# ©゙"doubtnut 

## ECONOMICS

# BOOKS - RADHA BHUGANA ECONOMICS (HINGLISH) 

## CONCEPTS OF COST

Illustration

1. Complete the following table

| Output | 0 | 1 | 2 | 3 | 4 | 5 |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| TC (₹) | 30 | - | 68 | 84 | - | 125 |
| AVC (₹) | - | - | - | 18 | - | 19 |
| MC (₹) | - | 20 | - | - | 18 | - |
| AFC (₹) | - | - | - | - | - | 6 |

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2. Complete the following table

| Output (Units) | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ |
| :--- | :---: | :---: | :---: | :---: | :---: |
| AFC ₹) | 60 | - | 20 | - | 12 |
| $M C$ ₹) | 20 | - | - | 18 | - |
| $A C C$ (₹) | - | 19 | 18 | - | - |
| $A C$ ₹) | - | - | - | - | 31 |

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3. AC schedule of a firm is given. Calculate the firm's MC for (i) 6th and (ii) 7th units,

| Quantity Produced (Units) | 5 | 6 | 7 |
| :---: | :---: | :---: | :---: |
| Ayerage Cost (r) | 40 | 41 | 42 |

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4. From the following data on the cost of production of a firm, calculate :
(i) AFC and (ii) AVC of producing 9 units.


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5. From the following data on the cost of production of a firm, calculate
(i) AFC and (ii) AVC of producing 4 units and MC of the 4th unit.

| Output | 0 | 1 | 2 | 3 | 4 |
| :--- | :---: | :---: | :---: | :---: | :---: |
| TC (₹) | 80 | 102 | 122 | 140 | 156 |

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6. From the following data on the cost of production of a firm, calculate
(i) AFC and (ii) AVC of producing the units of given output.

| Units of Output | 0 | 3 | 5 |
| :--- | :---: | :---: | :---: |
| Total cost ₹ thousand) | 50 | 80 | 120 |

7. From the following data on the cost of production of a firm, calculate (i) AFC and (ii) AVC of producing three units.

| Units of Output | 0 | 3 |
| :--- | :---: | :---: |
| Total Cost (₹ thousand) | 51 | 96 |

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8. From the data given below, calculate (a) AFC (b) AVC (c ) MC.

| Output | 0 | 1 | 2 | 3 | 4 | 5 |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| IC (ᄌ) | 40 | 100 | 120 | 130 | 150 | 190 |

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9. From the following data for a firm, calculate (i) AFC and (ii) AVC and (iii) MC.

| Outpust (Units) | 0 | 1 | 2 |
| :--- | :---: | :---: | :---: |
| Total cost (K) | 75 | 95 | 110 |

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10. From the following data, estimate TFC, TVC and MC.

| Output (Units) | 0 | 1 | 2 | 3 |
| :--- | :---: | :---: | :---: | :---: |
| IC $(\mathrm{r})$ | 45 | 75 | 100 | 120 |

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11. Cost of funciton, of a firm is given below. Find out (i) TFC (ii) TVC (iii) AFC (iv) AVC (v) MC.

| Output (Units) | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Total Cost (₹) | 60 | 80 | 100 | 111 | 116 | 130 | 150 |

12. Calculate AVC and TVC with the help of the following table:

| Output (Units) | $M C$ <br> (Set I) <br> (₹) | MC (Set II) <br> (₹) | MC (Set III) <br> (₹) |
| :---: | :---: | :---: | :---: |
| 1 | 10 | 10 | 8 |
| 2 | 8 | 8 | 6 |
| 3 | 6 | 9 | 10 |

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13. From the following fuction of a firm given below, find out TFC, TVC and AVC.

| Output (Units) | 0 | 1 | 2 | 3 | 4 |
| :--- | :---: | :---: | :---: | :---: | :---: |
| TC (₹) | 50 | 70 | 90 | 105 | 120 |

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14. From the following information about a firm, find out:
(i) AFC of producing 3 units.
(ii) AVC of producing 4 units.
(iii) The least average cost (AC) level of output.
(iv) MC of producing 5th units.
(v) TVC of producing 6 units.

| Output (Units) | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Total cost ₹) | 150 | 300 | 420 | 600 | 790 | 1000 | 1260 |

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15. Total fixed cost is Rs. 90. Complete the following table.

