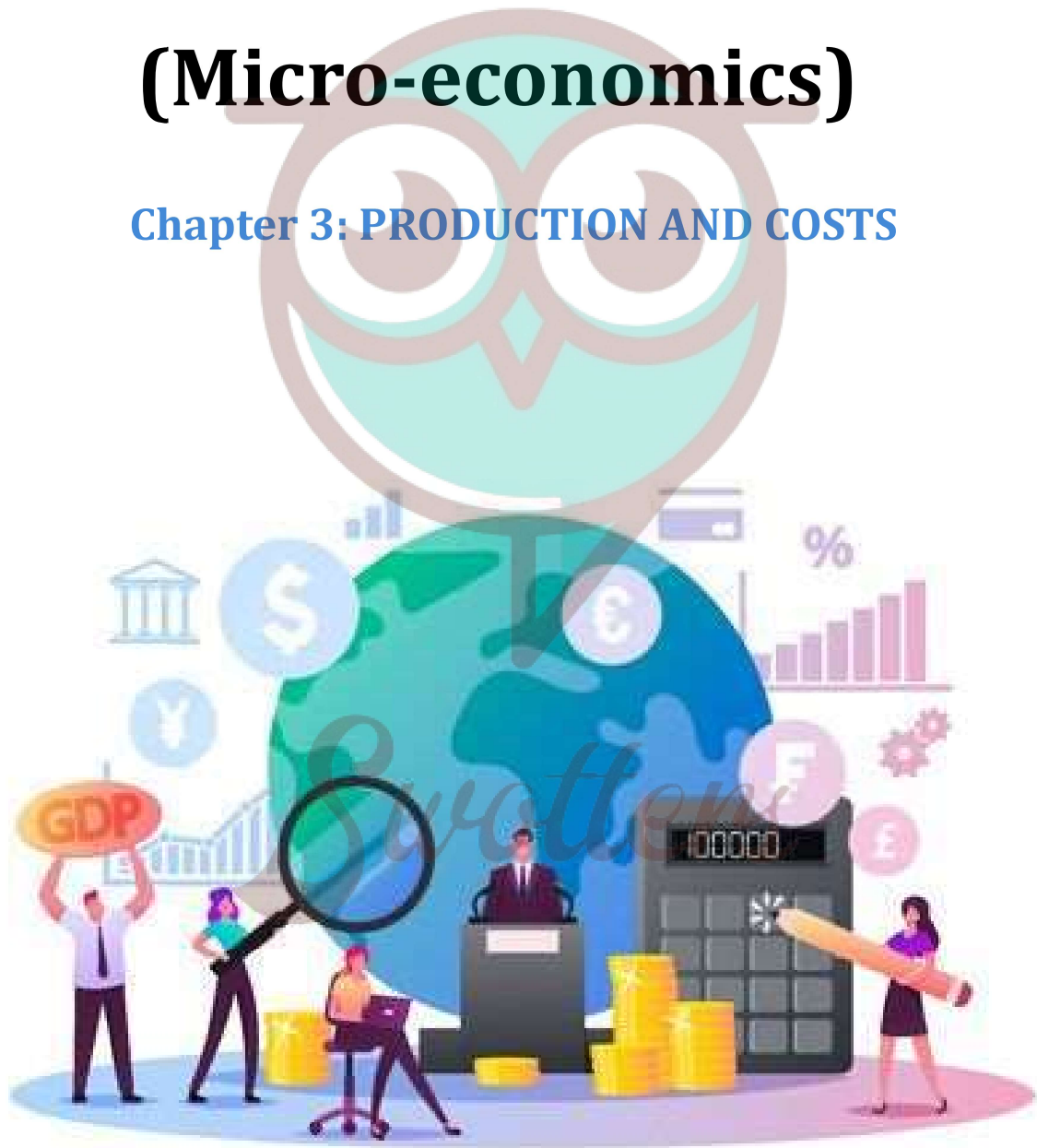


Economics

(Micro-economics)

Chapter 3: PRODUCTION AND COSTS



Important Questions

Multiple Choice Questions-

Question 1. In production function, production is a function of:

- (a) Price
- (b) Factors of Production
- (c) Total Expenditure
- (d) None of these

Question 2. The basic reason of operating the Law of Diminishing Returns is:

- (a) Scarcity of Factors
- (b) Imperfect Substitution between Factors
- (c) Both (a) and (b)
- (d) None of the above

Question 3. Which of the following explains the short-run production function ?

