



"One of the most important keys to Success is having the discipline to do what you know, you should do, even when you don't feel like doing it."



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## (1) On Taxation

### (a) Constitutional Positions of different Tax Laws in India

Name of Tax/ duty	Source of power	Power with	Tax imposed on -	Applicable to
<b>Article 246(1) – Union List I of Seventh Schedule</b>				
Income Tax Act, 1961	Entry No. 82	Central Govt.	Tax on Income other than agriculture income	Person
Wealth Tax Act, 1957	Entry No. 82	Central Govt.	Tax on Net wealth	Individual, HUF or Company
Central Excise Act, 1944, Central Excise Tariff Act, 1985 and other central laws dealing with specific	Entry No. 84	Central Govt.	Manufacture or Production in India of all goods - except those falling in Entry 51 of State list - but including medicinal	(a)Manufacturer or who collect the duty on behalf of manufacturer, (b)Warehouse keeper in case of warehouse goods, (c)Purchaser in case of

goods			and toilet preparations containing alcohol or opium, Indian hemp and other narcotic drugs and narcotics.	molasses use for manufacture of other commodity, (d)Job Worker in case of job work.
Custom Act, 1962 and Customs Tariff Act, 1975	Entry No. 83	Central Govt.	On goods Imported into or Exported from, India	Importer or Exporter of goods
Service Tax – Finance Act, 1944	Entry No. 97	Central Govt.	Taxes on services	Service provider or receiver in case of reverse charge
Service Tax – Finance Act, 1944	Entry No. 92C	Central Govt.	Taxes on services	This entry has not yet come into force
*Central Sales Tax (CST), 1956	Entry No. 92A	Central Govt.	Inter-state sale or purchase of goods	Dealer

### Article 246(3) - State List II of Seventh Schedule

State	Entry	State	Manufacture or Production of-	Manufacturer
Excise Laws	No. 51	Govt.	(a) alcoholic liquors for human consumption; (b) opium, Indian hemp and other narcotic drugs and narcotics	
Agriculture Tax	Entry No. 46	State Govt.	Agriculture Income	Person
Entry Tax or Octroi	Entry No. 52	State Govt.	Entry of goods into a local area for consumption	Company who sale the goods or Bidder's
Professional, Trade, calling and Employment Tax	Entry No. 59	State Govt.	Professional, Trade, callings and Employment	Professional, Trade, callings and Employment

**\*Note:** Central sales Tax is levied by Central Government, it is administered by State Government and tax collected in such State is retained by that State Government itself. The tax collected is retained by the State in which it is collected. CST Act is administered by Sales Tax authority of each State.



**(b) Surcharge on Income-tax for the assessment years 2014-15 is as follows:**

	If total income is up to ₹ 1 crore	If total income is in the range of ₹1 crore - ₹10 crore	If total income is above ₹ 10 crore
<b>Surcharge (as a percentage of income-tax)</b>			
Individual/ HUF/ AOP/ BOI/ artificial juridical person	Nil	10%	10%
Firm	Nil	10%	10%
Co-operative society	Nil	10%	10%
Local authority	Nil	10%	10%
Domestic company	Nil	5%	10%
Foreign company	Nil	2%	5%

**Surcharge:** The amount of income-tax computed in accordance with the above rates and special rates specified in section 111A (relating to short term capital gain on shares sold through recognised stock exchange) and section 112 (relating to long-term capital gain) shall be increased by a surcharge at the rate as prescribed above of such income-tax in case of a person having a total income exceeding ₹1 crore.

**Marginal relief:**

- The total amount payable as income-tax and surcharge on total income exceeding ₹1 crore (i.e. income exceeding ₹ 1 crore);
- shall not exceed the total amount payable as income-tax on a total income of ₹1 crore by more than the amount of income that exceeds ₹1 crore.

**Cess:** 'Education Cess' @2%, and 'Secondary and Higher Education Cess (SHEC)' @1% on income tax (inclusive of surcharge, if applicable) shall be chargeable.

In case of assessee whose income has increased marginally over ₹1 crore, the burden of his tax liability would be more in comparison to the income over ₹ 1 crore because of surcharge.

