Q22. Suppose the demand and supply curve of commodity X in a perfectly competitive market are given by:

$$q^D = 700 - p$$

$$q^S = 500 + 3p \text{ for } p \geq 15$$

$$= 0 \text{ or } 0 \leq p < 15$$

Assume that the market consists of identical firms. Identify the reason behind the market supply of commodity X being zero at any price less than Rs 15. What will be the equilibrium price for this commodity? At equilibrium, what quantity of X will be produced?

Ans: It is given that;

$$q_d = 700 - p$$

$$q_s = 500 + 3p \text{ for } p > \text{Rs } 15$$

$$= 0 \text{ for } 0 \leq p < 15$$

The market supply is zero for any price from Rs 0 to Rs 15, this is because, for price between 0 to 15, no individual firm will produce any positive level of output (as the price is less than the minimum of AVC). Consequently, the market supply curve will be zero.

At equilibrium $q_d = q_s$

700 – p = 500 + 3p

– p -3p = 500 – 700

– 4p = – 200

p = 50

Equilibrium price is Rs 50.

Quantity = q_s = 500 + 3p

= 500 + 3 (50)

= 500 + 150

= 650

Therefore, the equilibrium quantity is 650 units.

********** END **********