- (a) Law of Demand
- (b) Law of Variable Proportion
- (c) Returns to Scale
- (d) Elasticity of Demand

Question 4. Long-run production function is related to:

- (a) Law of Demand
- (b) Law of Increasing Returns
- (c) Laws of Returns to Scale
- (d) Elasticity of Demand

Question 5. In which stage of production a rational producer likes to operate in short-run production ?

- (a) First Stage
- (b) Second Stage
- (c) Third Stage
- (d) None of these

Question 6. Law of variable proportion explains three stages of production. In the first stage of production:

- (a) Both MP and AP rise
- (b) MP rises
- (c) AP Falls
- (d) MP is zero

Question 7. At which time all the factors of production may be changed ?

- (a) Short run
- (b) Long run
- (c) Very Long run
- (d) All the three

Question 8. Production function is expressed as:

- (a) $Q_x = P_x$
- (b) $Q_x = f(A, B, C, D)$
- (c) $Q_x = D_x$
- (d) None of these

Question 9. Which factors among following we find in short-run production process ?

- (a) Fixed Factors
- (b) Variable Factors
- (c) Both (a) and (b)
- (d) None of these

Question 10. The cycle which increases first and after being constant starts to reduce is called :

- (a) APP
- (b) MPP
- (c) TPP
- (d) All of these

Question 11. Which of the following is a source of production ?

- (a) Land
- (b) Labour
- (c) Capital
- (d) All of these



Swotters

Question 12. Law of variable proportion is related to :

- (a) Both short-run and long run
- (b) Long-run
- (c) Short-run
- (d) Very Long-run

Question 13. An active factor of production is:

- (a) Capital
- (b) Labour
- (c) Land
- (d) None of these

Question 14. If all the factors of production are increased by same proportion and as a result output increases by a greater proportion than it is called :

- (a) Constant returns to scale
- (b) Decreasing returns to scale
- (d) All of these
- (d) None of these

Question 15. Which of the following is included in money cost ?

- (a) Normal Profit
- (b) Explicit Cost
- (c) Implicit Cost
- (d) All of these

Very Short :

QUESTION 1 Does Total Physical Product increase only when Marginal Physical Product increases?

QUESTION 2 What will be the marginal product when the total product is maximum?

QUESTION 3 How is Total Physical Product derived from Marginal Physical Product?

QUESTION 4 What do you mean by production?

QUESTION 5 Increase in Total Physical Product indicates that there are increasing returns to a factor.

QUESTION 6 Why Average Fixed Cost curve never touches "x" axis though lies very close to the x-axis?

QUESTION 7 When TVC is zero at zero levels of output, what happens to TFC or why TFC is not zero at zero level of output?

QUESTION 8 What is a change in quantity demanded?

Short Questions :

QUESTION 1 Evaluate the marginal product for the following.

Variable Factor Unit	0	1	2	3	4	5	6
Total Unit	0	5	13	23	28	28	24

QUESTION 2 Define cost concept. What are the different types of cost?

QUESTION 3 Explain the likely behaviour of total product under the stage of increasing return to a factor with the help of numerical example.

QUESTION 4 With the help of example distinguish between total fixed cost and total variable cost.

QUESTION 5 Draw average cost, average variable cost and marginal cost curves on a single diagram and explain their relations.

QUESTION 6 Draw average cost, average variable cost and average fixed cost curves on a single diagram and explain their relation.

QUESTION 7 Explain the relation between average revenue and marginal revenue when a firm can sell an additional unit of a good by lowering the price.

QUESTION 8 Explain how do the following determine price elasticity of supply:

(i) Nature of the good (ii) Time period.

QUESTION 9 Define marginal revenue. State the relation between marginal revenue and average

revenue when a firm:

(i) is able to sell more quantity of output at the same price.

(ii) is able to sell more quantity of output only by lowering the price.

QUESTION 10 How do changes in MR affect TR?

Long Questions:

1. In the following table, identify the different phases of the law of variable proportions and explain them with the help of the table and a diagram.

Variable input (units)	1	2	3	4	5	6	7	8
Total product (units)	2	5	9	12	14	15	15	14

- All the inputs used in production of a good are increased simultaneously and in the same proportion. What are its possible effects on Total Product? Explain with the help of a numerical example.
- Explain the relation between Average Cost and Marginal Cost.
- If price elasticity of supply of a commodity is 5. A producer supplies 500 units of this product at a price of Rs. 5 per unit. How much quantity of this product will be supplied, at the price of Rs. 6 per unit?