To give relief to such assessee, the concept of marginal relief is enacted and extended/offered, which is to be made operative as follows:

**Alternative Method 1:**

**(Amount in ₹)**

Total Income	Tax on total income excluding surcharge	Surcharge @10% of tax	Income tax and surcharge under normal computation	Tax under marginal relief computation [Tax on ₹ 1 crore plus Tax @100% of income over ₹ 1 crore Tax on ₹ 1 crore = 1 crore x 30% = 30 lakh]	Normal tax or tax under marginal relief, whichever is lower (Lower of D or E)	Tax including surcharge, EC and SHEC
A	B	C	D = B+C	E	F	G

1,01,00,000	30,30,000	1,51,500	<b>31,81,500</b>	= 30,00,000 + 1,00,000 <b>=31,00,000</b>	31,00,000	<b>31,93,000</b>
1,02,00,000	30,60,000	1,53,000	<b>32,13,000</b>	= 30,00,000 + 2,00,000 <b>= 32,00,000</b>	32,00,000	<b>32,96,000</b>
1,02,10,000	30,63,000	1,53,150	<b>32,16,150</b>	= 30,00,000 + 2,10,000 <b>=32,10,000</b>	32,10,000	<b>33,06,300</b>
1,02,15,000	30,64,500	1,53,225	<b>32,17,725</b>	= 30,00,000 + 2,15,000 <b>= 32,15,000</b>	32,15,000	<b>33,11,450</b>
1,02,18,000	30,65,400	1,53,270	<b>32,18,670</b>	= 30,00,000 + 2,18,000 <b>=32,18,000</b>	32,18,000	<b>33,14,540</b>
1,02,19,000	30,65,700	1,53,285	<b>32,18,985</b>	= 30,00,000 + 2,19,000 <b>= 32,19,000</b>	32,18,985 (No marginal relief)	<b>33,15,560</b>
1,02,20,000	30,66,000	1,53,300	<b>32,19,300</b>	= 30,00,000 + 2,20,000 <b>= 32,20,000</b>	32,19,300 (No marginal relief)	<b>33,15,880</b>

**Note:-**

**No marginal relief is available in case of Education Cess & SHEC.**

**Alternative Method 2:**

**(Amount in ₹)**

Total Income	Tax on total income excluding surcharge	Surcharge @10% of tax	Surcharge due to marginal relief [Additional income - Tax on additional income]	Tax including surcharge but excluding EC and SHEC	Tax including surcharge, EC and SHEC
A	B	C	D	E	F
1,01,00,000	30,30,000	1,51,500	<b>1,00,000 - 30,000 = 70,000</b>	= 30,30,000 + 70,000 <b>= 31,00,000</b>	31,93,000
1,02,00,000	30,60,000	1,53,000	<b>2,00,000 - 60,000 = 1,40,000</b>	= 30,60,000 + 1,40,000 <b>= 32,00,000</b>	32,96,000
1,02,10,000	30,63,000	1,53,150	<b>2,10,000 - 63,000 = 1,47,000</b>	= 30,63,000 + 1,47,000 <b>= 32,10,000</b>	33,06,300
1,02,15,000	30,64,500	1,53,225	<b>2,15,000 - 64,500 = 1,50,500</b>	= 30,64,500 + 1,50,500 <b>= 32,15,000</b>	33,11,450
1,02,18,000	30,65,400	1,53,270	<b>2,18,000 - 65,400 = 1,52,600</b>	= 30,65,400 + 1,52,600 <b>=32,18,000</b>	33,14,540
1,02,19,000	30,65,700	1,53,285	<b>2,19,000 - 65,700 = 1,53,300</b> (No marginal relief)	= 30,65,700 + 1,53,285 <b>=32,18,985</b>	33,15,560
1,02,20,000	30,66,000	1,53,300	<b>2,20,000 - 66,000 = 1,54,000</b> (No marginal relief)	= 30,66,000 + 1,53,300 <b>= 32,19,300</b>	33,15,880

**Note:-**

**(i) Additional income means the income in excess of ₹ 1 crore**

**(ii) No marginal relief is available in case of Education Cess and SHEC.**



## (c) Assessment procedure under Income Tax Act, 1961 & Wealth Tax Act, 1957

Activity	Income Tax Act, 1961	Wealth Tax Act, 1957
Return	Section 139(1)	Section 14
Return of Loss	Section 139(3)	---
Belated return	Section 139(4)	Section 15
Revised return	Section 139(5)	Section 15
Return by whom to be signed	Section 140	Section 15A
Self Assessment	Section 140A	Section 15B
Scrutiny Assessment	Section 143(3)	Section 16(2) & (3)
Best Judgment Assessment	Section 144	Section 16(5)
Escaping Assessment	Section 147	Section 17
Time limit for completion of assessment	Section 153	Section 17A
Appeal	Section 246A	Section 23
Appeal to Appellate Tribunal	Section 253(1) & (2)	Section 24 & 26
Revision	Section 263 & 264	Section 25
Appeal to High Court/ National Tax Tribunal	Section 260A	Section 27A
Appeal to supreme Court	Section 261	Section 29
Refunds	Section 240	Section 34A

## (d) Tax Liability on Transfer of House Property

Rabi transferred a house property to his wife Mina on 01.04.2013. The house property was let out during the year yielding a rental income of ₹20,000 per month. Let us ascertain the tax implication.

