PRINCIPLES OF MICROECONOMICS

Special Assignment (18.11.2016)

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Section - B

Q)

1)

Pizza consumed (NO.)	Total Benefit (RS.)	marginal Benefit (RS.)
0	0	0
1	25	25
2	45	20
3	60	15
4	70	10
5	75	05
6	75	05

Given, price of each pizza = 15.

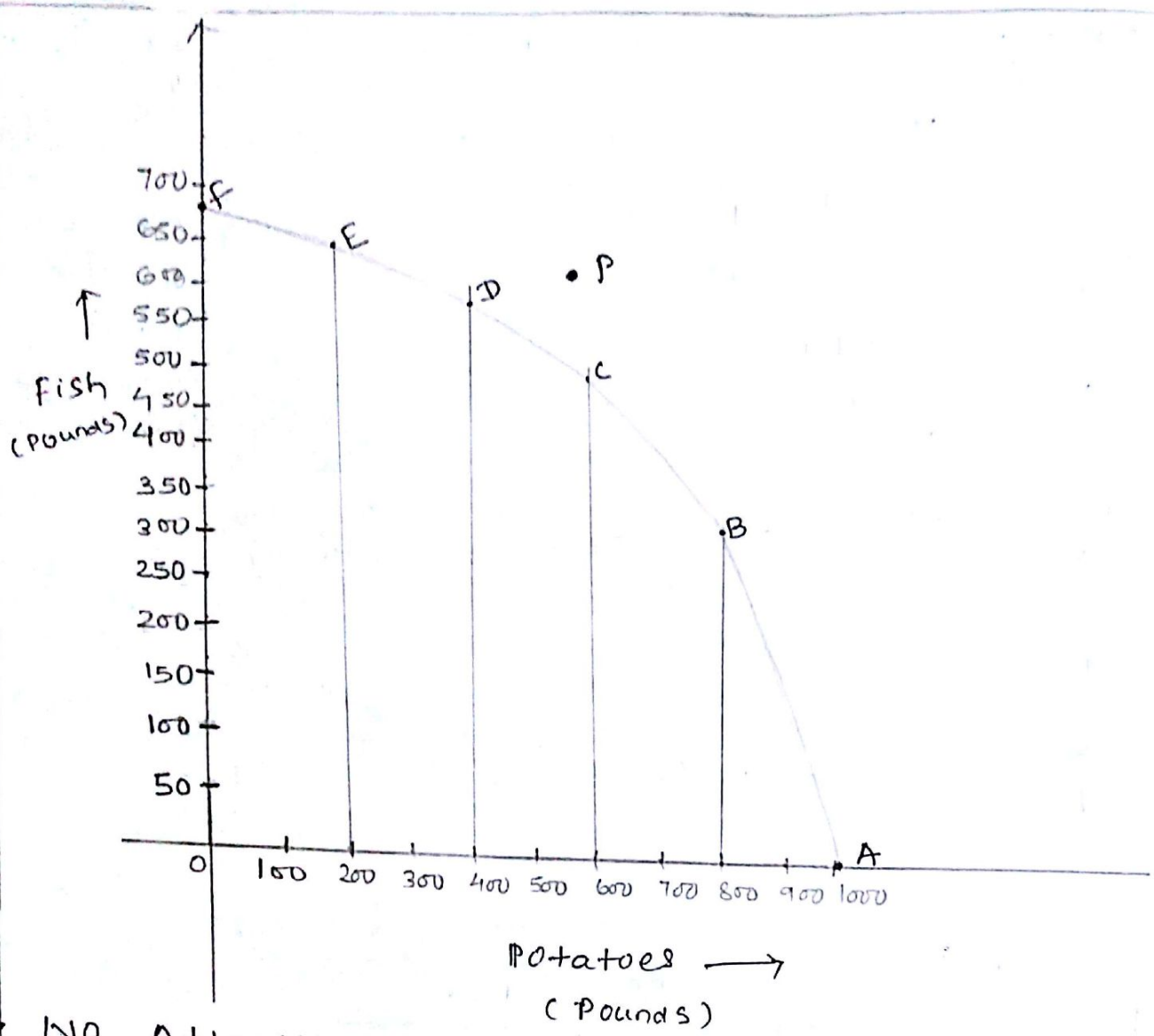
I should consume 3 units of pizza, because Here marginal benefit should be greater than or equal to marginal sacrifise.

It satisfies the 3rd principle "Rational People think at margin."

