Customer Relationship Management, (b) Supplier Relationship Management, (c) Customer Service Management, (d) Demand Management, (e) Order Fulfilment, (f)*	

 

	Manufacturing Flow Management, (g) Product Development & Commercialization, (h) Returns Management. *3. **Benefits:** (a) New/ Improved Processes, (b) Standardization, (c) Customer Responsiveness, (d)Inventory Reduction, (e) Personnel Reduction, (f) Productivity Improvement, (g) Order Management Improvement, (h) Financial Cycle Improvement, (i) Information Visibility, (j) Flexibility and Adaptability, (k) Better Business Performance.*	
Push Model and Pull Model	***Push Model***	***Pull Model***
	Process Flow: *(a) Supplier gives materials to the Manufacturer/Producer.* *(b) Manufacturer produces Products as per Demand Forecast, and supplies to Wholesaler Distributor.* *(c) Wholesaler forwards goods to Retailer based on past stock movements and demand forecast.* *(d) Retailer stocks goods as per Supplies received.* *(e) Customer buys goods, if available with Retailer.* ***Note:** Demand Forecasting is done by many advanced techniques incl. Operations Research, Data Mining, etc.*	*Process Flow:* *(a) Customer orders the Goods with Retailer.* *(b) Retailer calls for Stock from the Wholesaler Distributor, as per Orders received.* *(c) Wholesaler calls for Products from the Manufacturer as per Retailers' Orders.* *(d) Manufacturer produces Products as per Orders received from Wholesaler Distributor!* *(e) Supplier gives materials to the Manufacturer as per orders received from the Manufacturer.*

	This is a production-availability based approach. Customer is generally required to buy whatever is available in the market.	*This is a customer-oriented and market-driven approach. Customers have a significant voice in the functioning of the Supply Chain.*
Flows	*Flows may be of - (a) Material, (b) Information, (c) Capital, in the following manner -* *1. **Upstream Flow:** It is the Flow relating to the **Supplier.*** *2. **Downstream Flow:** It is the Flow relating to the **Customer.***	
Management of Upstream and Downstream Flows	*1. **Upstream SCM:** This involves Management of Transactions with Suppliers, and includes - (a) Relationship with Suppliers, (b) Use of IT, i.e. E-Procurement Process such as E-Sourcing, E-Procurement, E-Payment.* *2. **Downstream SCM:** This involves Management of Transactions with Customer. It includes -* *(a) **Relationship Marketing:** 6 Market Models viz. - (a) Internal Markets, (b) Referral Markets,* *(c) Influence Markets, (d) Recruitment Markets, (e) Supplier's Markets, (f) Customer's Markets.* *(b) **Customers Relationship Management:** Strategies such as - (a) Customer Behaviour Analysis, (b) Customers Account Profitability (CAP), (c) Customers Lifetime Value (CLV),* *(d) Customer's Selection, Acquisition, Retention and Extension.* *(c) **Others:** Information Technology, Service Level Agreements (SLA), Brand Strategy.*	
Gain Sharing	*1. **Meaning:** Arrangement where a Supplier agrees to perform its side of the contract with no guarantee of receiving a*	

Arrangement	*payment. Instead, any payment received is based upon the benefits that emerge to the Customer as a result of the successful completion of the Supplier's side of the bargain.* *2. **Risk:** The Supplier can be described as taking an Equity Stake in the Customer rather than entering into a contract with the Customer. The Supplier has the risk of receiving no payment at all.*
Concept	***Points to Remember***
	*3. **Returns:** If the benefits to the Customer are very high, the Supplier can be rewarded with a large return. Such Arrangements constitute a win-win situation for Suppliers and their Customers.* *4. **Effectiveness:** For Gain-Sharing to be effective, there must be no rewards for the Suppliers to achieve a higher return through adversarial behaviour or by hiding behind the contract.*
Outsourcing or Contracting Out	*1. **Meaning:** (a) It involves shifting tasks, operations, jobs or processes to another party for a span of time, so as to reduce costs or improve efficiency, (b) The Outsourced Activity can be done at the Entity's premises or outside, (c) Outsourcing may relate to manufacturing activities or service activities.* *2. **Merits:** (a) Savings in Cost of Operations, Labour, OH, (b) Reduction in Investments in Technology, Infrastructure and HR, (c) Better flexibility in Staffing and Manpower Management, (d) Effective when used in the context of downsizing or re-engineering, (e) Obtaining the efficient services of a Third Party in specified outsourced activities.* *3. **Demerits:** (a) Quality Problems due to inexperienced*