Assertion Reason Question:

- Direction:** In the following questions, a statement of Assertion (A) is followed by a statement of Reason (R). Mark the correct choice as:
 - Both Assertion (A) and Reason (R) are true, and Reason (R) is the correct explanation of the Assertion (A).
 - Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of the Assertion (A).
 - Assertion (A) is true, but Reason (R) is false.
 - Assertion (A) is false, but Reason (R) is true.

Assertion (A): Increasing returns to a factor is a short run phenomenon.

Reason (R): Greater application of the variable factor ensures fully utilization of the fixed factor.

- Direction:** In the following questions, a statement of Assertion (A) is followed by a statement of Reason (R). Mark the correct choice as:
 - Both Assertion (A) and Reason (R) are true, and Reason (R) is the correct explanation of the Assertion (A).
 - Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of the Assertion (A).
 - Assertion (A) is true, but Reason (R) is false.
 - Assertion (A) is false, but Reason (R) is true.

Assertion (A): Average product increases only when marginal product increases.

Reason (R): AP increases so long as MP is greater than AP, whether MP is rising or falling.

MCQ Answers :

- Answer: (b) Factors of Production

2. Answer: (c) Both (a) and (b)
3. Answer: (b) Law of Variable Proportion
4. Answer: (c) Laws of Returns to Scale
5. Answer: (b) Second Stage
6. Answer: (a) Both MP and AP rise
7. Answer: (b) Long run
8. Answer: (b) $Q_x = f(A, B, C, D)$
9. Answer: (c) Both (a) and (b)
10. Answer: (d) All of these
11. Answer: (d) All of these
12. Answer: (c) Short-run
13. Answer: (b) Labour
14. Answer: (d) All of these
15. Answer: (d) All of these

Very Short Answers :

1. Answer: No, because Total Physical Product increases Marginal Physical Product decreases but remains positive.
2. Answer: Marginal Product will be zero when the total product is maximum.
3. Answer: Cumulative addition
4. Answer: Production is the method of producing or developing goods or services in large quantities with the help of various materials.
5. Answer: No, the total physical product also rises when the returns to a factor decrease.
6. Answer: The Average Fixed Cost curve never touches "x" axis though lies very close to the x-axis because Total Fixed Cost can never be zero.
7. Answer: When TVC is zero at zero levels of output, what happens to TFC or why TFC is not zero at zero levels of output because the fixed cost is to be acquired even at zero levels of output.
8. Answer: It is a change along a demand curve. The change is due to a change in price and quantity of a commodity. The two types of change in quantity demand are Extension in demand and Contraction in demand.

Short Answers:

1. Ans.

Marginal Product	0	5	8	10	5	0	-4
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2. Ans. The spending experienced on different inputs is known as the cost.

Types of cost:-

Money Cost- Total money spent by a company for manufacturing goods.

Explicit Cost & Implicit Cost- Payment made to an outsider are explicit and cost of self-supplied inputs are implicit cost.

Real Cost- All hard work, discomforts, sacrifices involved in manufacturing a product is called real cost.

Opportunity Cost- This the cost for the next best alternative foregone.

Short Run Cost- Fixed cost- Fixed factors cost

Variable Cost- Variable factor cost

3. Ans. Increasing return to a factor is the first phase of the Law of return to a factor. When

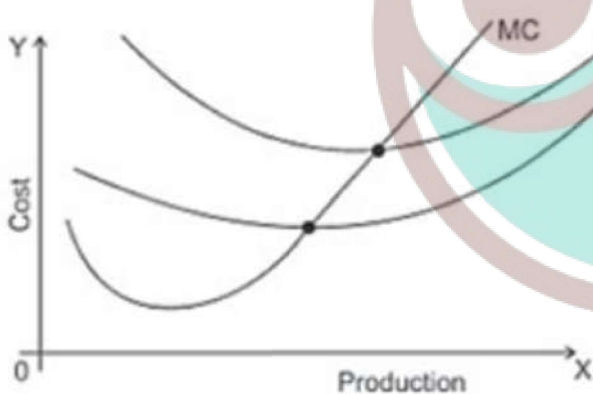
more and more units of a variable factor is combined with fixed factor up to a certain level total physical product increases with increasing rate.

Machine	Unit of labour	Total physical product
1	1	10
1	2	24
1	3	42

4. Ans.

Total fixed cost	Total variable cost
1. Fixed cost remains constant at each level of output ie it do not change with change in quantity.	1. variable cost changes with the change in quantity. It increase or decrease as the output change.
2. It can not be zero when output is zero.	2. it is zero when output is zero
3. Its curve is parallel to X-axis	3. Its curve is parallel to the curve of total cost.
4. Example :- Rent, wages of permanent staff.	4. Example :- cost of raw material, wages of casual labour.

