PART B Workbook [कार्य-पुस्तिका]

[Competency-based Learning through **Objective Questions**]

SET-1

Fill in the Blanks

Choose appropriate word/term and fill in the blank:

1. In the case of _____ period production function, factor ratio tends to change with change in the level of output. (short/long)
2. Average Product = _____. $\left(\frac{TP}{L} / \frac{MP}{L}\right)$
3. _____ can never be zero. (MP/AP)
4. Diminishing MP implies _____ returns to a factor. (negative/diminishing)
5. Relationship between physical inputs and physical output is called _____. (production function/technical function)
6. In case of long period production function, output is increased by increasing the application of _____. (variable factor only/all factors)
7. _____ MP implies that TP stops increasing. (Zero/Diminishing)
8. Marginal product curve is _____ in nature. (U-shaped/inverse U-shaped)
9. When MP is _____ AP, AP is at its highest point. (equal to/less than)
10. When total product begins to fall, marginal product turns _____. (positive/negative)

SET-2

Multiple Choice

Choose the correct option:

1. **Labour is an example of:**
   (*a*) a fixed factor
   (*b*) a variable factor
   (*c*) both (*a*) and (*b*)
   (*d*) none of these
2. **Production is a process of:**
   (*a*) consumption
   (*b*) income generation
   (*c*) value addition
   (*d*) value deduction
3. **Physical product refers to production as measured in terms of:**
   (*a*) physical units
   (*b*) monetary units
   (*c*) utility
   (*d*) value
4. **Total Product =**
   (*a*) Sum total of output of each unit of the variable factor
   (*b*) Sum total of marginal product corresponding to each unit of the variable factor
   (*c*) Per unit output of the variable factor
   (*d*) Both (*a*) and (*b*)
5. **Marginal product is calculated as** _____.
   (*a*) $MP = \frac{\Delta TP}{\Delta AP}$
   (*b*) $MP = TP_{n+1} - TP_{n-2}$
   (*c*) $MP = TP_n - TP_{n-1}$
   (*d*) $MP = \frac{\Delta AP}{\Delta L}$

6. **When MP is zero:**
(*a*) there is no addition to total product
(*b*) total product is maximum
(*c*) average product is zero
(*d*) both (*a*) and (*b*)

7. **When average product is at its maximum:**
(*a*) average product > marginal product
(*b*) average product < marginal product
(*c*) average product = marginal product
(*d*) marginal product is also at its maximum

8. **Average product curve is:**
(*a*) a positive straight line
(*b*) a negative straight line
(*c*) a U-shaped curve
(*d*) an inverse U-shaped curve

9. **Diminishing MP implies:**
(*a*) TP is increasing at an increasing rate
(*b*) TP is increasing at a diminishing rate
(*c*) TP is increasing at a constant rate
(*d*) TP stops increasing

10. **Short run is a period of time when a firm can increase its output:**
(*a*) only by increasing the application of a fixed factor
(*b*) only by increasing the application of a variable factor
(*c*) by increasing the application of all factors
(*d*) none of these

11. **Diminishing returns to a factor is due to _____.**
(*a*) fixity of the factor
(*b*) poor coordination between the factors
(*c*) better coordination between the factors
(*d*) both (*a*) and (*b*)

12. **Law of variable proportions can be postponed through:**
(*a*) new technology
(*b*) discovery of the substitute of fixed factor
(*c*) longer hours of work
(*d*) both (*a*) and (*b*)

13. **In the first stage of production:**
(*a*) total product is increasing at an increasing rate
(*b*) marginal product is decreasing
(*c*) marginal product is increasing
(*d*) both (*a*) and (*c*)

14. **When the input of labour is increased from 4 to 6 units, output increases from 50 to 80, then marginal product is:**
(*a*) 15
(*b*) 30
(*c*) 130
(*d*) 1.6

15. **When TP of 1st unit of labour is 10 and MP of 2nd unit of labour is 15, then TP of 2 units of labour is:**
(*a*) 10
(*b*) 15
(*c*) 20
(*d*) 25

SET-3

True or False

State whether the following statements are True or False:

1. Both average product and marginal product can be negative. (True/False)
2. MP becomes zero in the second phase of law of variable proportions. (True/False)
3. A rational producer never stops in second stage of production. (True/False)

4. Production function establishes the relationship between technology and inputs at a given point of time. (True/False)
5. TP increases at a diminishing rate in the stage of diminishing returns. (True/False)
6. Variable factors of production become fixed in the long run. (True/False)
7. MP cuts AP at its maximum point. (True/False)
8. MP is greater than AP when AP rises. (True/False)
9. Short run production function leads to returns to scale. (True/False)
10. Scale of output changes in case of long run production function. (True/False)