	workers or improper process, at Contractors level, (b) Reduced control over operations and deliverables of activities outsourced, (c) Risk of losing sensitive data and the loss of confidentiality, etc.
Strategic Cost Management in Agriculture Sector	*1.* ***Challenges to Cost Mgmt:*** *(a) Fragmented & Unorganized Structure of Industry, (b) Imbalance of Power across the Supply Chain, leading to exploitation of most Farmers and their operations are at very low margins, (c) Low levels of literacy and hence, low initiative to adopt new Strategies, (d)Lack of proper understanding of Costs and Prices, (e) Lack of collaboration between Farmers, so that Profits are transferred only to the Intermediaries, (f) Inadequate regulation of Intermediaries, (g) Price Fluctuations, which leads to difficulty in applying techniques like Target Costing, etc.* *2.* ***Cost Management Strategies:*** *(a) Using Activity Based Costing Techniques, to trace all costs effectively, and determine Pricing Method accordingly, (b) Strengthening of the Supply Chain, with respect of creation of infrastructure for Logistics, Storage, etc.*
Strategic Cost Management in Information Technology	*1.* ***Features of IT Sector:*** *(a) Various sizes of Entities -SMEs to very large Entities, (b) Variety of services, deliverables & customer requirements (lack of standardization), (c) Multiple Activity Models - (i) in-house / on-site work, (ii) development / support / upgradation projects, (d) Complex Operating Structure, with a separate Department for Cost Allocation, Budgeting, etc. (e) Difficulty in assignment and management*

Sector	*of Indirect Costs, (f) Difficulty in measurement of Service WIP, etc.* *2.* ***Cost Management Strategies:*** *(a) Use of Activity Based Costing to trace Direct and Indirect Costs relating to activities, (b) Effective Cost Analysis and MIS Reporting, for better Performance Evaluation, (c) Use of Value Chain Analysis across different activities / levels, etc.* *3.* ***4D Framework:*** *(a) Defining Organization Vision, (b) Documentation of the Current State, (c)Delineation of Target Business Architecture, (d) Decision: Build vs Buy.*
Strategic Cost Management in Power Sector	*1.* ***Features of Power Sector:*** *(a) Stakeholders = Existing and Future Consumers, Industries, Government, Regulators, and Investors, (b) Continuous growing demand of Electricity, coupled with shortage of Coal Reserves, (c) Limited number of Suppliers of Electricity, mostly PSUs closely regulated by Govt, (d) Highly Capital-intensive, with long gestation periods (7-8 years) and an even longer Operating Period (over 25 years), (e) Continuous Network between Generators, Transmitters, Distributors, and Consumers. Electricity is generated at Power Plants and moves through a* ***Grid,*** *consisting of Electricity Substations, Transformers, and Power Lines that connect Electricity Producers and Consumers, (f) Significant Distribution Loss & Inefficiency Gaps between generation and consumption of electricity, along with in-disciplined Consumer, (g) Flexible Cost Allocation system, (h) Energy Subsidies, (i) Tariff Determination based on cost at various points of operation.* *2.* ***Cost Management Strategies: (a)*** *Developing a Flexible Cost*

	Allocation, (b) Multi-dimensional Costing Calculations, (c) Price Determination & Tariff Regulation, (d) Analysis of Distribution Losses and Inefficiency Gap, (e) Effective Cost Analysis & MIS Reporting, (f) Use of Value Chain Analysis across different activities / levels - Generation, Transmission, Distribution, Storage, Marketing, Customer, Metering, Collection Management, Finance, etc.

One Day Revision Notes - Value Chain Analysis

Concept	Points to Remember	
Value Chain Concept	1. **Value Chain:** The Value Chain for any Firm is the value-creating activities, all the way from basic Raw Material sources from Component Suppliers through to the ultimate end-use product delivered into the Final Consumers' hands.	
	2. **Industry Value Chain:** (a) It refers to the series of activities, which add value to the product supplied to the industry, (b) It starts with the value-creating processes of Suppliers, who provide the basic Raw Materials and Components, (c) It continues with the value creating processes of different classes of Buyers or End-Use Consumers, and culminates in the disposal and recycling of materials.	
Activity Classification	1. Primary /Line Activities - (a) Inbound Logistics, (b) Operations, (c) Outbound Logistics, (d) Marketing and Sales, (e) Post Sales Service. 2. Support Activities - (a) Procurement, (b) Technology Development, (c) HR Mgmt, (d) Admn.	
Forms of Competitive Advantage	Differentiation Advantage	Low-Cost Advantage
	Occurs when customers perceive a Firm's product is of higher quality, involves less risk and / or	A Firm enjoys a relative low-cost advantage if its total costs are lower than the