2)

maximum Annual output options	Quantity of Potatoes (Pounds)	Quantity of fish (Pounds)
A	1000	0
B	800	300
C	600	500
D	400	600
E	200	650
F	0	675

a)

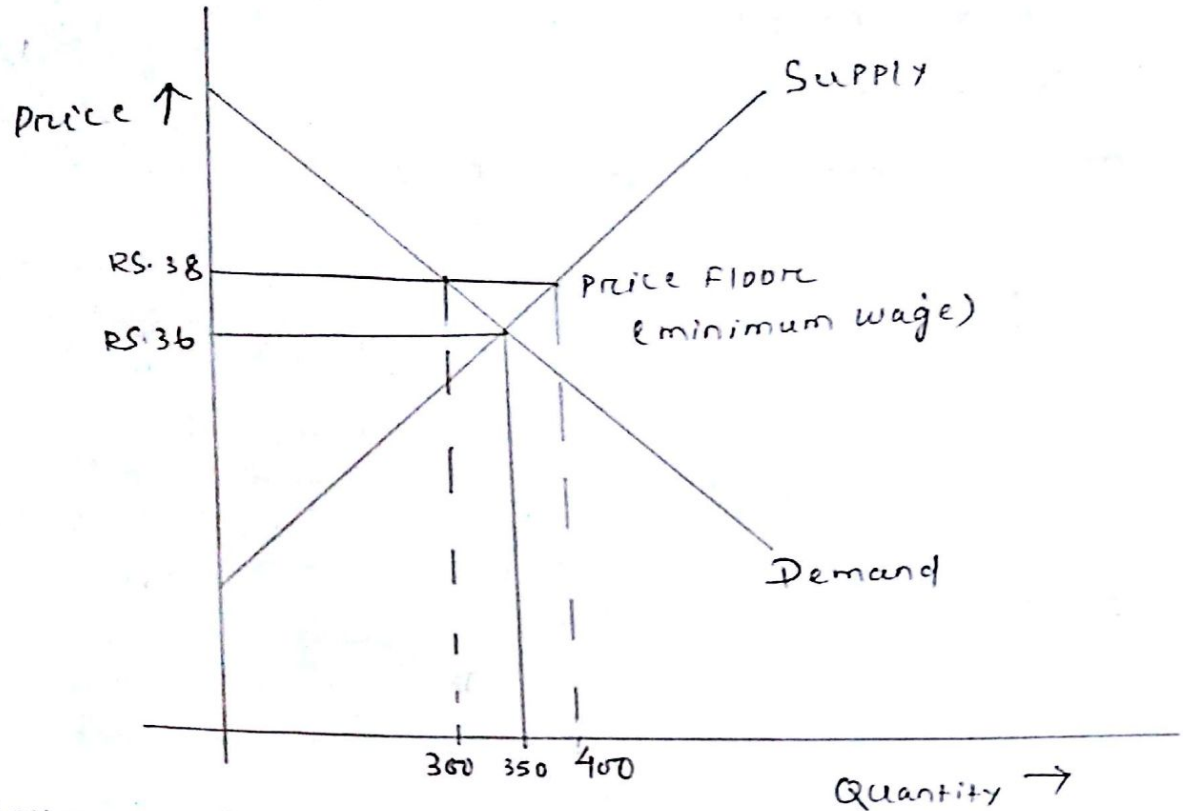


b) NO Atlantis can not produce 500 pounds of fish and 800 pounds of Potatoes because as it lies outside the maximum annual output option or beyond the PPF, that is not feasible due to lack of resource and technology. This Point 'P' is noted on above PPF, right to the PPF.

c) The opportunity cost of increasing the annual output of Potatoes from 600 to 800 is 200 Pounds.

d) Opportunity cost of increasing the annual output of Potatoes from 200 to 400, Pounds is 50 Pounds.

e) The answers to Point c and d are not the same because, when different workers have different skill, resulting in varying opportunity cost. This implies that the slope of the PPF is curved or bow shaped.



Government fixes the minimum wages at RS. 38. This minimum wage is binding on the labour market because the price floor is set above the equilibrium price.

When the govt fixes this minimum wage at RS. 38, there is a surplus in the market i.e 100 labourers.

If the Govt. withdraws this minimum wage at RS. 38, then the market wage rate is 36.

Corresponding demand and supply of labour, (Q^d & Q^s) = 350 labours.

$Q^D = 17000 - 500P$

$Q^S = 3000 + 200P$

At the market clearing price,

$Q^D = Q^S$.

