



Q14. How does technological progress affect the supply curve of a firm?

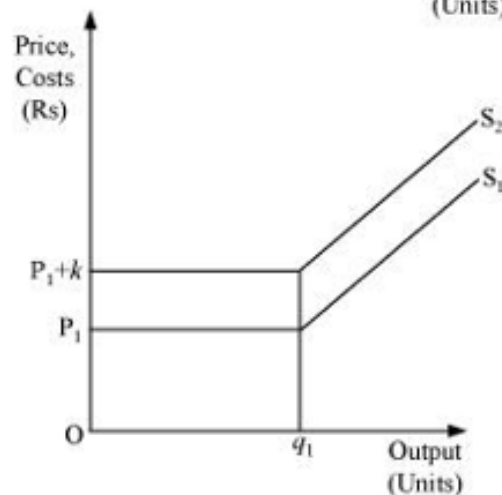
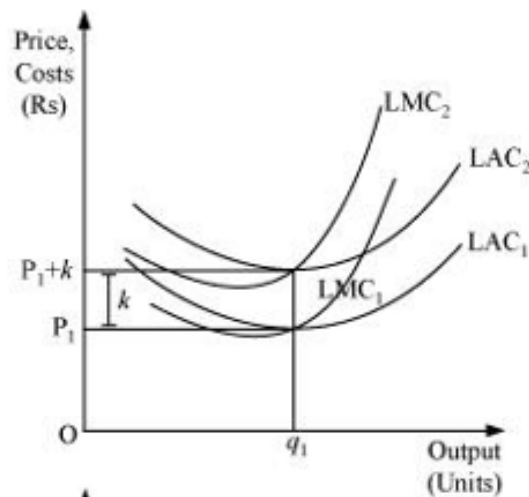
Ans: The supply curve of a firm is a positive function of a state of technology. That is, if the technology available to the firm appreciates, more amount of output can be produced by the firm with the given levels of capital and labour. Due to such innovations or technological advancements, the firm will experience lower cost of production, which will lead to rightward downward shift of the MC curve. This will further lead to rightward shift of the firm's supply curve. Thus, due to the appreciation and advancement of production techniques, the firm will produce more and more output that will be supplied at a given market price.

Q15. How does the imposition of a unit tax affect the supply curve of a firm?

Ans: A unit tax is the tax imposed on per unit of the output sold. Due to the imposition of unit tax, the cost of production per unit of output increases, which ultimately increases the marginal cost. Consequently, the LMC curve will shift leftward upward and as the supply curve is a portion of LMC, so the supply curve will also shift leftward upward.

Let us understand the effect of imposition of unit tax through an example.

Suppose that a firm is facing the price OP_1 . LAC_1 and LMC_1 are the long run average cost curve and long run marginal cost curve respectively. Also assume that the government has imposed a unit tax of Rs k per unit of output produced. Now, this will rise the firm's LAC and LMC, as the firm needs to pay Rs k extra on each output produced. Consequently, LMC_1 and LAC_1 will shift leftward upwards to LMC_2 and LAC_2 . The magnitude of shift is equal to Rs k . As the supply curve is a part of LMC, it will also shift leftward from S_1 to S_2 , due to the imposition of the tax. Consequently, the firm will now supply lesser units of output.



Effect of unit tax on Supply Curve

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