	outperforms competing products.	*market average.*
	Offer customers better value for equivalent price.	*Offer customers equivalent value for lower price.*
	Gained by - *1. Higher Quality of Products / Services,* *2. Innovative Products & superior customer service,* *3. Offering a wide range of products / services which are aligned with Customer Expectations,* *4. After-Sales Support, On-Time Delivery, reducing waiting time of Customers, etc.*	***Gained by -*** *1. Access to low-cost raw materials,* *2. Innovative process technology,* *3. Low-cost access to distribution channels* *4. Economies of scale,* *5. Learning or Experience Curve Effects,* *6. Superior Operating Management, etc.*
	Exploited by - *1. Increasing prices until it offsets improvement in customer benefits, or* *2. Pricing below the 'full premium' level to build market share.*	***Exploited by -*** *1. Pricing the products lower than its competitors' to gain market share &* *maintain current profitability, or 2. Matching with the price of competing products and increase its*

<table>
<tr><td></td><td colspan="2"></td><td>profitability.</td></tr>
<tr><td rowspan="6">Using Resources and Capabilities for Competitive Advantage</td><td colspan="3">1. Resources:</td></tr>
<tr><td>Point</td><td>Tangible</td><td>Intangible</td></tr>
<tr><td>Meaning</td><td>Assets that can be seen and quantified.</td><td>Assets that are rooted deeply in the Firm's history and have accumulated over time.</td></tr>
<tr><td>Imitability</td><td>Comparatively easier for Rivals to imitate & duplicate.</td><td>They are embedded in unique patterns of routines. Hence, relatively difficult for Competitors to analyse & imitate.</td></tr>
<tr><td>Examples</td><td>Production Facilities, Financial Resources, etc.</td><td>Trust between Managers & Employees, Scientific Capabilities, Capacity for Innovation, Firm's reputation for how it interacts with Employees, Customers, Suppliers, etc.</td></tr>
<tr><td colspan="3">2. Capabilities: Capabilities are said to exist when the Resources have been effectively integrated to achieve specific task(s). Examples: (a) R&D to provide better Product & Design Quality, (b)Production Facilities being nearer to Demand Locations, (c) Effective Logistics Management to reach Customers, (d) Innovation in Advertising, Promotion, Publicity, (e) Efficient and quality- oriented Customer Service, (f) Using Technology for betterment of operations, etc.

3. Competitive Advantage: (a) Unique Sets of Resources and the</td></tr>
</table>

	way they are handled by the Firm using its Capabilities, lead to Competitive Advantages leading to wealth creation, (b) To successfully use their resources over time, Firms should constantly innovate on how to manage resources to increase the value for customers, (c) If a Firm has superior Resources & Capabilities than its Competitors, and adopts a strategy that utilizes these Resources and Capabilities effectively, it can obtain Competitive Advantage.
Steps in VCA	1. Internal Cost Analysis, 2. Internal Differentiation Analysis, 3. Vertical Linkage Analysis
Internal Cost Analysis - Steps	1. Identify the Firm's value-creating processes. 2. Determine portion of Total cost of product/ service attributable to each value creating unit. 3. Identify the cost drivers of each process 4. Identify the links between processes. 5. Evaluate the opportunities for achieving relative cost advantage.
Internal Differentiation Analysis	1. Identify the Customers' value-creating processes. 2. Evaluate Differentiation Strategies for enhancing Customer Value. 3. Determine the best sustainable differentiation strategies.
Vertical Linkage	1. Identify the Industry's Value Chain and assign Costs, Revenues & Assets to value-creating processes.