| Output (Units) | $M C$ (₹) | TC (₹) | ATC (₹) |
| :---: | :---: | :---: | :---: |
| 1 | 10 |  |  |
| 2 | 20 |  |  |
| 3 | 15 |  |  |

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16. The table given below shows the total cost of a firm at different levels of output. Calculate marginal cost and average variable cost at each level
of output.

| Output (units) | 0 | 1 | 2 | 3 | 4 |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Total Cost (₹) | 100 | 160 | 212 | 280 | 356 |

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17. The fixed costs of a firm are ₹ 60 . Its marginal cost at different levels of output is given below. Calculate ATC and AVC.

| Output (units) | 1 | 2 | 3 | 4 |
| :--- | :---: | :---: | :---: | :---: |
| Marginal Cost (₹) | 30 | 26 | 28 | 32 |

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18. Complete the following table if AFC of one unit of producing is Rs. 60 .

| Output | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| TC (₹) | 90 | 105 | 115 | 120 | 135 | 160 | 200 | 260 |

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19. A firm's fixed cost is Rs. 2000. Compute TVC, AVC, TC and ATC from the following table.

| Output (Uliz) | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| MC (R) | 2000 | 1500 | 1200 | 1500 | 2000 | 2700 | 3500 |

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20. From the following table, calculate AVC of each given level of output.

|  | Output | 1 | 2 | 3 | 4 |
| :---: | :--- | :---: | :---: | :---: | :---: |
| $M C$ | Set I (₹) | 40 | 30 | 35 | 39 |
| $M C$ | Set II (₹) | 80 | 70 | 72 | 78 |
| $M C$ | Set III (₹) | 70 | 60 | 62 | 72 |

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21. Complete the following table :

| Output (Units) | NC (V) | AVC $(2)$ | MC ( ) |
| :---: | :---: | :---: | :---: |
| 1 | - | 12 | - |
| 2 | 20 | - | - |
| 3 | - | 10 | 10 |
| 4 | 40 | - | - |

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22. Calculate (a) Implicit cost (b) Explicit cost and (c) Econimic cost from the following:

## Paticulars

(i) Payment of salaries ..... 5000
(ii) Expenditure of raw material ..... 2000
(iii) Rent of owner occupied building ..... 1000
(iv) Donations to charitable trust ..... 500
(v) Estimated value of salary of owner who worked as manager ..... 200
(vi) Minimum profit (expected) ..... 400
(vii) Super Normal profit (estimated) ..... 700

1. Identify implicit or explicit cost from the information given below.
(i) An individual is both the owner and manager of the shop taken on rent.
(ii) A producer borrows money and starts a business. He himself looks after the business.
(iii) A manufacturer starts a business by investing his own savings and hiring the labour.
(iv) A producer produces foodgrains using a farm taken on rent and with the help of family members.

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2. Find out (a) explicit cost and (b) implicit cost from the following:

> Paticulars
(i) Investment in fixed assets 20
(ii) Borrowing at $12 \%$ interest per annum
(iii) Wages paid during the year
(iv) Annual rental value of the owner's factory building
(v) Annual depreciation 10
(vi) Estimated annual value of the managment services of the owner 241

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3. A firm produces 200 units of good X . Actual money spent on producing this good is Rs. 2000. The owner supplied some inputs worth Rs. 800 for which he does not receive any payment. Economic cost calculated to produce this commodity is Rs. 3000 . How do you account for the difference in costs.

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4. Classify the following between fixed cost or variable cost:

Rent, raw material charges, interest, depreciation, wages of temporary workers, salaries of permanent employees, transporation charges, license fees, minimum telephone bill, telephone bill over and above minimum bill.

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## Multiple Choice Question

1. When $M C$ is less than $A C$
A. $A C$ rises
B. AC falls
C. $A C$ is minimum
D. AC is constant

## Answer: B

2. At zero level of output TC is equal to
A. TVC
B. AVC
C. AFC
D. TFC

## Answer: D

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3. Area under marginal cost curve is
A. TVC
B. TFC
C. AFC
D. AVC

## Answer: A

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4. Example of fixed cost
A. cost of raw material
B. cost of fuel
C. depreciation of machinery
D. all of these

## Answer: C

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A. minimum point
B. maximum point
C. rising portion
D. none of these

