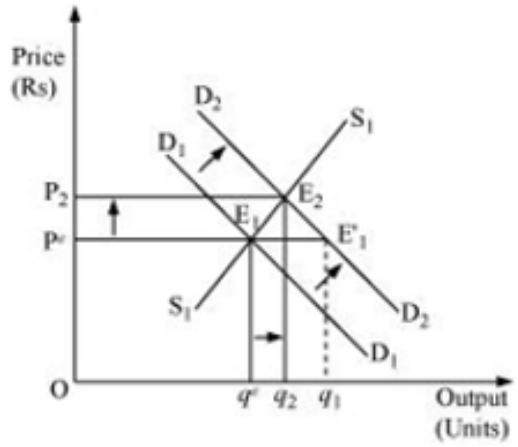
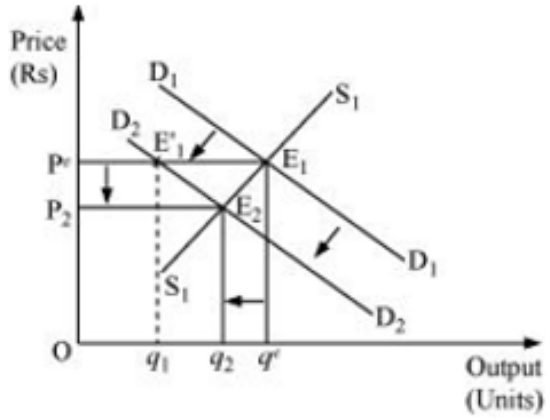
Q8. How is the equilibrium number of firms determined in a market where entry and exist is permitted?
Ans: The characteristic of free entry and exit of firms ensures that all the firms in a perfect competitive market earn normal profit, i.e. the market price is always equal to the minimum of LAC. No new firm will be attracted to enter the market or no existing firm will leave, if the price is equal to the minimum of LAC. Thus, the number of firms is determined by the equality of price and the minimum of LAC. The market equilibrium is determined by the intersection of market demand curve (D_1D_1) and the price line. The equilibrium price is p_1 and the equilibrium output is q_1. At this equilibrium price, each firm supplies the same output q_1f, as it is assumed that all the firms are identical. Therefore, at the equilibrium, the number of firms in the market is equal to the number of firms required to supply output q_1 at price p_1, and each in turn supplying q_1f amount at this price. That is
$n = q_1 / q_1f$
Where,
n = number of firms at market equilibrium
q_1 = the equilibrium quantity demanded
q_1f= the quantity of output supplied by each firm

Q9: How are equilibrium price and quantity affected when income of the consumers
(a) increase
(b) decrease
Ans: (a) Increase in income of consumers



If the number of firms is assumed to be fixed, then the increase in consumers' income will lead the equilibrium price to rise.
Let us understand how it happens:
D_1D_1 and S_1S_1 represent the market demand and market supply respectively. The initial equilibrium occurs at E1, where the demand and the supply intersect each other. Due to the increase in consumers' income, the demand curve will shift rightward parallelly while the supply curve will remain unchanged. Hence, there will be a situation of excess demand, equivalent to $\left(q^e - q^1\right)$. Consequently, the price will rise due to excess demand. The price will continue to rise until it reaches E_2 (new equilibrium), where D_2D_2 intersects the supply curve S_1S_1. The equilibrium price increases from P^e to P_2 and the equilibrium output increases from q^e to q_2.

(b) Decrease in the income of consumers



The decrease in consumers' income is depicted by leftward parallel shift of demand curve from D_1D_1 to D_2D_2. Consequently, at the price P^e, there will be an execs supply $\left(q^e - q^1\right)$, resulting the price to fall. At the new equilibrium (E2), where D2D2 intersect the supply curve, the equilibrium price falls from P^e to P_2 and the equilibrium quantity falls from q^e to q_2.

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