Analysis-Steps	*2. Diagnose the Cost Drivers for each value-creating process.* *3. Evaluate the opportunities for sustainable competitive advantage.*	
Industry Structure Analysis	*1. Bargaining Power of Buyers* *2. Bargaining Power of Suppliers* *3. Threat of Substitute Products or Services*	*4. Threat of New Entrants* *5. Intensity of Competition*
Core Competencies Analysis	*1. Created by superior integration of technological, physical & human resources.* *2. Represent distinctive skills, intangible, invisible, intellectual assets & cultural capabilities.* *3. Core Competence-based diversification reduces risk & investment, & increases the opportunities for transferring learning & best practice across business units.* *4. Core Competence is identified by - Leverage Test, Value Enhancement Test, Imitability Test.* *5. Steps in VCA approach for competitive advantage includes the following -* *(a) Validate core competencies in current businesses.* *(b) Export or leverage Core Competencies to the Value Chains of other existing businesses.* *(c) Use Core Competencies to reconfigure the Value Chains of*	

	existing businesses. (d) Use Core Competencies to create new Value Chains.	
Segmentation Analysis - Steps	1. Identify segmentation variables and categories 2. Construct a Segmentation Matrix 3. Analyse Segment Attractiveness 4. Identify Key Success Factors for each segment 5. Analyse attractiveness of Broad versus Narrow Segment Scope	
Limitations of VGA	1. Non-availability of data, 2. Identification of Stages, 3. Ascertainment of Costs, Revenues & Assets,	4. Identification of Cost Drivers, 5. Resistance from Employees, 6. Science Vs. Art
Role of Mgmt Accountant in VC A	**Concepts:** 1. Need for Education, training & awareness, 2. Exploring for information, 3. Creativity, 4. System Design, 5. Cooperation. Mgmt Accountant shall also - (a) collaborate with Engineering, Production, Marketing, Distribution and Service Professionals, (b) focus on the Strengths, Weaknesses, Opportunities and Threats identified in the Value Chain Analysis Results, (c) enhance the Firm's Value on a sustainable basis.	

VGA Vs. Traditional Accounting Systems	Tradnl Mgmt A/cing	Value Chain Analysis
	1. Internal Focus 2. Seeks cost reduction in "Value Added" process. 3. Use of Single Cost Driver 4. Application at overall Firm level 5. Seeks adhoc cost reduction solutions for Cost Containment. 6. Focus on control of manufacturing costs. 7. Internal Information is used. 8. Inter-Firm Comparison partially present.	External Focus Seeks "Competitive Advantage" based on entire set of linked activities. Multiple Structural & Executional Drivers used. Unique Cost Drivers for each value activity. Cost Containment as a function of the cost drivers regulating each value activity. Focus on gaining competitive advantage. External and internal information are used. Focus on full-fledged benchmarking.

One Day Revision Notes - Quality Management

Concept	Points to Remember	
Steps in TQM	1. Identification of Customers / Customer Groups. 2. Identification of Customer Expectations. 3. Identification of Customer decision-making requirements and product utilities. 4. Identification of perceived problems in decision-making process and product utilities. 5. Comparison with other organisations and Benchmarking. 6. Customer Feedback. 7. Identification of improvement opportunities. 8. Quality Improvement Process through - (a) Determination of new strategies, (b) Elimination of deficiencies, and (c) Identifying solutions.	
TQM Principles	1. Clear exposition of benefits of project. 2. Total Employee involvement (TEI). 3. Process measurement.	6. Understanding the needs of the whole process. 7. Use of graphical & pictorial techniques to achieve understanding.

	4. Involvement of all customers & contributors. 5. Elimination of irrelevant data.	8. Establishment of performance specifications & targets. 9. Use of errors to prompt continuous improvement. 10. Use of statistics to tell people how they are doing.
TQM Benefits	1. Increased awareness of Quality Culture in the Firm, 2. Commitment to Continuous Improvement, 3. Greater focus on Customer Satisfaction,	4. Greater emphasis on Team Work, and 5. Better Control over processes, operations and costs.
6 C's	1. Commitment, 2. Culture,	3. Continuous improvement, 4. Co-operation,	5. Customer Focus, 6. Control
4 P's	1. People, 2. Process, 3. Problem, 4. Preparation		
Cost of Quality	1. Costs of Quality Conformance / Compliance (also called Cost of Good Quality, Price of Conformance, Cost of Control, etc.): This is classified as - (a) Prevention Costs, (b) Appraisal Costs, 2. Costs of Quality Non-Conformance / Non-Compliance (or Cost of Poor Quality, Price of Non-Conformance, Cost of Failure to Control, etc.): classified as - (a) Internal Failure Costs, (b) External Failure Costs.	