## Answer: A

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6. Identify the variable cost from the following :
A. Expenditure of raw materials
B. Expenditure on power
C. Expenditure on daily wages
D. all of these

## Answer: D

7. The average fixed cost at 4 units of output is $₹ 20$. Average variable cost at 5 units of output is $₹ 40$. Average cost of producing 5 units is : (Choose the correct alternative)
A. Rs. 20
B. Rs. 40
C. Rs. 56
D. Rs. 60

## Answer: C

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8. When $A C$ falls, $M C$ :
A. falls
B. rises
C. initially falls, then rises
D. none of these

## Answer: C

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## 9. MC curve cuts At minimum

A. AC curve
B. AVC curve
C. both (a) and (b)
D. neither (a) or (b)

## Answer: C

10. TC of a firm increases by Rs. 250 when its output level increases from 50 units to 60 units. MC of the firm:
A. Rs. 5
B. Rs. 4.16
C. Rs. 25
D. none of these

## Answer: C

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11. The total cost at 5 units of output is Rs. 30. The fixed cost is Rs. 5. The average variable cost at 5 units of output is :
A. Rs. 25
B. Rs. 6
C. Rs. 5
D. Rs. 1

## Answer: C

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12. If a firm's production department data says that the TVC for producing 8 units and 10 units of output is $₹ 2,500$ and $₹ 3,000$ respectively, marginal cost of $10^{\text {th }}$ unit will be :
A. Rs. 100
B. Rs. 150
C. Rs. 500
D. Rs. 250

## Answer: D

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13. The information about the total cost for a firm is given below :

| Output (units) | 0 | 1 | 2 | 3 | 4 | 5 |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Total Cost (₹) | 150 | 155 | 170 | 192 | 228 | 275 |

From this information find out : (a) Average fixed cost of producing 3 units, (b) Marginal cost of producing $4^{\text {th }}$ unit, (c ) Output level when marginal cost is greatest, (d) Total variable cost of producing 5 units, (e) Average variable cost of producing 3 units, (f) Averge total of producing 4 units.
A. Rs. 140
B. Rs. 100
C. Rs. 120
D. Rs. 300

## Answer: A

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14. The area under the given curve is

A. TC
B. TVC
C. AC
D. AVC

## Answer: B

Objective Type Questions

1. Define cost of production

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2. Define cost function

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3. Define money costs

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4. Define explicit cost
5. What is implicit cost?

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6. Define real cost

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7. Define private cost.

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8. Define social cost

## - View Text Solution

9. What is opportunity cost?
10. Define short run costs

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11. Define fixed cost.

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12. Define variable cost.

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13. What is total cost?

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14. Average Fixed Cost

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15. What is average variable cost?

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16. Define average cost

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17. Marginal Cost

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Conceptual Questions

1. What is relationship between AC and MC ?

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2. Give the relationship between AVC and MC.

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3. What is the relationship between TC and MC?

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4. What is the relationship between TVC and MC?

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5. AFC curve is a rectangular hyperbola curve. True/False

## Higher Order Thinking Skills

1. Why is total variable cost curve inverse S -shaped?

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2. What is Average Fixed Cost of a firm? Why is an Average Fixed Cost Curve a rectangular Hyperbola? Explain with help of a diagram.

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3. Why does the minimum point of AC curve fall towards right of AVC curve ?
4. Why does the SMC curve cut the AVC curve at the minimum point of the AVC curve?

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5. Caculate TFC, if AC and AVC are Rs. 72 and Rs. 48 repectively, at output of 20 units.

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6. "The gap between AC and AVC keeps on decreasing with rise in output, but they never meet each other". Comment.

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7. "MC can be calculated both from total cost and total variable cost and is not affected by total fixed cost". Discuss
8. Do the ATC and AVC curves intersect? Give reasons.

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9. Why does SMC curve cut the AC at its minimum?

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10. Derive Supply Curve from Rising Part of Marginal Cost (MC) Curve

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## Value Based Questions

1. A chemical fertiliser manufacturing company estimated its annual cost of production to be Rs. 20 lakh. The cost included expenditure incurred
on factor and non factor inputs. However industrial waste is causing water pollution for which no provision is made by the company. comment.

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2. A company over utilising its resources is incurring losses as it is producing on rising part of average cost curve. The company needs suggestion as to how can it reduce lossess? Use diagram.

