B.A. Part - I
Economics Honours
Paper: I
Micro Economics

Topic :- Laws of Return to Scale

* Laws of Return to Scale :—

The law of returns to scale explains the proportional change in output with respect to proportional change in inputs.

In other words, the law of returns to scale state when there are a proportionate change in the amounts of inputs, the behavior of output also changes.

The degree of change in output varies with change in the amount of inputs.

For ~~ex~~ example, an output may change by large proportion, same proportion, or small proportion with respect to change in input.

In the long run all factors of production are variable. Accordingly, the scale of production can be changed by changing the quantity of all factors of production.

Definition

1) "The term returns to scale refers to changes in output as all factors changed by the same proportion". - Koutsoyiannis

2) Returns to Scale relates to the behaviour of total Output as all inputs are varied and is a long run concept.
- Leibhafsky.

Long run production function -

$$P = f(L, K)$$

[L - Labour
K - Capital

On the basis of the possibilities, law of returns can be classified into three categories:

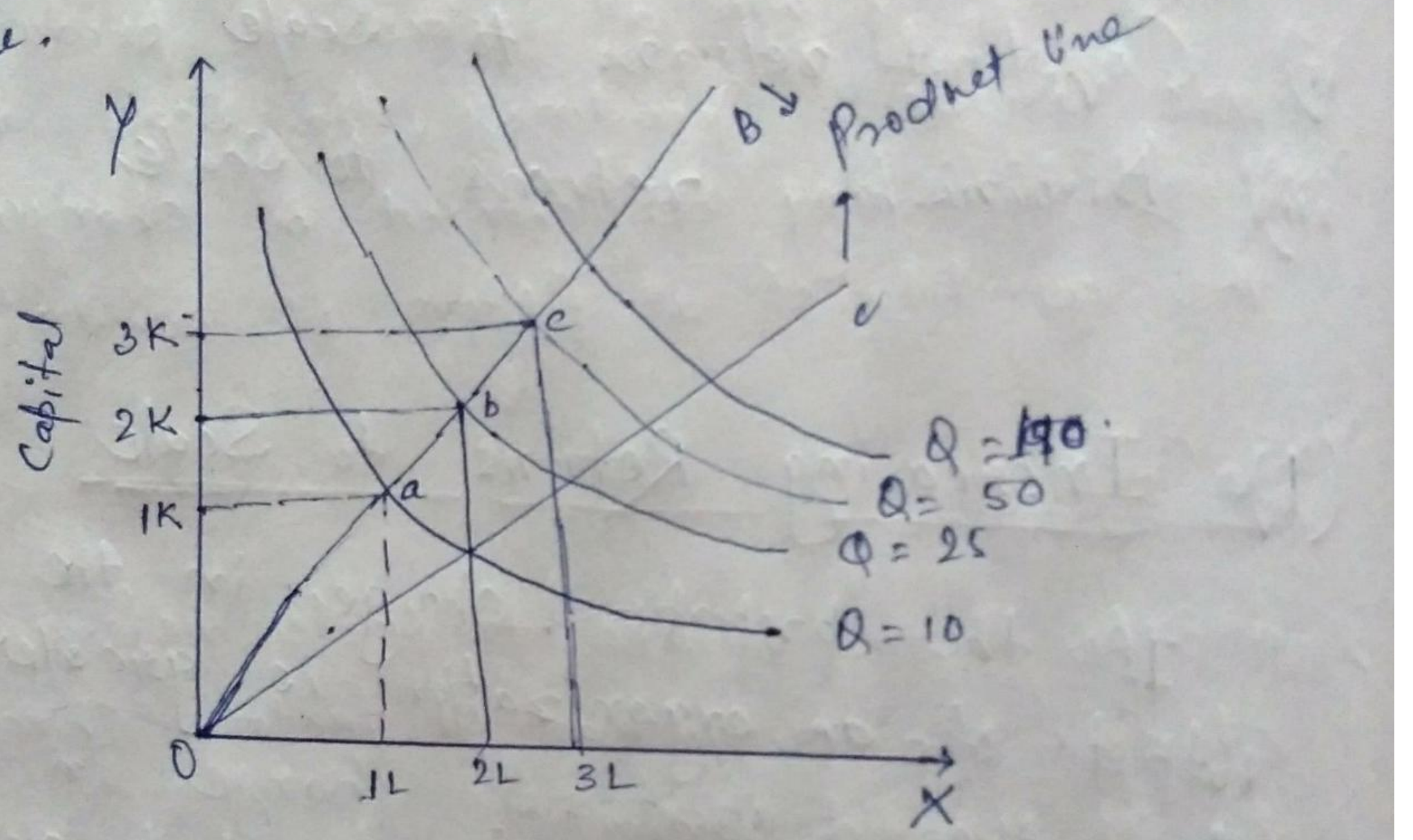
i) Increasing returns to Scale
ii) Constant returns to Scale
iii) Diminishing returns to Scale

(1). Increasing Returns to Scale

If the proportional change in the output of an organization is greater than the proportional change in inputs, the production is said to reflact increasing returns to Scale. for example, to produce a particular product, if the ~~increase~~ quantity of inputs is doubled and the increase in output is more than double, called increasing returns to Scale.

