



Q11. When does a production function satisfy decreasing returns to scale?

Ans: Decreasing returns to scale (DRS) holds when a proportional increase in all the factors of production leads to an increase in the output by less than the proportion. For example, if both labour and capital are increased by 'n' times but the resultant increase in output is less than 'n' times, then we say that the production function exhibits DRS.

$$F(nL, nK) < n \cdot f(L, K)$$

Q12. Briefly explain the concept of the cost function.

Ans: The functional relationship between the cost of production and the output is called the cost function. It is expressed as

$$C = f(Q_x)$$

Where,

C = cost of production

$Q_x$  = units of output x produced

In other words, the output-cost relationship for a firm is depicted by the cost function.

The cost function depicts the least cost combination of inputs associated with different output levels.

Q13. What are the total fixed cost, total variable cost and total cost of a firm? How are they related?

Ans:

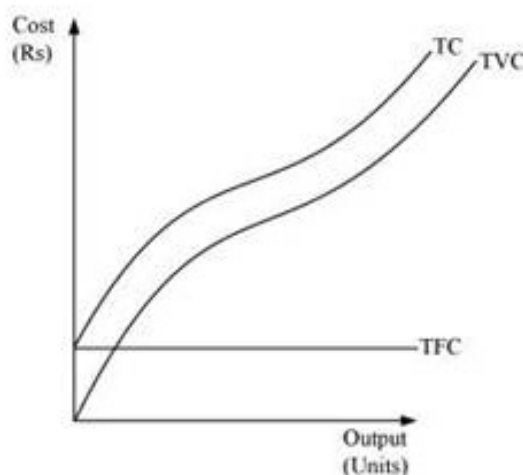
**Total Fixed Cost:** This refers to the costs incurred by a firm in order to acquire the fixed factors for production like cost of machinery, buildings, depreciation, etc. In short run, fixed factors cannot vary and accordingly the fixed cost remains the same through all output levels. These are also called overhead costs.

**Total Variable Cost:** This refers to the costs incurred by a firm on variable inputs for production. As we increase quantities of variable inputs, accordingly the variable cost also goes up. It is also called 'Prime cost' or 'Direct cost' and includes expenses like – wages of labour, fuel expenses, etc.

**Total Cost (TC):** The sum of total fixed cost and total variable cost is called the total cost.

Total cost = Total fixed cost + Total variable cost

$$TC = TFC + TVC$$



Relationship between TC, TFC, and TVC:

- 1) TFC curve remains constant throughout all the levels of output as fixed factor is constant in short run.
- 2) TVC rises as the output is increased by employing more and more of labour units. Till point Z, TVC rises at a decreasing rate, and so the TC curve also follows the same pattern.
- 3) The difference between TC and TVC is equivalent to TFC.
- 4) After point Z, TVC rises at an increasing rate and therefore TC also rises at an increasing rate.
- 5) Both TVC and TFC is derived from TC i.e.  $TC = TVC + TFC$

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