### Solution:

Unlike Indian Contract Act, 1872, Income Tax Act, 1961 as well as Wealth Tax Act, 1957 do not consider love and affection as an adequate consideration.

According to Section 64(1)(iv) of Income Tax Act, 1961, if any asset (other than house property) transferred to spouse without adequate consideration (other than in connection with an agreement to live apart), any income derived from that asset shall be deemed to be the income of the taxpayer who has transferred the asset.

According to Section 4(1)(a)(i) of Wealth Tax Act, 1957, any asset transferred to spouse without adequate consideration (other than in connection with an agreement to live apart), shall be included in the net wealth of the transferor as "Deemed Asset".

In the given case, as the asset is a house property, the income derived from that house property will not be clubbed to the income of Rabi. However, the house property shall be considered as "Deemed Asset" u/s 4(1)(a)(i) of the Wealth Tax Act, 1957 and included in the net wealth of Rabi.

## (e) Tax consequence - Assets used for business purpose later used for Scientific purpose and vice-versa

### Example 1:

MRT Ltd. purchased a machine as on 01.04.2011 at a cost of ₹8,00,000. The machine was used up to 31.03.2013 for normal production. From 01.04.2013, it is being using for scientific research purpose.

(i) State the tax consequences of the above as per Income Tax Act, 1961.

(ii) What if, the above machinery was first used for scientific purpose and then transferred to the production department? Consider the same date as above.

### Solution:

#### (i) Machinery transferred to Scientific Research purpose

Particulars	Amount (₹)
Cost	8,00,000
Less: Depreciation @ 15% for the year 2011-12	1,20,000
W. D. V. as on 01.04.2012	6,80,000
Less: Depreciation @ 15% for the year 2012-13	1,02,000
W. D. V. as on 01.04.2013	5,78,000

In the years 2011-12 & 2012-13, the depreciation of ₹1,20,000 and ₹1,02,000 respectively would be allowed as deduction u/s 32.

In the year 2013-14, the 100% of the W. D. V. of the machine i.e. ₹5,78,000 will be allowed as deduction u/s 35.

#### (ii) Machinery transferred from Scientific Research purpose

In this case, the whole cost of the machine i.e. ₹8,00,000 would be allowed as deduction u/s 35 at the year of purchase i.e. 2011-12.

As full cost of the machine has already been deducted in the year of purchase, the W. D. V. of the machine so transferred as on 01.04.2013 will be Nil. Hence, the company will not get any depreciation benefit u/s 32 further for the machine.

## (2) Computation of Depreciation as per Companies Act, 1956 and Income Tax Act, 1961 (Ignore Deferred Tax Asset/Liability)

A second hand machine was purchased on 1.4.2010 for ₹4,00,000. Overhauling and installation expenses for the same machine amounted to ₹1,00,000. Another machine was purchased for ₹2,00,000 on 4.10.2010.

On 01.10.2012, the machine installed on 1.4.2010 was sold for ₹2,50,000. Dismantling charges for the machine sold on 1.10.2012 were ₹10,000. On the same date another machine was purchased for ₹ 8,00,000 and was commissioned on 31.12.2012. Under the existing practice, the company provides depreciation @ 10% p.a. on original cost.

Show Statement of Depreciation under Companies Act, 1956 and Income Tax Act, 1961.



**Solution:**

## Statement of Depreciation under Companies Act, 1956

Date	Particulars	M-1 (₹)	M-2 (₹)	M-3 (₹)	Total Dep. (₹)
1.4.10	Purchase Cost (including Overhauling)	5,00,000			
4.10.10	Purchase		2,00,000		
31.03.11	Dep@10%	50,000	10,000		60,000
1.4.11	W.D.V	4,50,000	1,90,000		
31.03.12	Dep@10%	50,000	20,000		70,000
1.4.12	W.D.V	4,00,000	1,70,000		
1.10.12	Purchase			8,00,000	
	Dep. @10%	25,000			
	W.D.V	3,75,000			
	Add: Dismantling Charge	10,000			
		3,85,000			
	Sold for	2,50,000			
	Loss on sale	<u>1,35,000</u>			
31.03.13	Dep. @ 10%		20,000	40,000	85,000
1.4.13	W.D.V.		1,50,000	7,60,000	

