Course : BBA

SEM : IV

PAPER CODE: 409

TOPIC: Training

SUBJECT: Human resources management

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Theory of Production

- Production is a process that create/adds value or utility
- It is the process in which the inputs are converted in to outputs.

Inputs	• The factors of production such as Land, Labour, Capital, Technology ,etc
Outputs	• The goods and service produced such as Soap, Omni Car ,etc

Production Function

- Production function means the functional relationship between inputs and outputs in the process of production.

- It is a technical relation which connects factors inputs used in the production function and the level of outputs

$$Q = f(\text{Land, Labour, Capital, Organization, Technology, etc})$$

Factors of Production

Land	• Natural resources such as surface, mineral , air, rivers, sea, etc • Free gift of nature, fixed
Labour	• Mental or physical effort done by a man with the view of
Capital	• Man made goods used in the production process • Most mobile factor
Organization	• Entrepreneur or coordinator of all other factors of production

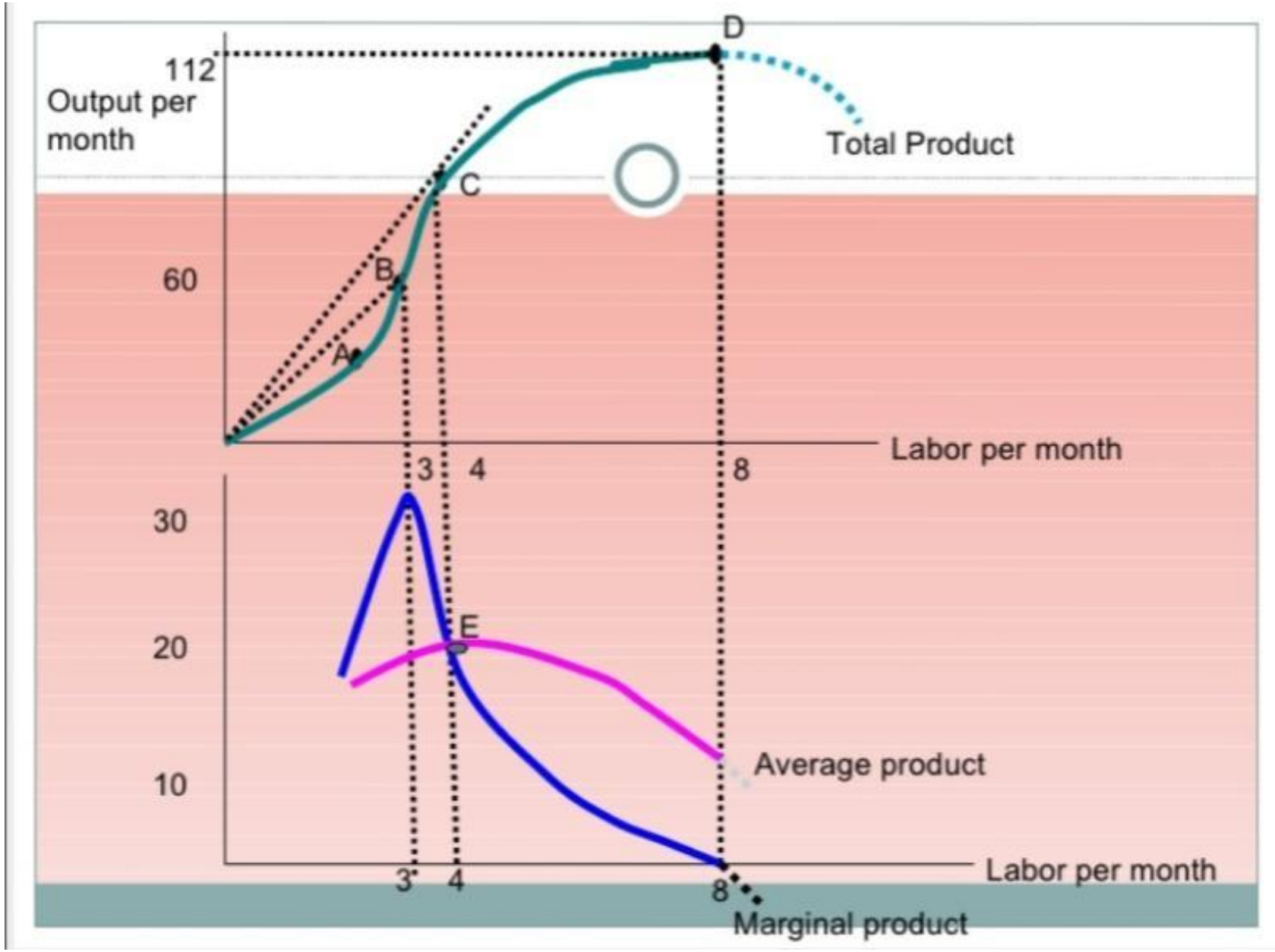
Inputs : Fixed inputs and Variable inputs

Fixed inputs

- Remain the same in the short period .
- At any level of out put, the amount is remain the same.
- The cost of these inputs are called Fixed Cost
- Examples:- Building, Land etc
- (In the long run fixed inputs are become varies)

Variable inputs

- In the long run all factors of production are varies according to the volume of outputs.
- The cost of variable inputs is called Variable Cost
- Example:- Raw materials, labour, etc


D
112
Output per month
Total Product
C
60
B
A
Labor per month
3
4
8
30
20
E
10
Average product
Labor per month
3
4
8
Marginal product

