

Q1] # x is produced in competitive market
 \Rightarrow implication: Individual seller is not in a position to change market price of good x .

a) The supply curve will shift leftwards, contraction in supply.

b) Same effect as case 'a'

c) Supply curve will shift rightwards, expansion in supply.

Q2]
$$Q_x^d = 1200 - \frac{1}{2} P_x + \frac{1}{4} P_y - 8 P_z + \frac{1}{10} M$$

a) y is a substitute good as acc to the eqⁿ if P_y increase Q_x^d will also increase

z is a complementary good as $\uparrow P_z$ will $\downarrow Q_x^d$.

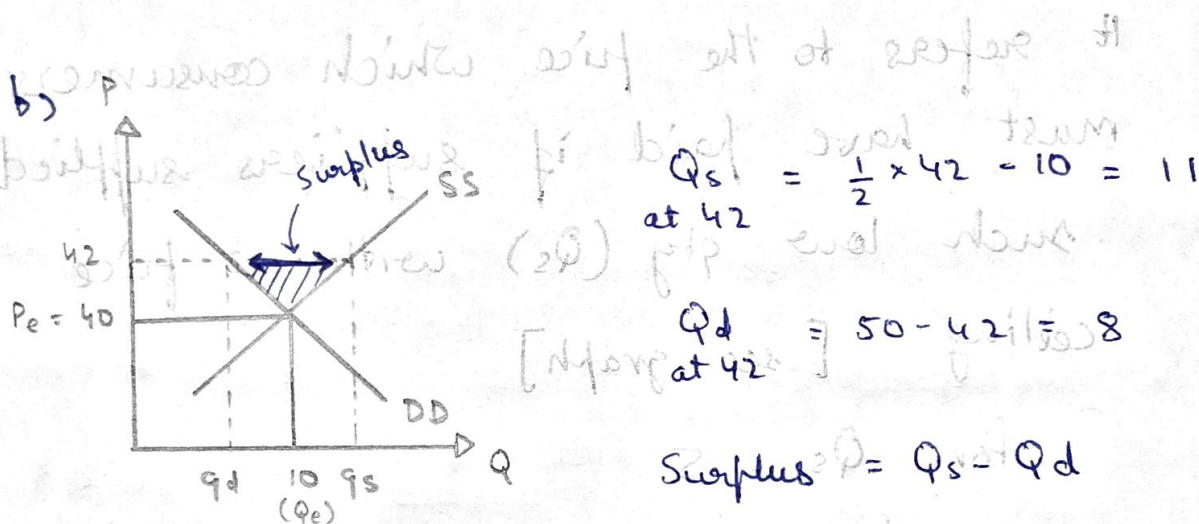
b) x is a Normal good, because if we increase M (Income) in eqⁿ Q_x^d will also increase.

c) $P_x = 4910$ $P_y = 5900$ $P_z = 90$ $M = 55000$
 Putting in eqⁿ
 $Q_x^d = \underline{5000}$

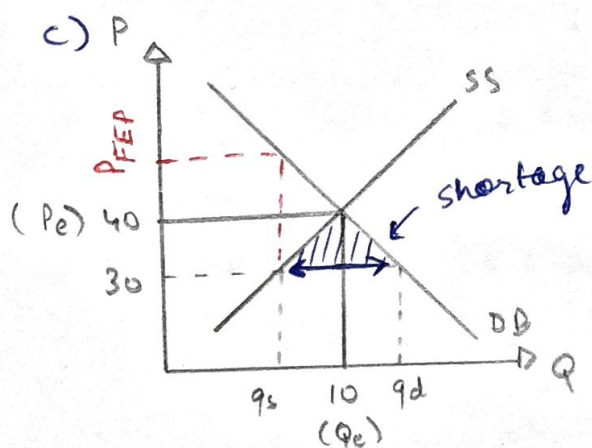
Q3] $Q^d = 50 - P$ $Q^s = \frac{1}{2}P - 10$