	Note: *1. COQ = P-A-F (Prevention-Appraisal-Failure) Model.* ***Steps:*** *(a) Obtain information on the number of failures / defects / quality-related problems, (b) Identify appropriate assumptions to process the quality- related data effectively, (c) Analyse the impact of various resolutions that the available to resolve the quality-related problems, (d) Allocate the resources to address quality-related problems, (e) Evaluate the impact of whether the resolutions have sufficiently tackled the occurrence of quality-related problems.* *2. COQ can be computed - (a) in terms of effort (i.e. hours / days), (b) in terms of money (i.e. amounts), (c) in terms of percentage (% of Total Costs, % of Revenue, etc.)* *3. Optimal COQ is the level at which the total of all Costs above are minimized. The relationships of COQ are as under- (a) A small increase in Prevention Costs can lead to higher savings in Appraisal Costs, (b) A small increase in Internal Failure Costs, can lead to reduction / avoidance of many External Failure Costs, (c) A small increase in Cost of Compliance, leads to higher savings in Costs of Non-Compliance.*
Approaches to Cost of Quality (COQ)	*1.* ***Higher Quality means Higher Cost:*** *(a) Quality can be achieved only by spending more towards Materials, Labour, and Expenses, (b) Additional Benefits obtained from such improved quality, may not always compensate for the Additional Costs incurred by the Entity. So, Quality Costs need not be incurred.*

	2. ***Cost Savings > Cost of improving Quality:*** *(a) Improving or maintaining quality, leads to higher cost, (b) However, such higher costs can be offset by Cost Savings in less rework, less scrap, less defectives, etc. So, it is preferable to incur COQ.* 3. ***Quality Costs are Relevant Costs for being in business:*** *(a) Quality Costs are those incurred in excess of those that would have been incurred if the product was produced / service was rendered exactly right the first time, (b) COQ comprises both Direct Costs (tangible, accounting costs), and also Indirect Costs (loss of Market Share, Opportunity Costs, etc. that are intangible and non-a/cing costs).*
Measure - ment of COQ	1. *Many items of COQ are difficult to identify by formal cost measurement systems. Hence, COQ is viewed as similar to an* ***Iceberg,*** *i.e. the portion above the water level is only visible, but the portion below water level, and its size cannot be visualized.* 2. *The* ***visible items*** *of COQ (i.e.* ***Iceberg above the water level)*** *include - (a) Waste, Scrap, (b) Rejects, (c) Customer Returns and Product Recalls, (d) Rework, (e) Inspection and Testing, etc.*
	3. ***Invisible COQ Items*** *(i.e.* ***Iceberg below the water level):*** *(a) Development Cost of Failed Product, (b) Excessive IT System Costs, (c) Excessive Employee Fluctuations, (d) Excessive Field Service Expenses, (e) Time Delays, (f) Planning Delays, (g) Unused Capacity, (h) Excessive Overtime, (i) Incorrect Paperwork /Sales Order, (j) Pricing or Billing Errors, (k) Time with Dissatisfied Customer, (1) Excessive Inventory related*

<table>
<tr><td></td><td>Costs, etc.</td></tr>
<tr><td>Conti.

Process

Improvement,

etc.</td><td>1. Continuous Process Improvement believes in encouraging every member of the Firm to continuously strive to efficiently serve their customers, who may either be external or internal.

2. The challenge is in promoting activities that continuously modify processes, procedures, task, content and process interfaces to achieve complete customer satisfaction, to reduce costs & to increase product quality.

3. PDCA Cycle = Shewhart Cycle or Deming Wheel = Plan - Do - Check - Action.

4. Six Sigma Accuracy means the process is 99.999998% accurate. In other words, the process will/can produce only 0.002 defects per million. In quality practice, Six-Sigma means 3.4 parts per million.</td></tr>
<tr><td>Control in TQM</td><td>1. Process Definition, 2. Database, 4. Improved decisions, 5. 3. Quality Manual, Improvement, Control and Continuous and 6. Use of Control Reports</td></tr>
<tr><td>Environmental Costs vs COQ</td><td>The categories of Environment Costs from a COQ Report Perspective is as under -
<table>
<tr><td>Type</td><td>Prevention Costs</td><td>Appraisal Costs</td><td>Internal Failure Costs</td><td>External Failure Costs</td></tr>
<tr><td>Meaning</td><td>preventing</td><td>Activities to examine</td><td>Activities that have</td><td>Activities performed</td></tr>
</table></td></tr>
</table>

		adverse environmental impacts	whether products, process and activities, comply with environmental standards, policies and laws.	been produced but not discharged into the environment.	after discharging waste into the environment.
	Examples	· Investment in Pollution Control Equipment · Defining Environmental Policies · Environment-friendly R & D · Site & Feasibility Studies	· Monitoring, testing, inspection and reporting · Improved systems to prevent fines/ penalties · Regulatory Compliances · Contamination Tests · Audit of Environmental Activities	· Recycling Scrap · Disposing off toxic material · Back-end costs,	· Cleaning up contaminated Soil. · Restoring Land to its natural state.

