C O R - HOTS & Applications

Q.1. During the market period all costs are fixed costs. How?

Ans. This is because, market period by definition is the one during which production cannot be increased by way of greater application of the factors. Implying that all factors are fixed factors during the market period. Hence, all costs during the market period are fixed costs.

Q.2. Does TC always shoot from Y-axis?

Ans. No, TC shoots from the Y-axis only when we are referring to the short period and are, therefore, distinguishing between fixed cost and variable costs. In the long period, all costs are variable costs. Accordingly, in the long period TC shoots from the origin.

Q.3. MC can be measured both as the difference between TC_n and TC_{n-1} as well as the difference between TVC_n and TVC_{n-1}. How?

Ans. We know, $MC = TC_n - TC_{n-1}$

We also know that, $TC = TFC + TVC$

Accordingly, $MC = (TFC_n + TVC_n) - (TFC_{n-1} + TVC_{n-1})$

$= TFC_n + TVC_n - TFC_{n-1} - TVC_{n-1}$

$= TVC_n - TVC_{n-1}$

TFC_n cancels out with TFC_{n-1} because fixed cost by definition is constant, no matter if it is for 'n' units of output or 'n–1' units of output.

Q.4. What segment of MC curve serves as short period supply curve of the firm and what as long period supply curve?

Ans. During the short period, the firm must cover at least the variable costs. Also, we know that the firm strikes its equilibrium only on a rising segment of MC curve. Accordingly, the rising segment of MC curve beyond AVC (which the firm must cover, as equal to price per unit) serves as its short period supply curve. In the long period, a firm must cover all costs of production; price must at least be equal to AC. Accordingly, a rising segment of MC beyond AC (or beyond a point where AC = Price = AR) serves as the firm's long period supply curve.

Q.5. Show that the rising portion of the marginal cost curve is the supply curve of a competitive firm.

Ans. A competitive firm strikes its equilibrium when:

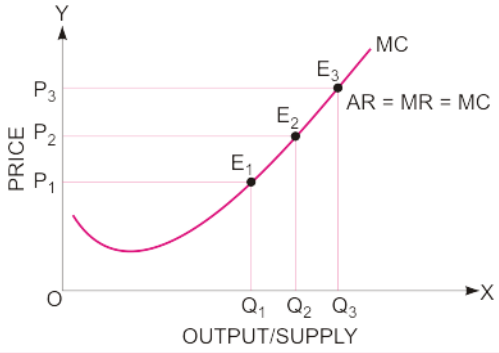
i. MR = MC, and

ii. MC is rising at the point of equilibrium.

Since price (= AR) is given to a firm and AR = MR, it makes no sense to strike equilibrium when the MC is falling. Given the fact that equilibrium will be struck only at a point on the rising MC, it follows as a deductive logic that firm's supply will correspond only to the rising segment of MC curve. And MC itself serves as a supply curve because it shows the relationship between price on the one hand and output (supply) on the other.

Fig. 5 shows E_1 , E_2 and E_3 as points of equilibrium, showing OQ_1 , OQ_2 , and OQ_3 as output (supply) corresponding to OP_1 ,OP_2 and OP_3 price.

FIGURE 5



Q.6. Average cost of production must ultimately rise when the level of output continues to expand, no matter it is related to short period production function or long period production function. Then, where is the difference between the two types of production functions?

Ans. In the short period production function, rise in the average cost is related to the 'diminishing returns to a factor'. In the long period production function, on the other hand, rise in the average cost is related to diminishing returns to scale. In the short period, diminishing returns must set in when the ideal factor ratio is crossed because of the fixity of the factor. In the long period, diminishing returns must set in when diseconomies of scale start overshadowing the economies of scale.

Q.7. Consider a situation when 10% increase in all inputs leads to 12% increase in output. How does it impact the average cost? Is it a short period phenomenon or a long period phenomenon?

Ans. When 10% increase in all inputs leads to 12% increase in output, unit cost of production $\left(\frac{TC}{Q}\right)$ must decline. Implying a fall in average cost. It certainly is a long period phenomenon when all inputs are increased.

Because, it is only in the long period that all factors are variable factors. In the short period, some factors must be fixed. Accordingly, the possibility of increasing all inputs is ruled out.

Q.8. Why is long period average cost curve for a firm U-shaped, when in the long run a firm can combine different factors in the best possible ratio?

Ans. In the long period, firm's average cost curve is U-shaped not because of any departure from the ideal input ratio, but because of the economies and diseconomies of scale. Initially, there are increasing returns to scale, causing a fall in average cost curve. Subsequently, there are constant returns to scale, causing stability of average cost curve. Finally, there are diminishing returns to scale, causing a rise in average cost curve.

Q.9. Is TR the sum total of area under AR corresponding to a given level of output?

Ans. TR is the sum total of area under AR corresponding to a given level of output only if AR is constant as under perfect competition. In situations of monopoly or monopolistic competition when AR is not constant, TR is not the sum total of AR corresponding to a given level of output. In such situations TR can be obtained in two ways:

$TR = AR \times Q$

$TR = \sum MR$

However, under all situations TR may be estimated as the sum total of area under MR corresponding to a given level of output.

Q.10. Why should equilibrium not be struck when TR is maximum?

Ans. Equilibrium is struck not when TR is maximum. Instead, it is struck when profit is maximised. And, profit is maximised when the difference between TR and TC is maximised. Or, equilibrium is struck when: MR = MC, and MC is rising.