a) At equilibrium, $Q^s = Q^d$
 $50 - P = \frac{1}{2}P - 10$

So, $P_e = 40$ $Q_e = 10$



$\underline{21} = 11 - 8 = \underline{3}$



$\underline{15} = 20 - 5 = \underline{15}$

→ Full Economic Price

It refers to the price which consumers must have paid if suppliers supplied such low qty (Q_s) without price ceiling [see graph]

for $Q_s = 5$

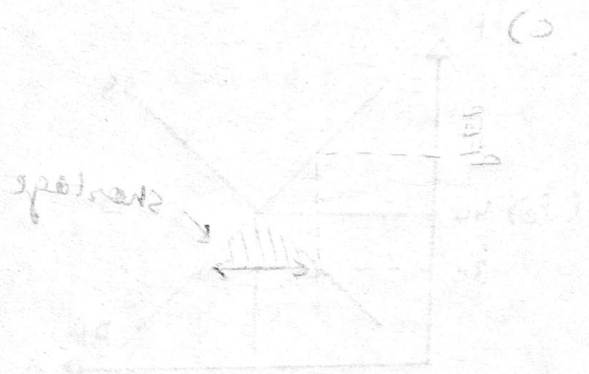
$$P^d = 50 - 5 = \underline{\underline{45}}$$

$$Z = 0.1 - 0.8 \times \frac{1}{5} = 0.04$$

$$0.05 = 0.03 - 0.02 = 0.05$$

$$20 - 60 = -40$$

$$\underline{\underline{21}}$$



~~Economic Price (Price) for low quantity of supply~~
~~Surplus of + Price ceiling~~

Q4]

$$Q^d = 7 - \frac{1}{2} P_x$$

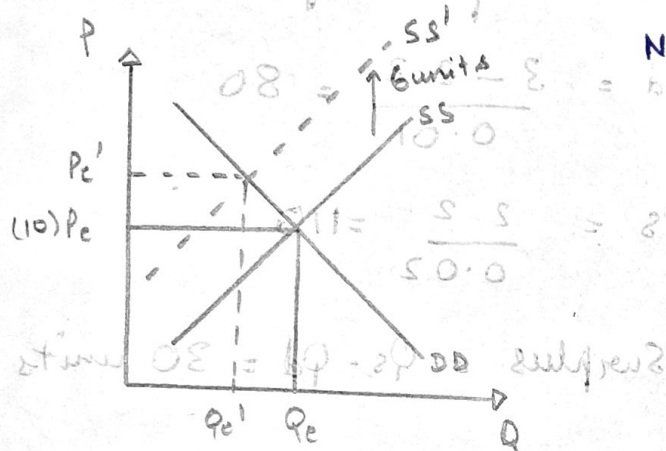
$$Q^s = \frac{1}{4} P_x - \frac{1}{2}$$

(19) a) At Equilibrium $Q^s = Q^d$

$$7 - \frac{1}{2} P_x = \frac{1}{4} P_x - \frac{1}{2}$$

$$\boxed{P_e = 10} \quad \boxed{Q_e = 2}$$

b) If tax is imposed on supplier supply will reduce i.e. upward shift by 6 unit



Now P_x will shift upward by 6 units

$$Q^s = \frac{1}{4} P_x - \frac{1}{2}$$

$$4Q^s = P_x - 2$$

$$P_x = 4Q^s + 2$$

$$P_x' = 4Q^s + 2 + (6)$$

shifting SS curve

$$\text{New, } Q^s = \frac{1}{4} P_x - 2 \quad Q^d = 7 - \frac{1}{2} P_x$$

So, at new eqib

$$\frac{1}{4} P_x - 2 = 7 - \frac{1}{2} P_x$$

$$\boxed{P_e' = 12} \quad \boxed{Q_e' = 1}$$

c) Tax Revenue = (Tax Price) × (Qty Sold)

$$= 6 \times 1$$

$$= \underline{\underline{6}}$$

Q5]

$$P_s = 0.02Q$$

$$P_d = 3 - 0.01Q$$

a) At Equilibrium $P_s = P_d$ (Also $Q_s = Q_d$)