## Statement of Depreciation under Income Tax Act, 1961

Particulars	Amount (₹)	Total Dep. (₹)
W.D.V. as on 01.04.2010	Nil	
Add: Purchase :		
Put to use 180 days or more 5,00,000		
Put to use less than 180 days 2,00,000	7,00,000	
	7,00,000	
Less: Depreciation-		
At full rate (5,00,000 × 15%) 75,000		
At half rate (2,00,000 × 15% × 50%) 15,000	90,000	90,000
W.D.V. as on 01.04.2011	6,10,000	
Less: Depreciation-		
At full rate (6,10,000 × 15%) 91,500	91,500	91,500
W.D.V. as on 01.04.2012	5,18,500	
Less: Net Consideration Received from Sale of 2nd hand machine	2,40,000	
	2,78,500	
Add: Purchase-		
Put to use 180 days or more 8,00,000		
Put to use less than 180 days Nil	8,00,000	
	10,78,500	
Less: Depreciation-		
At full rate (10,78,500 × 15%) 1,61,775	1,61,775	1,61,775
W.D.V. as on 01.04.2013	9,16,725	

### (3) Estimation of Cash Flow (As per AS-3)

From the following information, calculate the Net Cash Flow from Operating Activities of a Non-Banking Finance Company under indirect method for the year ended on 31<sup>st</sup> March, 2013

Profit and Loss A/c for the year ended on 31<sup>st</sup> March, 2013

Dr.		Cr.	
Particulars	Amount (₹)	Particulars	Amount (₹)
To, Loss on sale of Land	40,000	By, Interest Income	8,20,000
To, Int. on Debenture	18,000	By, Interest on Investment	15,000
To, Depreciation	1,20,000	By, Dividend Recd.	18,000
To, General Reserve	25,000	By, Profit on sale of Investment	20,000

To, Tax Provision	30,000	By, Refund of Tax	8,000
To, Proposed Dividend	1,60,000	By, Insurance Claim Recd for Earthquake	90,000
To, Interim Dividend	70,000		
To, Prov. for diminution from Investment	20,000		
To, Net Profit	4,88,000		
	9,71,000		9,71,000

#### Additional Information:

Particulars	31.03.12	31.03.13
Debtors	25,000	1,00,000
Creditors	15,000	50,000
Stock	1,40,000	1,00,000
Provision for Tax	50,000	60,000

**Solution:**

**Calculation of Net Cash Flow from Operating Activities (Under Indirect Method) of..... for the year ended on 31.3.2013**

Particulars	Amount (₹)	Amount (₹)
Net Profit for the year		4,88,000
<b>Add: Adjustment for non – operating items debited to Profit &amp; Loss A/c:</b>		
Loss on sale of Land	40,000	
Int. on debenture	18,000	
Depreciation	1,20,000	
General Reserve	25,000	
Tax Provision	30,000	
Proposed Dividend	1,60,000	
Interim Dividend	70,000	
Provision for diminution from Investment	20,000	4,83,000
		9,71,000
<b>Less: Adjustment for Non- Current and Non – Operating items credited to Profit &amp; Loss A/c:</b>		
Interest on Investment	15,000	
Dividend Received	18,000	
Profit on Sale of Investment	20,000	
Refund of Tax	8,000	
Insurance Claim for Earthquake	90,000	1,51,000
<b>Operating Profit before Working Capital Change</b>		<b>8,20,000</b>
<b>Add: Increase in Operating Current Liabilities:</b>		
Creditors (50,000 – 15,000)	35,000	
<b>Decrease in Operating Current Assets</b>		
Stock (1,40,000 – 1,00,000)	40,000	75,000
		<b>8,95,000</b>
<b>Less: Increase in Operating Current Assets:</b>		
Debtors (1,00,000 – 25,000)	75,000	75,000
<b>Cash Generated From Operation</b>		<b>8,20,000</b>
<b>Less: Income Tax paid (W.n-1)</b>		<b>20,000</b>
<b>Net Cash flow from Operating Activities before Extraordinary item</b>		<b>8,00,000</b>
<b>Add: Extraordinary Income:</b>		
Insurance Claim for Earthquake		90,000
<b>Net Cash Flow from Operating Activities</b>		<b>8,90,000</b>

#### Working Notes: (1) Provision for Tax Account

Particulars	₹	Particulars	₹
To Bank		By, Balance b/f	50,000
- Tax a paid for the year(bal .fig)	20,000		
		By, Profit & Loss A/c - Tax Provided for the year	30,000
To, Balance c/f	60,000		
	80,000		80,000

2. In case of Finance Company, Interest Income of ₹8,20,000 is considered as income from normal business activity. Hence, it is considered as Operating Income. Otherwise it will be shown in the cash flow under Non–Operating Income.