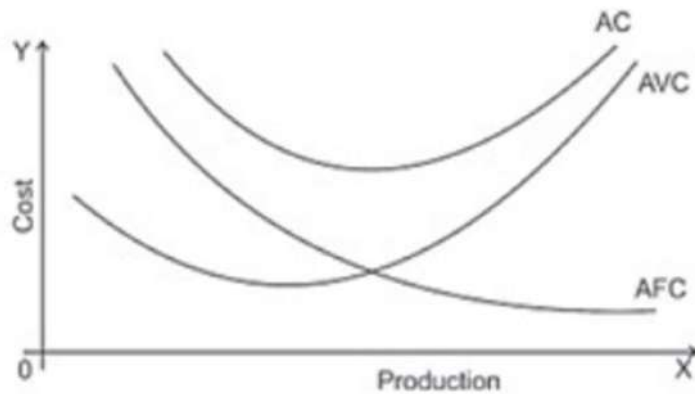
5. Ans.



Relation of AC, AVC and MC

1. MC intersects to AC and AVC at their minimum level
2. AC and AVC decreases before the interection by MC, but remain greater than MC.
3. AC and AVC starts to increase after the itersection by MC, and becomes less than MC.
4. As output increases, AC and AVC tends to be closer but the difference between AC and AVC can never be zero.

6. Ans.



1. AC is the vertical summation of AVC and AFC
2. The difference between AC and AVC falls as output increases but the difference of AC and AFC increases.
3. As output increases AC and AVC tends to be closer but their curves do not intersect each other because AFC always remains more than zero.

7. Ans.

1. AR and MR both decreases.
2. MR decrease at the rate of twice than AR.
3. MR become zero and negative but AR can never be zero.

8. Ans.

1. Nature of Commodity - Elasticity of industrial goods is more than that of agricultural goods. Similarly supply of durable goods e.g. table is more elastic than that of perishable goods e.g. vegetables.

2. Time Period- Generally elasticity of supply is more in the long period than in shorter period of time. The reason is that in the long period, all adjustments to the changed price can be made easily and supply of commodity can be varied accordingly

9. Ans. Marginal revenue is the addition to total revenue from producing one more unit of

output.

1. $MR = AR$ at all levels of the output. (In case of perfect competitive market)
2. MR will be less than AR at all levels of the output. (In case of monopoly and monopolistic market)

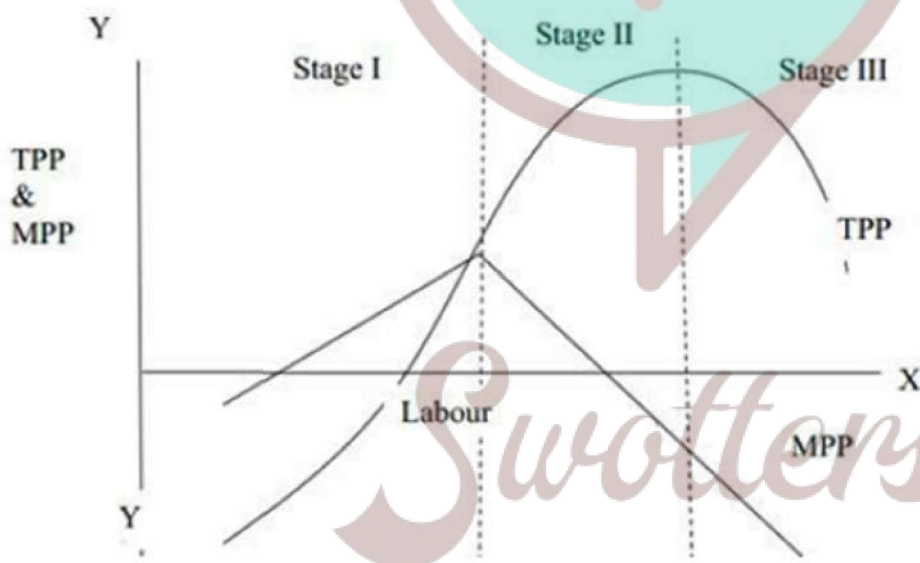
10. Ans.

1. If MR increases, TR increases at increasing rate.
2. If MR is constant, TR increases at constant rate.
3. If MR falls, TR increases at diminishing rate.