 

One Day Revision Notes - Theory of Constraints (TOC)

Concept	Points to Remember
Theory of Constraints	1. TA Concept assumes that a Firm has a given set of resources available (e.g. Buildings, Capital Equipments and Labour Force). The Operating Costs of these resources (i.e. Labour and Overheads) are considered as Fixed Cost. 2. Using these resources, purchased materials and components should be processed to generate Sales Revenue. The Firm has to maximise Throughput Contribution (i.e. Sales Less Direct Materials), subject to-(a) Production Capacity (Supply Constraints), & (b) Sales Demand (Demand Constraints).
Key Measures	(1) Throughput, (2) Investment, and (3) Operating Expenses.
Bottleneck	Activity within the Firm where the demand for that resource is more than its capacity to supply.
Constraint	Situational Factor, which makes the achievement of objectives/throughput more difficult than normal.
Key Steps in Bottlenecks	1. Identify System Bottlenecks, i.e. highest TA Ratio = $\frac{\text{Resource Requirement}}{\text{Resource Availability}} \times 100$. 2. Describe how to exploit the bottlenecks 3. Sub-ordinate decisions

 

	4. Bottleneck Removal or Improvement - (a) Remove the bottleneck, (b) Increase bottleneck efficiency and capacity.
Performance Evaluation	1. Throughput Accounting (TA) Ratio, i.e. $\frac{\text{Throughput(i.e.Contribution) per minute}}{\text{Factory Cost per minute}}$. **Note:** If TA Ratio > 1, the product is profitable, since Contribution exceeds Operating Costs. 2. (a) Throughput to Labour Cost = $\frac{\text{Throughput}}{\text{Labour Cost}}$ (b) Throughput to Material Cost = $\frac{\text{Throughput}}{\text{Material Cost}}$

One Day Revision Notes - Lean System

(New Chapter Introduced)

Concept	Points to Remember
Lean System	1. **Meaning:** Lean System is an organized method for **waste minimization** without sacrificing productivity within a Manufacturing System. 2. **Features:** (a) optimizing work flow through strategic operational procedures, (b) minimizing waste, (c) eliminate "Non-Value Adding" (NVA) steps & perform only "Value Adding" (VA) steps, (d) adaptability in the Production System, (e) shift from batch and queue to product-aligned pull production, (f) different types of operations conducted adjacent to each other in a continuous flow.

Principles / Objectives of Lean System	*1. Perfect first-time quality* *2. Waste Minimization* *3. Continuous Improvement* *4. Flexibility / Adaptability* *5. Synchronous Manufacturing* *6. Zero Waiting Time* *7. Zero Inventory*	*8. Zero Defects, Zero Breakdowns, Zero Accidents* *9. Pull Processing* *10. Continuous Flow of Production* *11. Process Time Reduction / Optimisation* *12. Quality Product/Service* *13. Optimum Use of Bottleneck Resources* *14. Overall Efficiency and Effectiveness*
Techniques of Lean System	*1. Just-in-Time (JIT), 2. Six Sigma (SS), 3.* ***Kaizen Costing****, 4. 5-S (or) 5S, 5. Total Productive Maintenance (TPM), 6. Cellular Manufacturing/ One-Piece Flow Production Systems*	
Six Sigma	*1.* ***Sigma: Sigma*** *is a statistical term that measures how far a process deviates from perfection. The higher the Sigma Number, the closer the process is to perfection.* *2.* ***Six Sigma:*** *Six-Sigma Accuracy, = Process is 99.99966%accurate, and produces only 3.4 defects per million. This is the structural meaning of Six-Sigma. Six Sigma Concept is based on the fact that it is possible to develop ways of reducing defects by measuring the level of defects in a process and discovering the causes.*	