## (4) AS – 12 - Government Grants:

### Illustration on refund of Government Grants:

Utpadan Ltd. is a manufacturing company. It purchased a fixed asset for ₹50 lakhs. Sampark Ltd. received ₹ 20 lakhs as Government grant. Useful life of the asset is 4 years and residual value is ₹10 lakhs. The grant becomes refundable in 3<sup>rd</sup> year to the extent of ₹15 lakhs. Show the journal entries under different alternative assuming straight line method of depreciation.

**Solution:**

#### (a) (i) Non - Depreciable Fixed Asset (₹ in lakhs)

Particulars	Dr.	Cr.
Fixed Asset/Capital Reserve A/c Dr.	15	
To, Bank A/c		15

#### (ii) If grant was credited to deferred Government Grant A/c (₹ in lakhs)

Particulars	Dr.	Cr.
Deferred Govt. Grant A/c Dr.	10	
Profit and Loss A/c Dr.	5	
To, Bank A/c		15
(Balance left in deferred Government Grant A/c was ₹10 lakhs because ₹5 lakhs p.a. was recognized in Profit & Loss A/c in last 2 years)		

#### (b)

#### (i) Depreciable fixed assets – If grant is credited to fixed asset at the time of receipt (₹ in lakhs)

Particulars	Dr.	Cr.
Fixed Asset A/c Dr.	15	
To, Bank A/c		15
(The balance of Fixed Asset A/c after 2 years depreciation was ₹20 lakhs and now it will become ₹35 assuming same residual value and remaining life of 2 years. The depreciation will be [(₹35 lakhs - ₹10 lakhs) ÷ 2 years] i.e. ₹12.5 lakhs in remaining 2 years)		

#### (ii) If grant is credited to deferred grant or income at the time of receipt (₹ in lakhs)

Particulars	Dr.	Cr.
Deferred Govt. Grant A/c Dr.	10	
Profit and Loss A/c Dr.	5	
To, Bank A/c		15
(Deferred Grant Account will become NIL. The fixed asset will continue to be depreciated at ₹10 lakhs per annum)		

## (5) Forfeiture and reissue of shares

X Ltd. issued shares of ₹ 100 each at a premium of ₹ 15 per share, payable ₹ 35 on application (including ₹ 10 as premium); ₹ 45 on allotment (including balance of premium) and the balance in a call. One shareholder, who applied for 200 shares was allotted 150 shares, failed to pay allotment. His shares were forfeited and 100 of those were reissued at ₹ 95, ₹ 100 called up and paid up.

**Solution:**

[ Tutorial Note: Here are some important workings for your ready reference. This will help you in understanding and representing the facts and figures in clear terms. Moreover, these would enable to enrich your logical understanding of the topic/provisions of law.]

#### (a) Break-up of amount per share

	Towards Capital (₹)	Towards Premium (₹)
On Application (35)	25	10
On Allotment (40)	35	5
On Call (Balancing figure)	40	
	100	15

**(b) Calls-in-arrear:** The shareholder has failed to pay the amount due on allotment, which is calculated as follows:

No. of shares applied for 200 shares	
Application money received [ 200 x ₹35]	₹7,000
Less: Application money adjusted on the basis of number of shares allotted [150 x ₹ 35]	₹5,250
<b>Excess application money to be adjusted with allotment</b>	<b>₹1,750</b>
Allotment money due [150 shares x ₹40]	
	₹6,000
Less: Excess application money now adjusted with allotment	₹1,750
<b>Calls-in- Arrear (on allotment)</b>	<b>₹4,250</b>

It may be noted that the shares were forfeited immediately after allotment, hence for the purpose of forfeiture, the called up value per share i.e. ₹ 60 is to be considered. However, at the time of reissue the shares were reissued as fully paid up. Hence, discount on reissue of forfeited shares were estimated on the basis of full value per share.