$$\frac{1}{5} - \frac{1}{10} = \frac{1}{10} - \frac{1}{5}$$

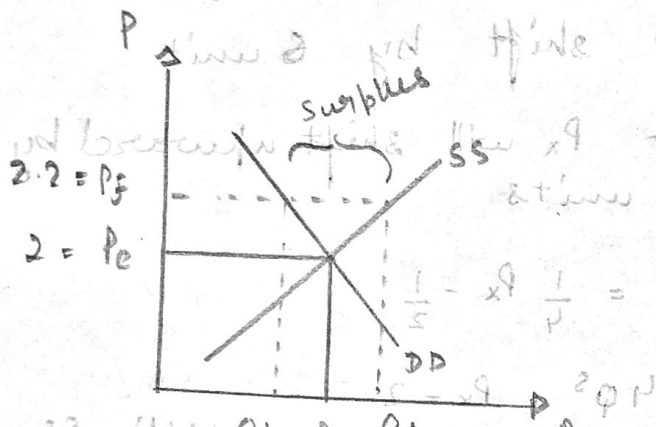
$$0.02Q = 3 - 0.01Q$$

$$Q = 90$$

$$Q_e = 100$$

$$P_e = 2$$

Now suppose a price floor is set at \$2.2



At Price floor of \$2.2

$$Q_d = \frac{3 - 2.2}{0.01} = 80$$

$$Q_s = \frac{2.2}{0.02} = 110$$

$$\text{Surplus} = Q_s - Q_d = 30 \text{ units}$$

Qty demanded (Q_d) = Domestic Consumption
= 80 units

$$\text{Cost to gov of buying surplus} = 30 \times 2.2 = \underline{\underline{66}}$$

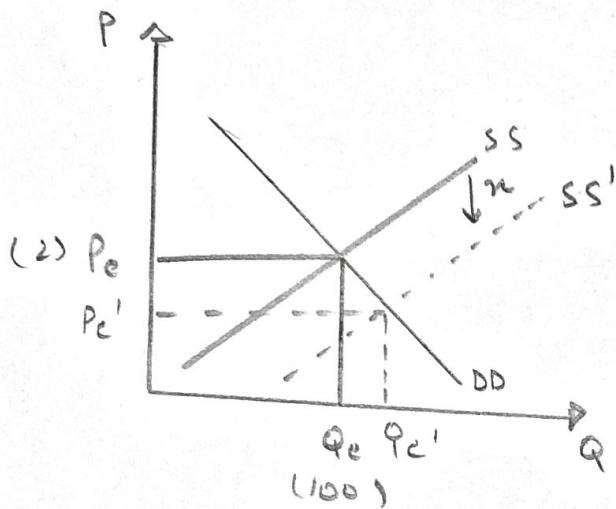
$$1 = \frac{1}{5} \quad 5 = \frac{1}{5}$$

(b) Tax revenue = (Tax price) x (Qty sold)

$$1 \times 2 =$$

$$2 =$$

b) Suppose subsidy of ₹n was given
(this will affect the supply curve only)



To find eqⁿ of SS'

$$P_s = 0.02Q - n$$

$$P_d = 3 - 0.01Q$$

At eq^b

$$0.02Q - n = 3 - 0.01Q$$

$$Q_e = \frac{3+n}{0.03}$$

$$P_e = 0.02 \left(\frac{3+n}{0.03} \right) - n$$

$$= \frac{2}{3} (3+n) - n$$

$$= 2 + \frac{2}{3}n - n$$

$$P_e = 2 - \frac{n}{3}$$

Earning

~~Price~~ For Farmer = Subsidy + $\underbrace{P_e}_{\text{extra incentive}}$

$$2.2 = n + 2 - \frac{n}{3}$$

$$n = 0.3 = \underline{\underline{30\%}}$$

$$Q_e = \underline{\underline{110 \text{ units}}}$$

$$\begin{aligned} \text{Cost for gov} &= \text{Price} \times \text{Qty} = (0.3)(110) \\ &= \underline{\underline{33}} \end{aligned}$$