$\Rightarrow 17000 - 500P = 3000 + 200P$

$\Rightarrow 700P = 14000$

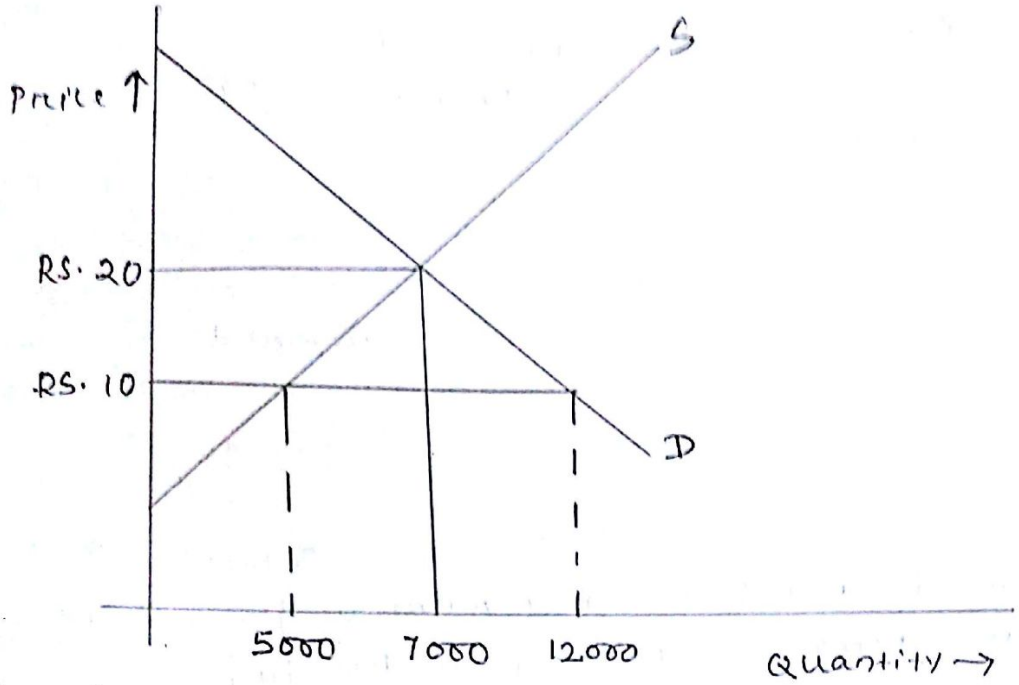
$\Rightarrow P = RS. 20$

Q^D & Q^S at P = RS. 20

$Q^D = 7000 = Q^S$.

a) The market clearing price = RS. 20

b)



In the above figure, the actual price of the product is RS. 10.

So at price = RS. 10

$Q^D = 17000 - 500(10)$

$= 17000 - 5000$

$= 12000$

$Q^S = 3000 + 200(10)$

$= 5000$

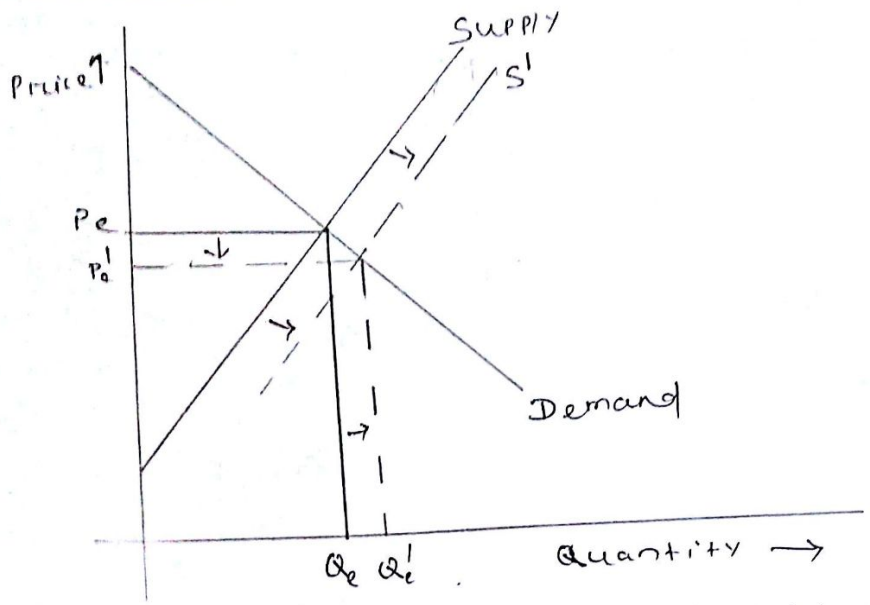
So, if the actual price of the product is RS. 10, then it would lead to shortage in the market.

Shortage $= Q^D - Q^S$

$= 12000 - 5000$

$= 7000$

c)



A new variety of seed is developed which increases the productivity of wheat.

According to the above figure, due to the increase in the productivity of wheat, there is an increase in supply (supply curve shifts to right) due to which the price in the market decreases, consequently the quantity demanded and quantity supplied increases.

5) $Q^d = 450 - 0.5P$

$Q^S = P$

At equilibrium:

$\Rightarrow 450 - 0.5P = P$

$\Rightarrow Q^d = \frac{450}{0.5} - \frac{P}{0.5}$

$Q^d = 900 - 2P$

$Q^S = P$

At equilibrium, $900 - 2P = P$

$\Rightarrow 3P = 900$

$\Rightarrow P = 300$

At P = 300

Q^d = ~~450 − 0.5(300)~~ $900 - 2(P)$.