	3. ***Lean Six Sigma:*** *It is the combination of Lean and Six Sigma, to achieve greater results that had not been achieved if Lean or Six Sigma would have been used individually. It increases the speed and effectiveness of any process within the Entity. By using Lean Six Sigma, Entities will be able to - (a) Maximize Profits, (b) Build Better Teams, (c) Minimize Costs, and (d) Satisfy Customers.*
Features of Six Sigma	*1. Highly disciplined process that helps in developing & delivering near-perfect products and services.* *2. Strives to meet & improve Firm's goals on Quality, Cost, Scheduling, Manpower, New Products, etc.* *3. Based on the concept of probability and normal distribution in statistics.* *4. Seeks to ensure that 99.99966% of products manufactured are defect-free.* *5. Puts the Customer first and uses facts and data to drive better solutions.* *6. Full or Total Business Initiative, not merely a quality initiative.* *7. Seeks to achieve breakthroughs in every area of operation, not merely small marginal improvements.* *8. Philosophy of management commitment, customer focus, process improvement & rule of measurement.* *9. Makes every area of the Firm ready to meet changing needs*

	of customers, markets & technologies.
Advantages of Six Sigma	*1. Improved customer satisfaction, and opportunities to retain customers, 2. Reduction in Cycle Time, 3. Zero Defectives, 4. Significant Cost Savings, 5. Creation of reputation for top performing products or services, 6. Gives a new approach to thinking, planning and executing. It leads to working smarter, not harder, 7. Proactive Management Team, 8. Better Collaboration within the Entity, amongst various Divisions, 9. Goal for Perfection.*
Limitations of Six Sigma	*1. Focus on specific type of process only, 2. Focus on quality only, not Output Quantity, 3. does not work well with intangible results, 4. requires substantial infrastructure investment, 5. complicated for some tasks, 6. Standards need not be met by all products, 7. real time barriers.*
Kaizen Costing	*1. Ongoing continuous improvement program that focusses on waste reduction in the production process, thereby further lowering costs below the initial targets specified during design phase.* *2. Small but significant cost reductions achieved during implementation, due to workers' involvement.* *3. Kaizen Costing is intended to repeat many of the Value Engineering steps, continuously and constantly refining the*

	process, thereby eliminating out extra costs at each stage.
Kaizen Costing Principles	*1. It seeks to achieve gradual improvements in the existing situation, at an acceptable cost.* *2. It involves setting standards & then improving them, to achieve long-term sustainable improvements.* *3. It recognises that Improvements are endless, i.e. no limit to the level of improvements that are possible.* *4. It encourages collective decision-making, and application of knowledge.* *5. It covers all areas of business, and is not restricted to Shop-Floor only.* *6. It focusses on eliminating wastes, improving systems and improving productivity.*
5S	***1. Concept:*** *5S is the name of a workplace organization method that uses a list of five Japanese words to explain how a work space should be organized for efficiency & effectiveness by identifying & storing the items used, maintaining the area and items, and sustaining the new order.* *2.* ***Phases:*** *(a) SORT (Seiri), (b) SET IN ORDER (Seiton), (c) SHINE (Seiso), (d) STANDARDISE (Seiketsu), (e) SUSTAIN (Shitsuke).*

 

<table>
<tr><td>Total Productive Maintenance</td><td>1. Meaning: Total Productive Maintenance (TPM) is a system of maintaining and improving the integrity of production and quality systems. TPM is achieved through the Machines, Equipment, Processes, and Employees that add to the value in a Business Entity.

2. Pillars: Pillar-1: Autonomous Maintenance, Pillar-2: Focussed Improvement, Pillar-3: Planned Maintenance, Pillar-4: Early Management, Pillar-5: Quality Maintenance, Pillar-6: Education & Training, Pillar-7: Office TPM, Pillar-8: Safety, Health, and Environment.

3. Implementing TPM: (a) Preparation, (b) Introduction, (c) Implementation, (d) Institutionalization.</td></tr>
<tr><td>Performance Measurement in TPM using OEE</td><td>OEE = "Overall Equipment Effectiveness". OEE % = Performance × Availability × Quality.
<table>
<tr><td>Concept</td><td>Performance</td><td>Availability</td><td>Quality</td></tr>
<tr><td>Formula</td><td>$\frac{\text{Standard Time}}{\text{Actual Time}}$</td><td>$\frac{\text{Actual Time worked}}{\text{Time Available}}$</td><td>$\frac{\text{Output Qtty Accepted}}{\text{Output Qtty Produced}}$</td></tr>
<tr><td>Ideal Measure</td><td>> 95%</td><td>> 90%</td><td>> 99%</td></tr>
</table></td></tr>
<tr><td>Business Process</td><td>A Business Process consists of a collection of activities that are linked together in a co-ordinated and sequential manner to achieve specified goals and objectives. For example, in a broad sense, Material Handling Management may be taken to include - (a) Scheduling Production, (b) Storing Materials, (c) Processing Purchase Orders, (d) Inspecting Materials, and (e)</td></tr>
</table>