When there is an increase in the scale of production, the average cost per unit produced is lower. This is because at this stage an organization enjoyes high economies of scale.

Rigor shows the increasing returns to scale.



In this figure a movement from 'a' to 'b' indicates that the amount of inputs is doubled. Now the combination of inputs has reached to 2K + 2L from 1K + 1L. However, the output has increased from 10 to 25 (150% increase) which is more than double. Similarly,

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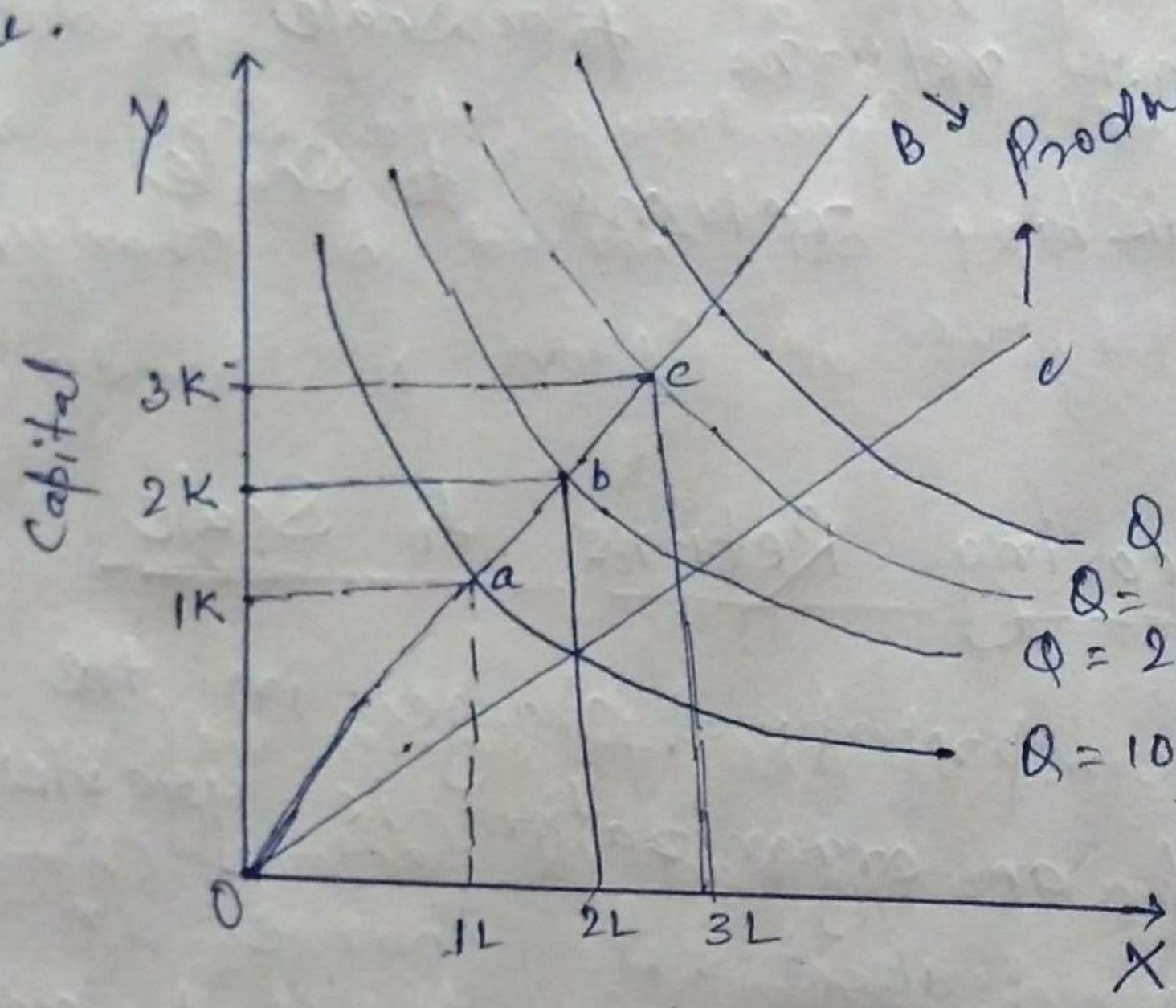
Figure shows the increasing returns to scale.



In this figure a movement from 'a' to 'b' indicates that the amount of inputs is doubled. Now the combination of inputs has reached to 2k + 2L from 1K + 1L. However, the output has increased from 10 to 25 (150% increase) which is more than double. Similarly,

(5) When input changes from 2K + 2L to 3K + 3L, then output chages from 25 to 50 (100% inorease). Which is greater than change in input. This shows increasing returns to scale.

There are a number of factors responsible for increasing returns to scale.

i) Technical and managerial indivisibility

ii) Specialization

iii) Concept of Dimensions.

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