

Subject _____



Class - B.Com - Part - I.

Subject: Business Economics
and Environment

Topic: Iso-product curve

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ISO - Product Curve and Its Characteristics:

Meaning:

- (*) ISO-product curve also shows all possible combination of two inputs physically capable of producing a given level of output.

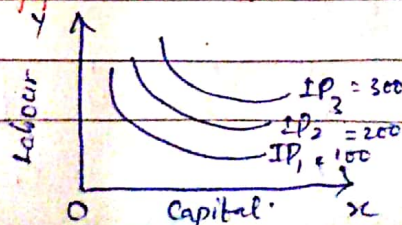
A curve showing the combination of factor inputs that have constant market cost. If firm are acting as price-takers in factor markets, the isocost curve is a straight line, whose slope represents the relative prices of different factor services.

- (*) Isoquant line :- [what is Iso-quant line?]

An isoquant is a contour line drawn through the set of points at which the same quantity of output is produced while changing the quantities of two or more inputs.

- (*) ISO product map :- [what is ISO product map?]

An iso-product ~~curve~~ curve is locus of various combination of two factors of production giving the same level of output and a producer is indifferent to each of such combination. All the combination of two inputs give the same quantum of output to a producer and the producer is indifferent to each such combination.



Definitions of ISO-Product Curve:-

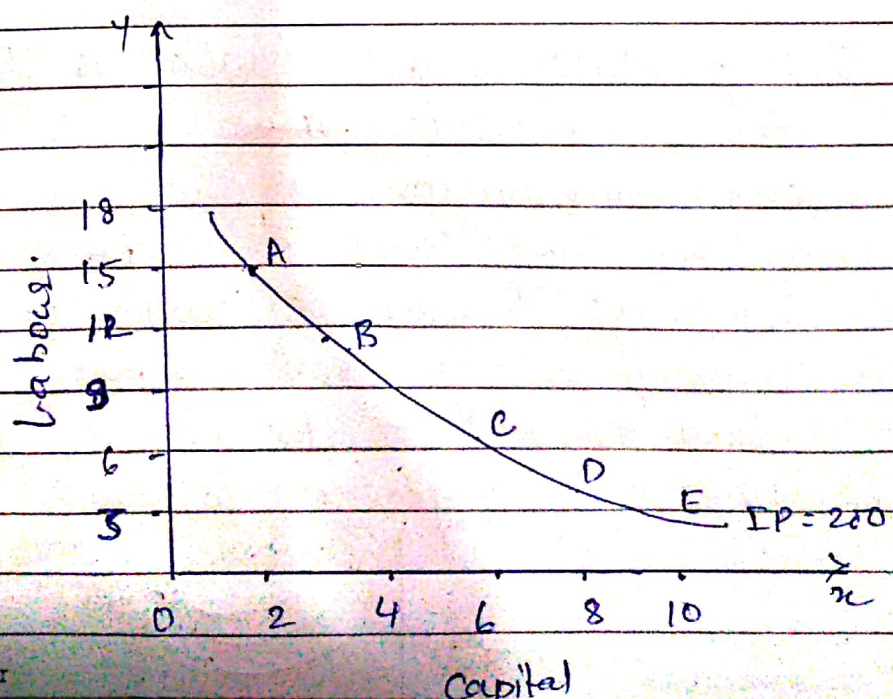
[What ISO product curve?]

In the words of Keirstead, "ISO-product curve represents all possible combination of two factors that will give the same total product".

In ~~simple~~ other words: "An ISO quant curve is a locus of points representing various combination of two inputs - capital and labour - yielding the same output".

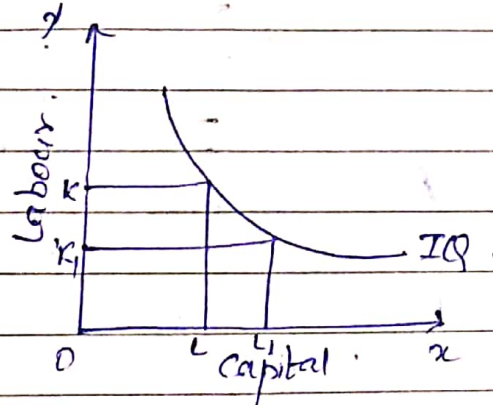
Table - 1 .