Law of Production Function

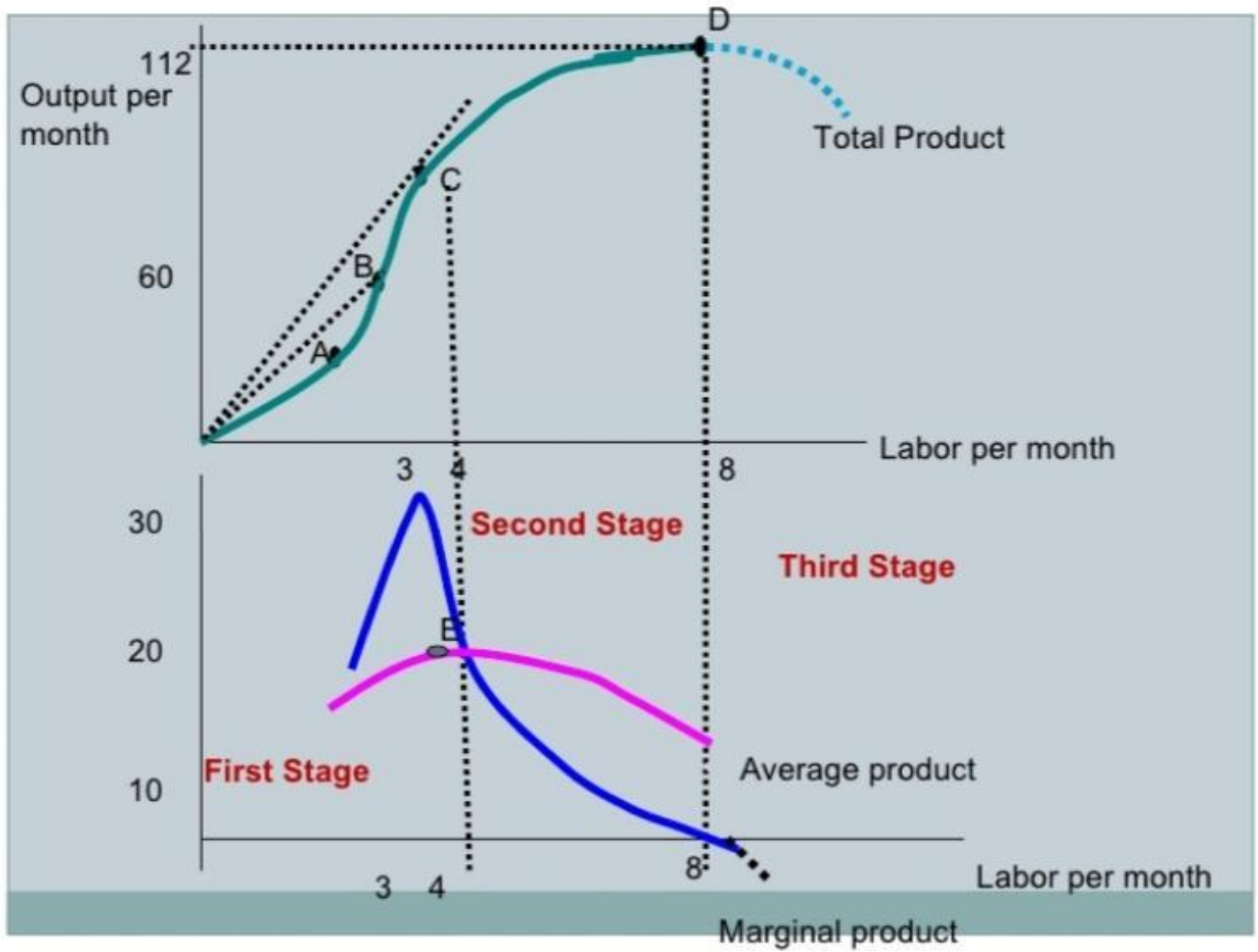
- **Laws of Variable proportion**- Law of Diminishing Return (Short run production function with at least one input is variable)

- **Laws of Return scales** – Long run production function with all inputs factors are variable.

• Law of variable proportion: Short run Production Function

- Explain short run production function
- Production function with at least one variable factor keeping the quantities of others inputs as a Fixed.
- Show the input-out put relation when one inputs is variable

"If one of the variable factor of production used more and more unit,keeping other inputs fixed, the total product(TP) will increase at an increase rate in the first stage, and in the second stage TP continuously increase but at diminishing rate and eventually TP decrease."


D
112
Output per month
Total Product
C
B
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A
Labor per month
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4
8
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Second Stage
Third Stage
B
20
First Stage
Average product
10
8
3
4
Labor per month
Marginal product

Stages in Law of variable proportion

First Stage: Increasing return

- TP increase at increasing rate till the end of the stage.
- AP also increase and reaches at highest point at the end of the stage.
- MP also increase at it become equal to AP at the end of the stage.
- MP>AP

Second Stage: Diminishing return

- TP increase but at diminishing rate and it reach at highest at the end of the stage.
- AP and MP are decreasing but both are positive.
- MP become zero when TP is at Maximum, at the end of the stage
- MP<AP.

Third Stage: Negative return

- TP decrease and TP Curve slopes downward
- As TP is decrease MP is negative. AP is decreasing but positive.

Where should rational firm produce?

- **Stage I:** MP is above AP implies an increase in input increases output in greater proportion.
- The firm is not making the best possible use of the fixed factor.
- So, the firm has an incentive to increase input until it crosses over to stage II.
- **Stage III:** MP is negative implies contribution of additional labor is negative so the total output decreases .
- In this case it will be unwise to employ an additional labor.

- **Stage II:** MP is below AP implies increase in input increases output in lesser proportion.
- ***A rational producer/firm should produce in stage II.***
- But where exactly the firm will operate within stage II cannot be determined only on the basis of the product curves.
- We need information about input costs and price of output.

Various concept of production

Total Product

Average Product- **Ratio of Total Product and one variable inputs**

Marginal Product – **The rate of change of out put as a result changes in one variable input**