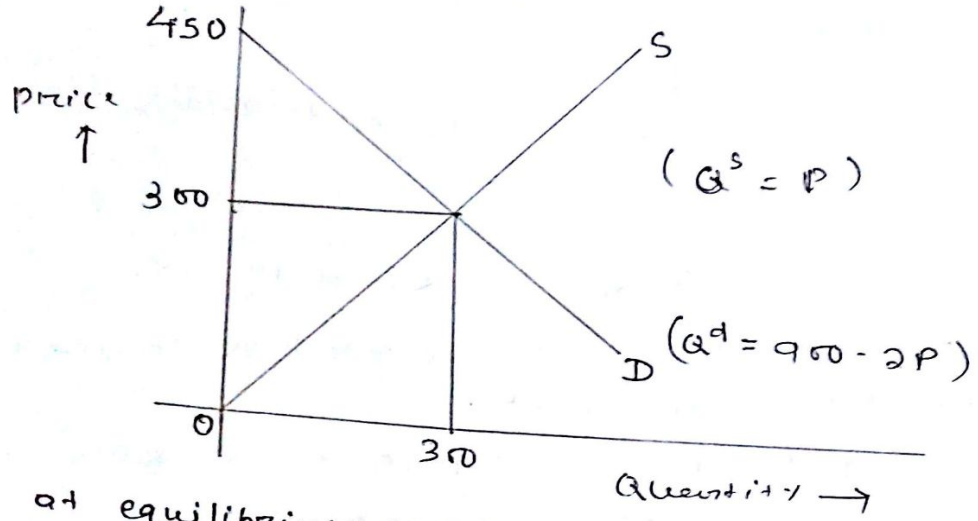
= ~~450 − 150~~ $900 - 2 \times 300 = 900 - 600 = 300$

= 300

a) equilibrium price = Rs. 300

Quantity = 300

b)



CS at equilibrium price =

$= \frac{1}{2} \times 150 \times 300$ (150)

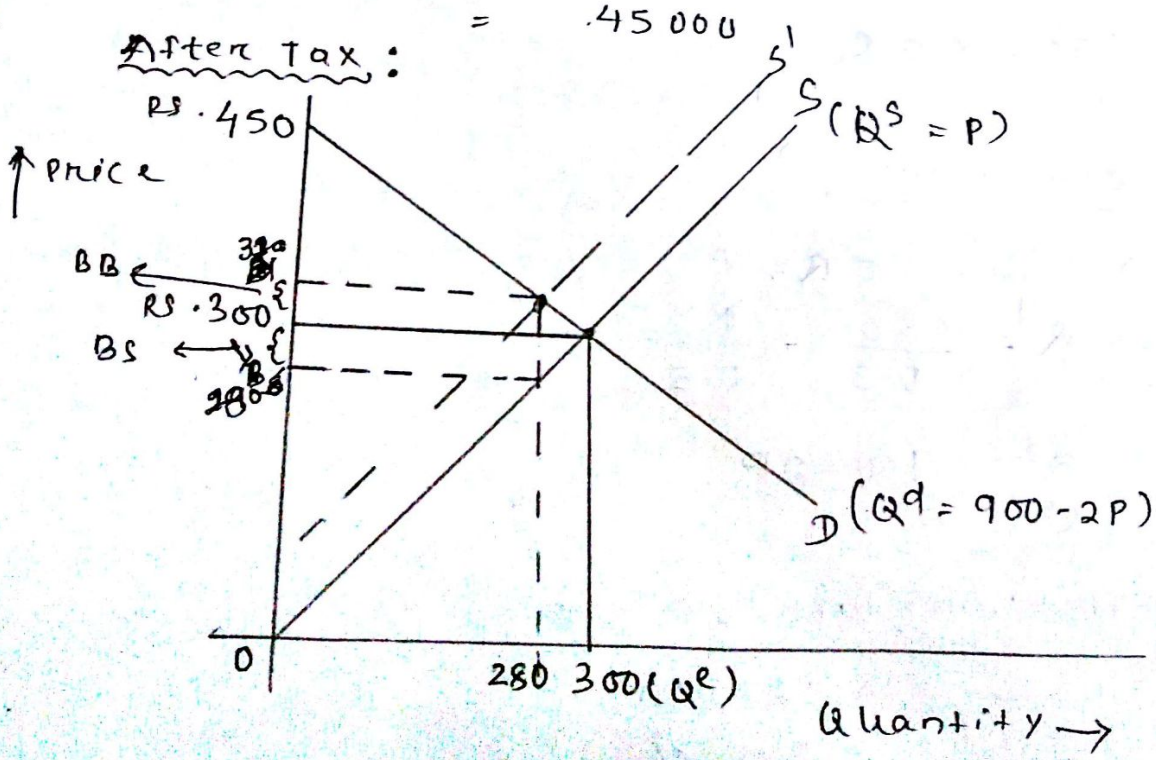
= 22500

PS at equilibrium price:

$= \frac{1}{2} \times 300$ (150) $\times 300$

= 45000

c) After Tax:



