SES'S L.S.RAHEJA COLLEGE OF ARTS AND COMMERCE

Course: Economics II	Unit: I	Prepared by: Rahul Dandekar

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Important Concepts

1) Production function

In simple words, production function shows technical relationship between inputs and output. A production function shows the maximum amount of output that firm can produce using given amount of inputs during a given period of time.

Production function of a firm can be expressed as follows.

Q = f (L, N, K, E, T)

Where,

Q = Quantity produced

L = Labour

N = Natural resources

K = Capital

E = Entrepreneur

T = Technology

f = Shows functional relationship

In the above mentioned function Q i.e. output is dependent variable and L, N, K, E and T i.e. various inputs are independent variables.

2) Fixed proportion production function

The Fixed Proportion Production Function, also known as a Leontief Production Function implies that fixed factors of production such as land, labour, raw materials are used to produce a fixed quantity of an output and these production factors cannot be substituted for the other factors.

3) Variable proportion production function

The Variable Proportion Production Function implies that the ratio in which the factors of production such as labour and capital are used is not fixed, and it is variable. Also, the different combinations of factors can be used to produce the given quantity, thus, one factor can be substituted for the other.

4) Short-run production function

A short-run production function refers to that period of time, in which the installation of new plant and machinery to increase the production level is not possible.

5) Long-run production function

The Long-run production function is one in which the firm has got sufficient time to install new machinery or capital equipment, instead of increasing the labour units.

6) Iso-Quant Curve

The word 'iso' is of Greek origin and means equal or same and 'quants' means quantity. Therefore, an isoquant is a curve along which quantity is the same. An iso-quant is also known as equal product curve or iso-product curve. An iso-quant curve represents same level of output with different combinations of factors of production.

7) Iso-quant map

An iso-quant map represents a set of iso-quant curves. A higher level of iso-quant represents the higher level of output. Thus, in simple word, iso-quant map is a family of iso-quant representing the various iso-quant at a particular level of output.

8) Law of variable proportion

Alfred Marshall, had discussed the law in relation to agriculture, according to him, "an increase in the capital and labour applied in the cultivation of land causes in general a less than proportionate increase in the amount of product raised unless it happens to coincide with an improvement in the art of agriculture".

9) Total product

The total product is the total amount of output produced by all the variable input in a fixed proportion in production. The total product increases with the increase in the unit of labour and reaches to the maximum and their after decline with further more increase in the variable factor.

10) Average product

The average product is per unit of product produced by the firm with per unit of variable factor inputs.it is obtained by dividing the total product by the unit of total variable factor. The average product increases initially and then declines.

11) Marginal product

Marginal product is the additional output produced by an additional unit of variable factor. Marginal product increases and thereafter falls when TU becomes maximum MU becomes zero and further becomes negative.

12) Ridge lines

The ridge lines are the locus of points of isoquants where the marginal products (MP) of factors are zero. The upper ridge line implies zero MP of capital and the lower ridge line implies zero MP of labour. Production techniques are only efficient inside the ridge lines. The marginal products of factors are negative and the methods of production are inefficient outside the ridge lines.

13) Iso-Cost line

Iso-cost line represents the price of factors along with the amount of money an organization is willing to spend on factors.

14) Expansion path

An expansion path (also called a scale) is a curve in a graph with quantities of two inputs, typically capital and labour, plotted on the axes. The path connects optimal input combinations as the scale of production expands. A producer seeking to produce the most units of a product in the cheapest possible way attempts to increase production along the expansion path.

15) Law of returns to scale

The term returns to scale refers to the changes in output as all factors change by the same proportion.

Returns to scale relates to the behaviour of total output as all inputs are varied and is a long run concept.

Important Questions

1) What is production function? Discuss its types.

2) Discuss in detail properties of Isoquants

3) Explain producer's equilibrium using Isoquants and Iso-cost approach.

4) Discuss Law of variable proportions.

5) Discuss Laws of returns to scale.

6) Write short notes on

   a) Types of Isoquants

   b) Isoquant Map

   c) Iso Cost Line

   d) Slope of Iso Cost Line

   e) Expansion path of the firm