#### Journal Entries: (without narration)

(1) On forfeiture of shares	
Share Capital A/c Dr [150 x 60]	9,000
Securities Premium A/c Dr [ 150 x 5]	750
To Calls in Arrear A/c	
To Share Forfeiture A/c	4,250
(2) For reissue of forfeited shares	
Bank A/c Dr [100 x ₹95]	9,500
Share Forfeiture A/c Dr [100 x ₹ 5]	500
To Share Capital A/c [100 x ₹ 100]	10,000
(3) For Transfer to Capital Reserve	
Share Forfeiture A/c Dr	3,167
To Capital Reserve	3,167
Calculation of amount for transfer to Capital Reserve	
Amount received on forfeiture of 150 shares = ₹ 5,500	
Therefore, proportionate amount received on 100 forfeited shares, which would be reissued = [₹ 5,500 x 100/150] = 3,667	
Less: Discount on reissue of 100 forfeited shares = 500	
<b>Transfer to Capital Reserve = 3,167</b>	

#### How to ascertain the amount of share forfeiture ₹ 5,500?

Amount received from the shareholder at the time of application [200 shares x ₹35]	7,000
Less : Amount towards premium on number of shares allotted [ 150 shares x ₹10]	1,500
If premium is included in application, then it shall have to be adjusted/reduced only on the basis of number of shares allotted]	
Amount of share forfeiture	5,500

**It must be noted that this amount is never a balancing figure, rather this is a derived figure which can be ascertained.**





**(6) On Economics for Managerial Decision-making (Paper 10, Section C under Syllabus 2012)**

**Example 1:**

An auto driver can operate for ₹ 600 per week which is fixed.

The variable cost of taking passengers is given by  $q^3 - 12q^2$ .

(a) What is TC? (b) What is AFC? (c) What is AVC? (d) What is AC? (e) What is MC? (f) For what is AC minimum? (g) For what q is TVC minimum? (h) For what q is MC minimum?

**Solution:**

$$(a) TC = TFC + TVC = 600 + q^3 - 12q^2$$

$$(b) AFC = \frac{TFC}{q} = \frac{600}{q}$$

$$(c) AVC = \frac{TVC}{q} = \frac{q^3 - 12q^2}{q} = q^2 - 12q$$

$$(d) AC = AFC + AVC = \frac{600}{q} + q^2 - 12q$$

$$(e) MC = \frac{d}{dq}(TVC) = 3q^2 - 24q$$

$$(f) AC \text{ is minimum if } \frac{d}{dq}(AC) = 0 \Rightarrow -\frac{600}{q^2} + 2q - 12 = 0$$

$$\Rightarrow q = 9.3$$

$\therefore$  acceptable solution is  $q = 9$ .

$$(g) TVC \text{ is minimum if } \frac{d}{dq}(TVC) = 0 \Rightarrow 3q^2 - 24q = 0$$

$$\Rightarrow q = 8$$

$$(h) MC = 3q^2 - 24q \text{ (from e)}$$

$$MC \text{ is minimum if } \frac{d}{dq}(MC) = 0 \Rightarrow 6q - 24 = 0$$

$$\Rightarrow q = 4$$

**Note:** For (f), (g) & (h) the 2<sup>nd</sup> conditions are satisfied.

**Example 2:**

If  $AVC = ₹12$ ,  $TFC = ₹30,000$ , and selling is ₹18. Find BEP.

**Solution:**

$$\text{Quantity on BEP (qb)} = \frac{TFC}{P - AVC} = \frac{30,000}{18 - 12} = 5,000 \text{ units}$$

**Example 3:**

A producer sells saress in a competitive market during the festive season: Where  $TC = 1600 + 300q - 40q^2 + 2q^3$

At what minimum price will the firm continue production?

**Solution:**

We know  $TC = TFC + TVC$

$$\Rightarrow TVC = 300q - 40q^2 + 2q^3, \\ TFC = 6000$$

$$\text{Now } AVC = \frac{TVC}{q} = 300 - 40q + 2q^2$$

A firm operates if  $P \geq \min AVC$ .

Now for min AVC, we must have

$$\frac{d}{dq}(AVC) = 0 \Rightarrow -40 + 4q = 0 \Rightarrow q = 10.$$

$$\frac{d^2}{dq^2}(AVC) = 4 > 0$$

$$\therefore \text{ at } q = 10, AVC = 300 - 40(10) + 2(10)^2 = 100$$

$\therefore$  If price falls below 100, the firm shuts down.

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Students/Readers are requested to do send your views/  
queries/observations/request for academic inputs by  
e-mail to [e.newsletter@icmai.in](mailto:e.newsletter@icmai.in)

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