$e^d = \frac{dQ^D}{dP} * \frac{P}{Q}$

$= -2 * 1 = -2$

$e^s = \frac{dQ^s}{dP} * \frac{P}{Q}$

$= 1 * 1 = 1$

Burden on Buyer $= \frac{e^s}{e^s + e^d} * \text{Tax size}$

$= \frac{1}{1+2} * 30$

$= \frac{1}{3} * 30$

$= 10$

Burden on Seller $= \frac{e^d}{e^s + e^d} * \text{Tax size}$

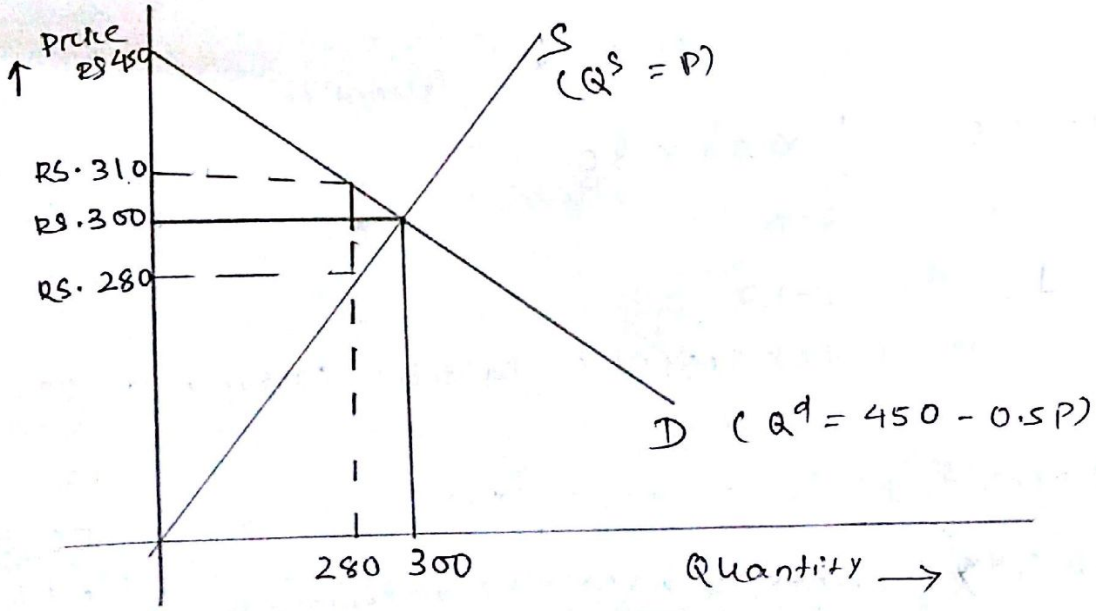
$= \frac{2}{3} * 30$

$= 20$ • Q after tax = 280

Price paid by consumer = 300 + 10 = 310 rupees.

Price received by producer = 300 - 20 = 280

d)



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After tax

$CS = \frac{1}{2} \times 140 \times 280$

$= 19600$

$PS = \frac{1}{2} \times 140 \times 280$

$= 39200$

Tax Paid by Consumer = RS. 10

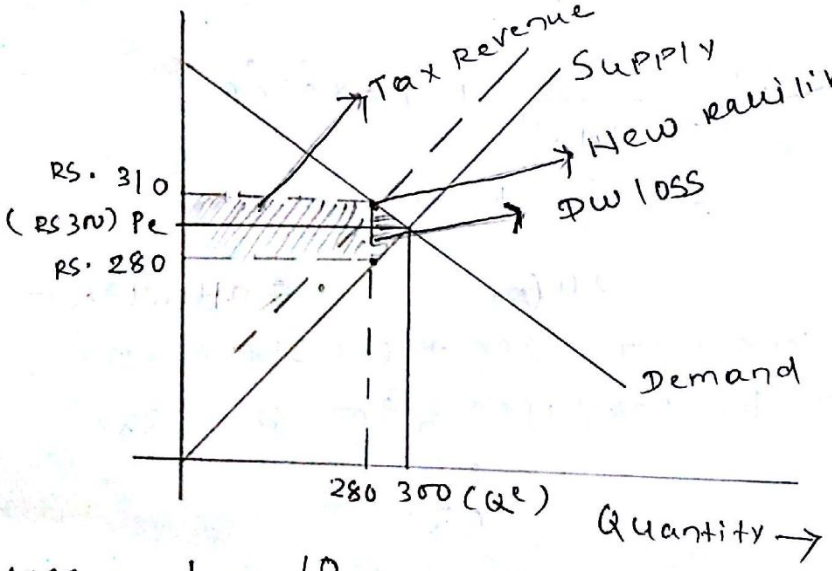
Tax Paid by Producer = RS. 20.

Tax Revenue = Tax size * Q

$= 30 * 280$

$= 8400$

e)



dw loss $= \frac{1}{2} \times 20 \times 30$

$= 300$

f) $e^s = 1$, $e^d = (-)2$

Percentage of tax revenue paid by consumer $= \frac{2800}{8400} \times 100$

$= 33.33\%$

Percentage of tax revenue paid by producer $= \frac{5600}{8400} \times 100$

$= 66.67\%$

When (e^d & e^s), that is elasticity of demand is greater than elasticity of supply. The incidence of tax falls more heavily on the producers than consumer.