Long Answers:

1. Ans. Law of Variable Proportion states that if we go on using more and more units of a variable factor along with a fixed factor, the total output initially increases at an increasing rate, after that it increases at diminishing rate and finally it declines. It can be explained through the following three stages:

Units of labour	TPP	MPP	Stages of Production
1	2	2	Stage I
2	5	3	
3	9	4	
4	12	3	Stage II
5	14	2	
6	15	1	
7	15	0	Stage III



Stage 1:

- TPP increases at an increasing rate.
- MP increases and reaches at its maximum at the end of the stage.
- This is also called stage of increasing returns.

Stage 2:

- TPP increase but at diminishing rate.
- MPP starts decline but remains positive.
- This stage comes to an end when TPP is maximum and MPP is zero.

Stage 3:

- TP starts decline.
- MP becomes negative.
- This is also called stage of decreasing/negative returns.

2. Ans. The behaviour of total output in the long run time period is technically termed as Returns to Scale.

There are three possibilities:

1. Increasing Returns to Scale (IRS):- It occurs when a given proportionate increase in all

factor inputs (in some constant ratio) causes proportionately greater increase in output.

For example: Suppose there are only two inputs, labour (L) and Capital (K). Suppose Material downloaded from myCBSEguide.com.

3 / 3

1K + 1L produce 100 units and 2K + 2L produce 250 units. Input rises by 100% while the output rises by 150%.

2. Constant Returns to Scale (CRS):- It occurs when a given proportionate increase in all

factor inputs causes proportionately equal increase in output. At this stage, economies

of scale are counter balanced by diseconomies of scale. For example, suppose 1K+1L produce 100 units and 2K+2L produce 200 units, both inputs and TP rise in the same proportion.

3. Diminishing Returns to Scale (DRS):- It occurs when a given proportionate increase in

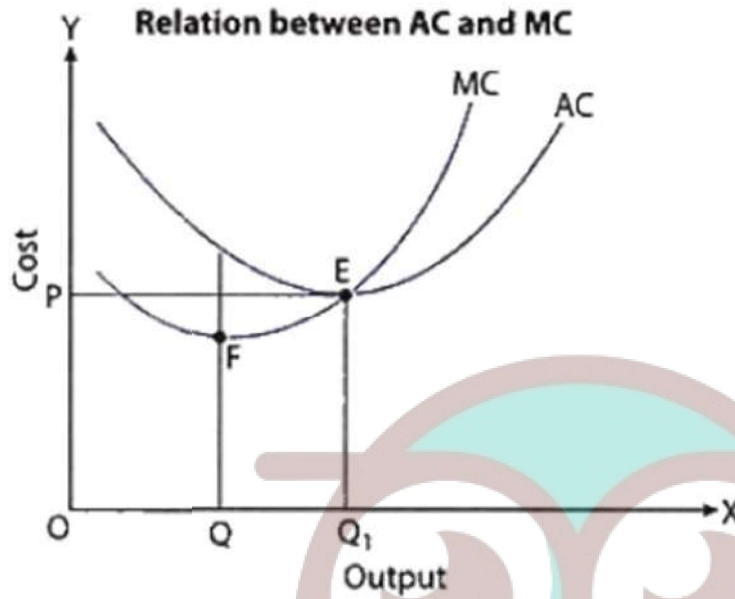
all factor inputs causes proportionately lesser increase in output.

For example, Suppose 1K+1L produce 100 units and 2K+2L produce 190 units, inputs rise by 100% while the output rise by 90%

3. Answer: The relation between Average Cost and Marginal Cost

- When Average Cost decreases, Marginal Cost declines faster than the Average Cost. So, that Marginal Cost curve remains lower than the Average Cost curve. This means Average Cost > Marginal Cost.
- When Average Cost increases, Marginal Cost rises faster than the Average Cost. So, that MC curve is above the Average Cost curve
- Marginal Cost curve intersects Average Cost curve from its lowest point. When the

average curve is minimum then Marginal Cost=Average Cost.



4. Ans. es = 5

P	Q	Δq	=	x-500
5	500	Δp	=	1
6	x	P	=	5
		Q	=	500

$$e = \frac{\Delta q}{\Delta p} \times \frac{p}{q}$$

$$5 = \frac{x-500}{1} \times \frac{5}{500}$$

$$5 = \frac{x-500}{100}$$

$$5 \times 100 = x - 500$$

$$500 = x - 500$$

$$500 + 500 = x$$

$$x = 1000 \text{ (units)}$$

Assertion Reason Answer:

1. B. Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of the Assertion (A).
2. C. Assertion (A) is true, but Reason (R) is false.