Combination	Factor x (capital)	Factor y (labour)	Level of Total Production Quantity -
A	2	15	200
B	4	11	200
C	6	8	200
D	8	6	200
E	10	5	200



Iso-product curve fall from left to right :-

- [Why does Iso-product curve fall from left to right?]
- Iso-product curve slope downward from left to right because slope MTRS (Marginal rate of Substitution) of labour for capital diminishes. When we increase labour, we have to decrease capital to produce a given level of output.

Iso product curve is convex to the origin :-

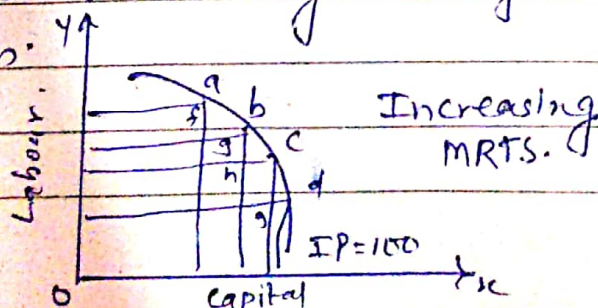
[Why is an Isoquant curve convex to the origin?]

- This is because of the operation of the principle of diminishing marginal rate of technical substitution. MRTS is the rate at which marginal unit of an input can be substituted for another input making the level of output remain the same.

This can be illustrated with the help of diagrams:

situation: The Iso-product curve is concave to origin which represents increasing marginal rate of technical substitution.

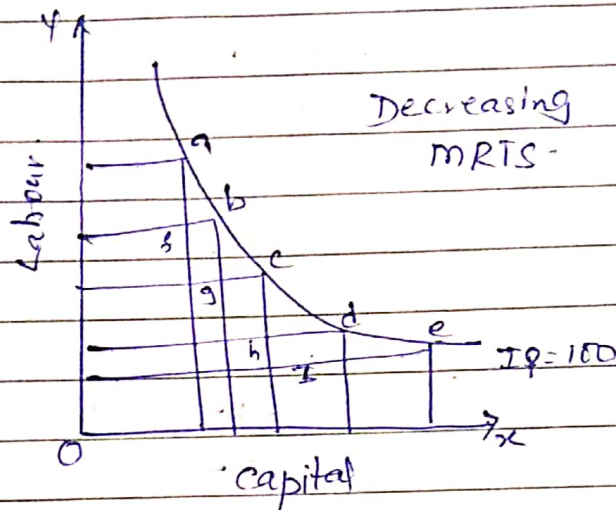
$$af < bg < ch < di$$



Situation - II

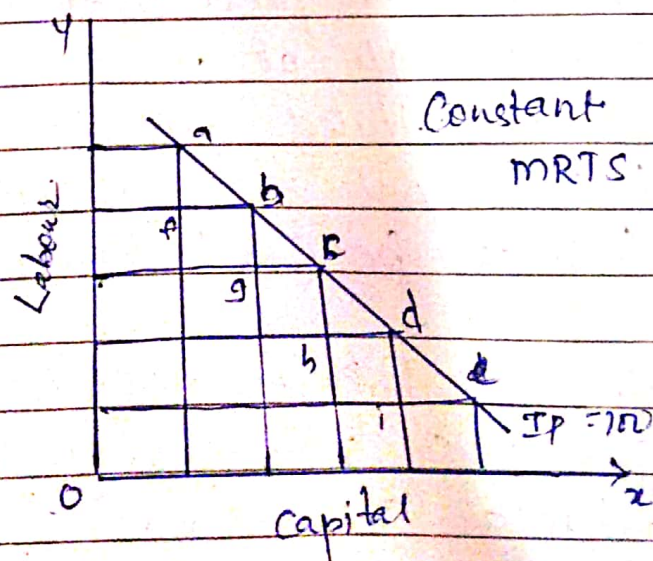
(quant)
 In this situation - Iso-product is convex to origin which represents decreasing marginal rate of technical substitution.

$$af > bg > ch > di$$

Situation III

In this situation, Iso-product curve is a straight line. In graphic terms, a constant marginal rate of technical substitution is represented in the form of straight diagonal iso-product curve at a 45° angle.

$$af = bg = ch = di$$



Iso-product curve never touches axis:

If an Iso-product (quant) curves touches x axis it would mean that the product is being produced with the help of X factor (capital) alone. Without using factor Y (labour). This is a logical absurdity (ribiculous) that a single factor cannot produce anything. Therefore IP_1 and IP_2 cannot be Iso-product curve as shown in fig.