6)

$Q^D = 3000 - 2P$

$Q^S = -1000 + 2P$

At equilibrium price,

$Q^D = Q^S$

$\Rightarrow 3000 - 2P = -1000 + 2P$

$\Rightarrow 4000 = 4P$

$\Rightarrow P = 1000$

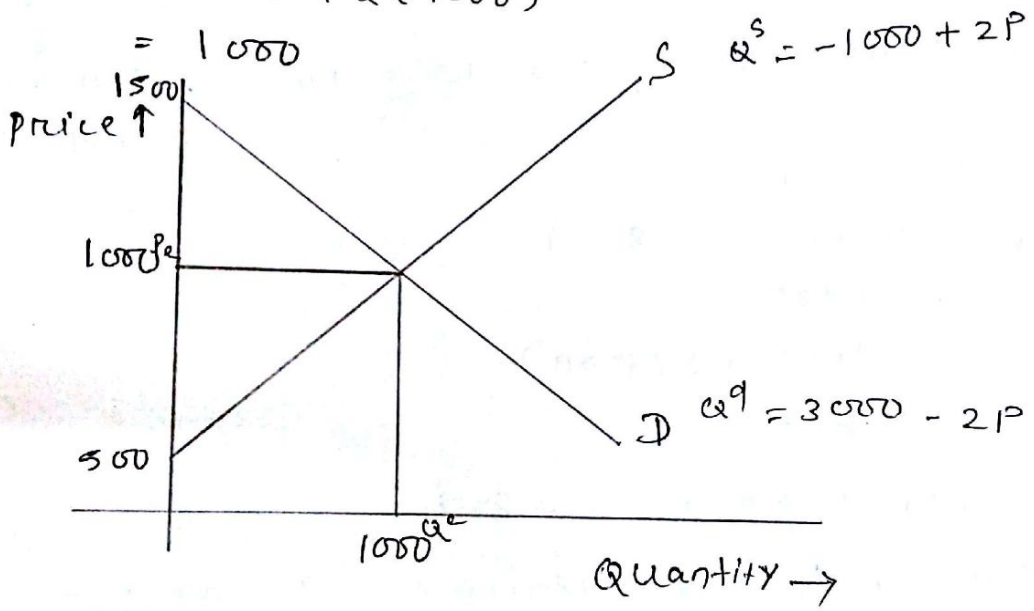
Q^d & Q^S at $P = 1000$

$Q^d = 3000 - 2(1000)$

$= 1000$

$Q^S = -1000 + 2(1000)$

$= 1000$



a) The equilibrium price = RS. 1000

Quantity = 1000

Consumer surplus $= \frac{1}{2} \times 500 \times 500$

$= 250000$

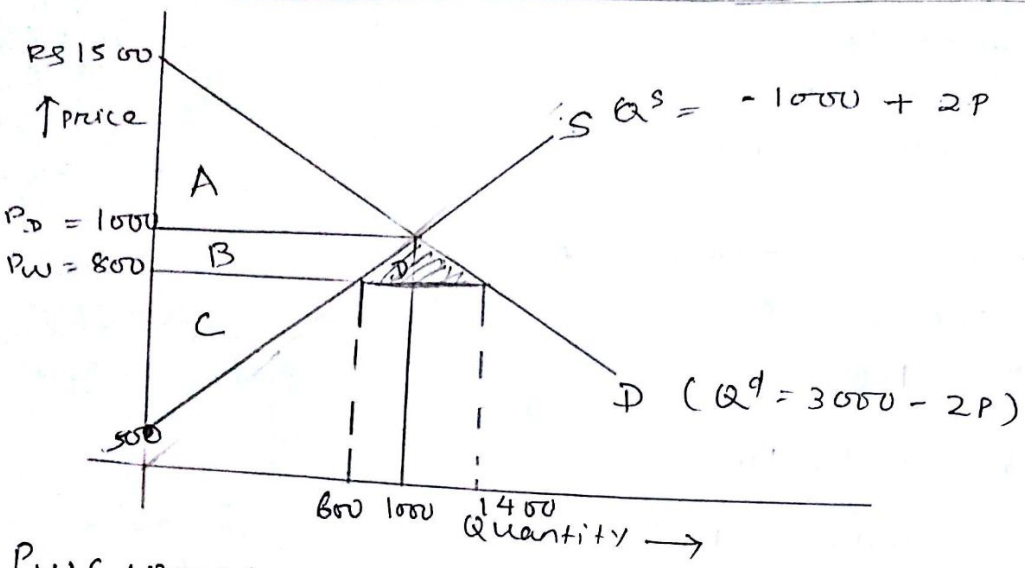
Producer surplus $= \frac{1}{2} \times 500 \times 500$

$= 250000$

Total surplus $= 250000 + 250000$

$= 50.0000$

b)



P_W (World Price) = Rs. 800

P_D = 1000

$P_D > P_W$, so India will import mobile handsets.