SET-4

True-False Alternatives

In the following questions (1-5), two statements are given. Read the statements carefully and choose the correct alternative among those given below:

Alternatives:

(*a*) Both the statements are true
(*b*) Both the statements are false
(*c*) Statement 1 is true and Statement 2 is false
(*d*) Statement 2 is true and Statement 1 is false

1. Statement 1 : AP rises when MP is above it and falls when MP is below it.
   Statement 2 : AP is at its minimum when AP = MP.
2. Statement 1 : When MP is zero, TP is also zero.
   Statement 2 : TP determines the shape of MP.
3. Statement 1 : Average product is the addition made to the total output when one more unit is produced.
   Statement 2 : Slope of a straight line MP curve is equal to zero.
4. Statement 1 : TP decreases when MP is negative.
   Statement 2 : Variable factors of production can be changed in the short run.
5. Statement 1 : Average product can rise even when MP is falling.
   Statement 2 : MP is the rate of change in TP.

SET-5

Choose the Correct Pair of Statements/Identify the Correct Sequence of Alternatives

1. **From the set of statements given in Column I and Column II, choose the correct pair of statements:**

Column I	Column II
A. Maximum TP	(*i*) Zero AP
B. Stage II of production	(*ii*) Negative MP
C. Short run production function	(*iii*) Scale of output remains constant
D. Constant MP	(*iv*) TP increases at an increasing rate

Alternatives:

(*a*) A—(*i*)
(*b*) B—(*ii*)
(*c*) C—(*iii*)
(*d*) D—(*iv*)

2. **Identify the correct sequence of alternatives given in Column II by matching them with respective items in Column I:**

Column I	Column II
A. Short run	(*i*) $\frac{\text{Total product}}{\text{Units of variable factor}}$
B. TP	(*ii*) TP increases at an increasing rate
C. Rising MP	(*iii*) ΣMP
D. AP	(*iv*) Only variable factors change

Alternatives:

(*a*) A—(*iv*), B—(*i*), C—(*ii*), D—(*iii*)
(*b*) A—(*iv*), B—(*iii*), C—(*ii*), D—(*i*)
(*c*) A—(*ii*), B—(*iv*), C—(*iii*), D—(*i*)
(*d*) A—(*iii*), B—(*i*), C—(*ii*), D—(*iv*)

SET-6

Assertion and Reasoning

In the following questions (1-5), a statement of Assertion (A) is followed by a statement of Reason (R). Choose the correct alternative among those given below:

Alternatives:

(*a*) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A)
(*b*) Both Assertion (A) and Reason (R) are true and Reason (R) is not the correct explanation of Assertion (A)
(*c*) Assertion (A) is true but Reason (R) is false
(*d*) Assertion (A) is false but Reason (R) is true

1. Assertion (A) : Long run production function is also called constant proportions type production function.
   Reason (R) : Factor ratio does not change with the change in the level of output in case of long run production function.
2. Assertion (A) : Diminishing MP implies negative returns to a factor.
   Reason (R) : Diminishing MP is observed in stage II of the production.
3. Assertion (A) : Per unit output of the variable factor is called marginal product.
   Reason (R) : TP falls when MP of the variable factor becomes negative.
4. Assertion (A) : Maximum production is attained when MP is zero.
   Reason (R) : MP is the slope of TP.
5. Assertion (A) : Marginal product can be zero as well as negative.
   Reason (R) : AP curve is generally U-shaped in nature.

ANSWERS

SET-1

1. *short*
2. $\frac{TP}{L}$
3. AP
4. diminishing
5. production function
6. all factors
7. Zero
8. inverse U-shaped
9. equal to
10. *negative*

SET-2

1. (*b*) **2.** (*c*) **3.** (*a*) **4.** (*d*) **5.** (*c*) **6.** (*d*) **7.** (*c*) **8.** (*d*) **9.** (*b*) **10.** (*b*)
11. (*d*) **12.** (*d*) **13.** (*d*) **14.** (*a*) **15.** (*d*)

SET-3

1. False **2.** True **3.** False **4.** False **5.** True **6.** False **7.** True **8.** True **9.** False **10.** True

SET-4

1. (*c*) **2.** (*b*) **3.** (*d*) **4.** (*a*) **5.** (*a*)

SET-5

1. (*c*) **2.** (*b*)

SET-6

1. (*a*) **2.** (*d*) **3.** (*d*) **4.** (*b*) **5.** (*c*)

SET-7