 

	Paying Suppliers.
Business Process Re-Engineering (BPR)	*1. **Meaning:** BPR is the fundamental re-thinking and radical re-design of business processes to achieve dramatic improvements in critical contemporary measures of performance, such as cost, quality, service, and speed.* *2. **Concept:** Porter's Value Chain is commonly used in BPR as a technique to identify and analyse processes that are of strategic significance to the Entity.* *3. **Key Components:** (a) Fundamental Re-thinking, (b) Radical Re-design, (c) Dramatic Improvement, (d) Process Orientation.* *4. **Purpose:** To improve key Business Processes in a Firm by focussing on - (a) Simplification, (b) Cost Reduction, (c) Improved Quality, (d) Enhanced Customer Satisfaction, (e) Operational Excellence, (f) Competitive Advantage, i.e. "**how** to compete".* *5. **Stages:** (a) Process Identification, (b) Process Rationalisation, (c) Process Re-Design, (d) Process Re-Assembly.* *6. **Principles:** (a) Focus on "Outcomes" and not on tasks, (b) Single Point Data Capture, (c) Link the persons performing the process, to the results expected, (d) Integrate Information with Work Process, (e) Centralise Activities to achieve economies, (f) Line Parallel Activities instead of integrating their results, (g) Decision Point is where the work is performed, but build controls.*

One Day Revision Notes - Just in Time (JIT) – Important for Practical Questions for May 2018 – Refer PM Q. No.31, 32, 33 & 34 – Old Course PM Chapter 1)

Concept	Points to Remember
JIT-Concept	1. **JIT:** (a) A System whose objective is to produce or procure products or components as they are **required** by a Customer or for use, rather than for Stock, (b) A **Pull System** which responds to demand, in contrast to a Push System, in which stocks acts as buffers between the different elements of the system such as purchasing, production and sales. 2. **JIT Production:** Production System which is driven by demand for Finished Products, whereby each component on a Production Line is produced **only when needed** for the next stage. 3. **JIT Purchasing:** Purchasing System in which Material Purchases are contracted such that the **receipt** and **usage** of material, **coincide,** to the maximum possible extent.
JIT in WIP	1. Affects Cost - (a) Piling up of WIP Inventory, (b) Delayed Tracing of Defectives 2. Ways to Resolve - (a) Kanban Card, (b) Working Cells

JIT — Objectives	1. Waste Reduction, 2. Time Reduction, 3. Elimination of NVA activities,	4. Zero Inventory, 5. Zero Defects, 6. Zero Break-downs,	7. Economical Batch Sizes, 8. Product Quality, 9. Timely delivery to Customer.
JIT - Benefits	1. Reduction in Inventory Levels, 2. Reduction in Wastage of Time,	3. Reduction in Scrap Rates, 4. Reduction in OH Costs	
JIT - Time Reduction	1. Storage Time, 2. Inspection Time,	3. Handling Time, 4. Queue Time	
JIT Effect on OH	1. Thorough reduction in Overhead Costs, 2. Shift between Overhead Costs and Direct Costs, due to introduction of Machine Cells, and 3. Scientific Allocation of common Overheads based on Machine Cells and Cost Drivers.		
JIT Other Effects	1. Lower Inventories and Associated Costs. 2. Better Product Pricing (Customers' Needs and Competitors' Effect) 3. Reduced Capital Requirements.		
Performance Measurement	1. Inventory Turnover,	4. Scrap, 5. Cost of Quality,	6. Customer Service, 7. Ideas generated

Criteria	*2. Setup Time Reduction,* *3. Customer Complaints,*		
Backflushing (Q. No.34 of PM – Old Course Chapter 1)	*1. **Meaning:** Backflush Costing is a costing system that omits recording some or all of the journal entries relating to the cycle from purchase of Direct Materials to the sale of Finished Goods. The Journal Entries for the subsequent stages use normal or standard costs to work backward to flush out the costs in the cycle for which Journal Entries were omitted earlier.* *2. **Issues:** (a) Production Reporting, (b) Scrap Reporting, (c) Lot Tracing, (d) Inventory Accuracy.*