At P_W = 800

Q^d = 3000 - 2(800)

= 1400

Q^S = -1000 + 2(800)

= 600

The import amount = 800

According to the principle "Trade makes everyone better off". The country will gain from both trade and the gain from trade = $\frac{1}{2} \times 2\frac{1000}{800} \times 800$

= 80000

c) Welfare effect :

	Before Trade	After Trade	Change
CS	250000	490000	240000
PS	250000	90000	-160000
TS	500000	580000	80000

So gain from trade = 80,000.

Before Trade

CS = 250000

PS = 250000

TS = 500000

After Trade

$CS = \frac{1}{2} \times 700 \times 1400^{700}$

$= 490000$

$PS = \frac{1}{2} \times 300 \times 600^{300}$

$= 90000$

TS = PS + CS

$= 490000 + 90000$

$= 580000$

7(a) Q^d = 1000 boxes per month.

$e_p^d = -1.25$

$e_i = 2.00$

We know :

income elasticity of demand.

$= \frac{\%. \Delta Q^d}{\%. \Delta i} = 2.$

Price elasticity of demand.

$= \frac{\%. \Delta Q^d}{\%. \Delta P} = (-)\ 1.25$

If income increases by 7%.

$$\frac{\%\ \Delta Q^d}{7\%} = 2$$

$$\%\ \Delta Q^d = 14\%$$

If price increases by 10.

$$\frac{\%\ \Delta Q^d}{10\%} = e_p^d$$

$$\%\ \Delta Q^d = (-)12.5\%$$

So, when the income increases. then the expected demand for apple.

$$= \frac{14}{100} \times 1000 + 1000$$

$$= 140 + 1000$$

$$= 1140 \text{ boxes.}$$

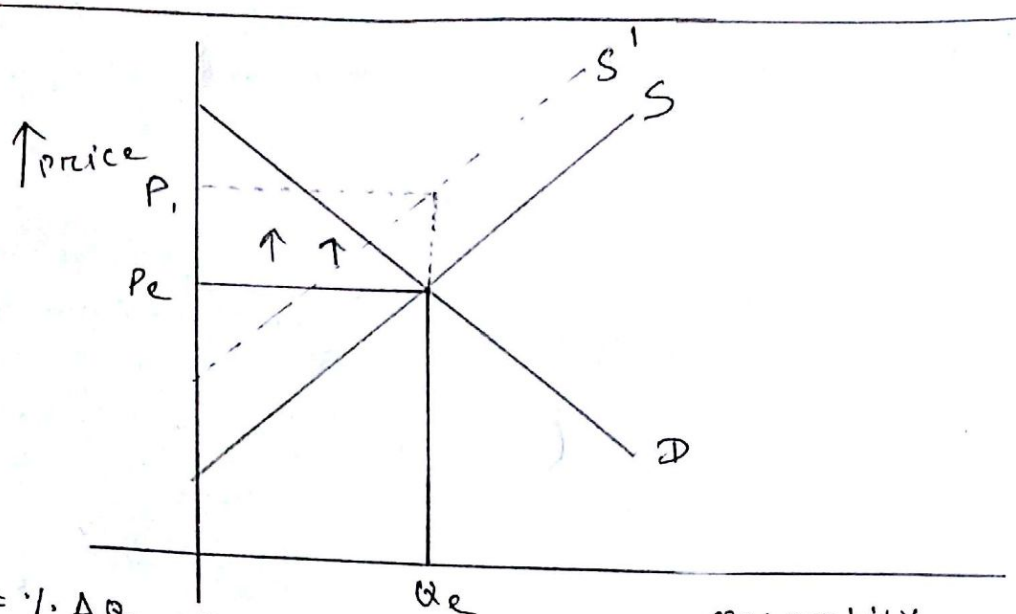
So, when the price increases then the expected demand for apples.

$$= 1000 - \frac{12.5}{100} \times 1000$$

$$= 1000 - 125 = 875 \text{ boxes.}$$

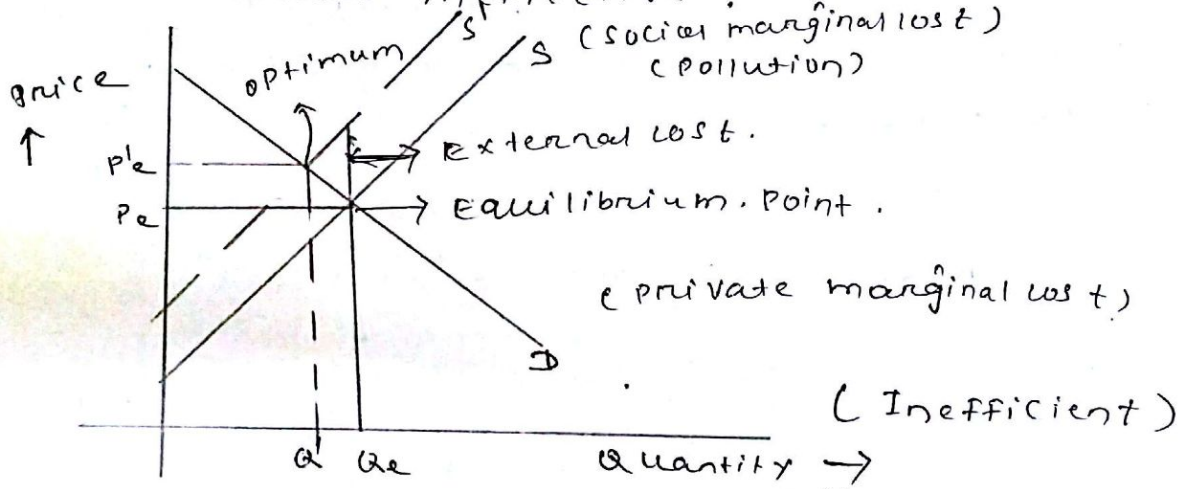
b) If the cross-price elasticity of demand between commodities A and B is negative, the demand curve for B shifts left, if price of A increases because they are complement to each other.

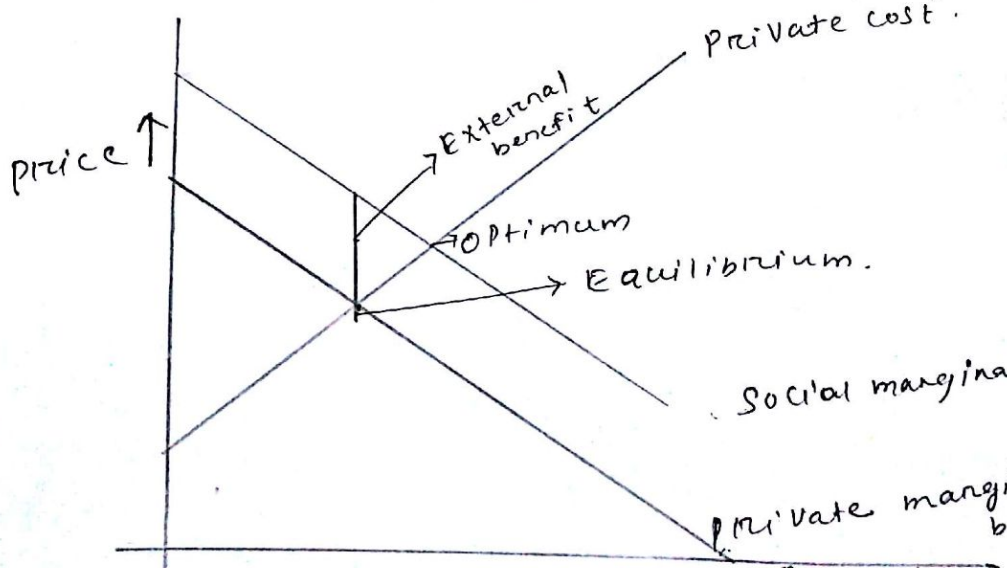
c) If the shifts of the supply curve results no change in quantity demanded of a product.



$e_p^d = \frac{\%\ \Delta Q}{\%\ \Delta P}$ ∴ Here $\Delta P > \Delta Q$ as Price increases and Q remains constant and ∴ e_p^d becomes relatively inelastic.

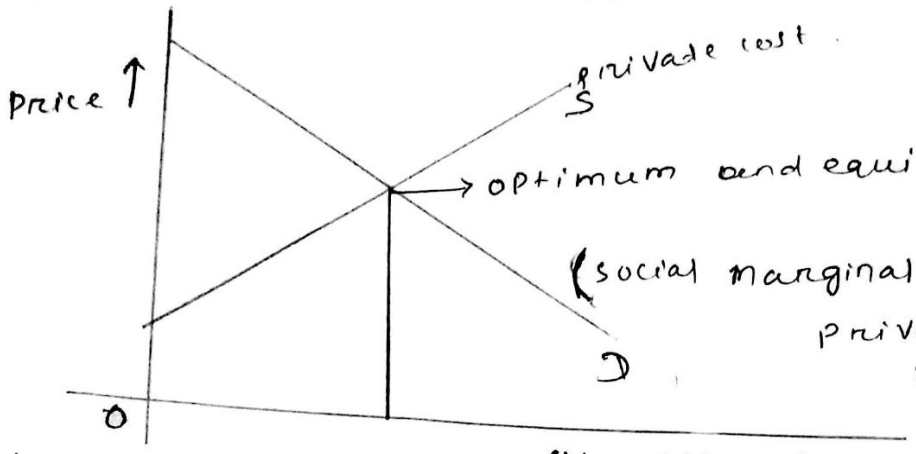
Pollution is a negative externality and it makes the market ineffective.





Learners are willing to learn only for the benefits they reap from directly exchange of new idea

leading to under consumption and market becomes in-efficient.



Subsidy by Govt. in research and development helps learners to learn from the creativity of others.

Here social benefit = Private benefit.

Demand curve after externality and Subsidy coincide.

Qt equilibrium = Qt optimum.

Market becomes efficient.

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