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3. An economiat claims that if cost is zero, production is also zero but if production is zero, the cost may not be zero. Defend or refute his claim.

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## Quidelines To Ncert Question

1. Briefly explain the concept of cost function.

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2. What are total fixed cost, total variable cost and total cost of a firm? How are they related?

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3. Can there be some fixed cost in the long run? If not, why?

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4. What does average fixed cost curve look like? Why does it look so?

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5. What do the short run marginal cost, average variable cost and average cost curves look like? Why?

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6. Why is short run marginal cost curve 'U'-shaped?

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7. What do long run marginal cost and average cost curves look like?

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8. Why does the SMC curve cut the AVC curve at the minimum point of the AVC curve?
9. Where does SMC curve cut AC? Give reasons to support your answer.

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Very Short Answer

1. Define cost
or

What does cost mean in economics?

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2. Marginal Cost

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3. Give two examples of fixed cost of a firm.
4. Can $A C$ be more than $M C$ when $A C$ is rising?

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5. How is MC derived from TVC?

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6. Express average total cost in terms of average fixed cost and average variable costs.

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7. Define fixed costs.
8. Define variable costs.

## - View Text Solution

9. Draw ATC, AVC and MC curves in a single diagram or

What do the SMC, AVC and SAC curves look like?

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10. When $A C$ is rising, what is the relation between $M C$ and $A C$ ?

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11. Give one example each of fixed cost and variable cost?
12. Why is average total cost greater than average variable cost?

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13. How does average fixed cost behaves as output is increased?

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14. Name the cost which does not change with change in output

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15. What is the relation between AVC and ATC if TFC is zero.
16. What happens to the difference between ATC and AVC as production in increased?

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17. If it is given that the total variable cost for producing 15 units of output is $₹ 3,000$ and for 16 units is 3,500 . Find the value of Marginal Cost.

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## Short Answers

1. Relationship Between Tc And Mc

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2. Distinguish between fixed and variable costs

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3. Explain the meaning of opportunity cost with an example

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4. Explain the relationship between marginal cost and average cost of a firm with the help of appropriate diagram

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5. Explain the relationship between average total cost curve, average variable cost curve and marginal cost diagram.

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6. Given the total fixed cost is Rs. 90 , complete the following table.

| Output <br> (Inits) | Average Variable | Total Cost | Marginal cost |
| :--- | :---: | :---: | :---: |
| 1 | $\operatorname{Cos}(\bar{z})$ | (₹) | (₹) |
| 2 | 20 |  |  |
| 3 | 15 |  |  |
| 20 |  |  |  |

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7. Given the total fixed cost is Rs. 30 , complete the following table.

| Output <br> (Units) | Average Variable <br> $\operatorname{Cost}(₹)$ | Total Cost | Marginal cost <br> (₹) |
| :---: | :---: | :---: | :---: |
| 1 | 20 |  |  |
| 2 | 15 |  |  |
| 3 | 20 |  |  |

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8. Why is short run marginal cost curve 'U'-shaped?

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9. What changes will take place in average cost if marginal cost is rising?

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10. Explain the relationship between marginal cost and average variable cost with the help of a diagram.

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11. Complete the following table:

| Output <br> (Units ) | Total Variable <br> Cost (₹) | Average Variable <br> Cost (₹) | Marginal Cost (₹) |
| :---: | :---: | :---: | :---: |
| 1 | 10 | - |  |
| - | - | 8 | 6 |
| 3 | 27 | - | - |
| - | - | 10 | 13 |

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12. Complete the following table:

| Output <br> (Units | Total Variable <br> Cost (₹) | Average Variable <br> Cost (₹) | Marginal Cost (₹) |
| :---: | :---: | :---: | :---: |
| 1 | - | 12 | - |
| 2 | 20 | - | - |
| - | - | 10 | 10 |
| 4 | 40 | - | - |

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13. Distinguish between
(i) fixed cost and variable cost giving examples and
(ii) average cost and marginal cost giving an example.
14. Complete the following table

| Output <br> (Units) | Average Fixed <br> Cost (₹) | Marginal Cost <br> (₹) | Total Cost <br> (₹) |
| :---: | :---: | :---: | :---: |
| 1 | - | - | 72 |
| 2 | - | 10 | - |
| 3 | 20 | 8 | - |
| 4 | - | - | 99 |
| 5 | 12 | 10 | - |

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15. Complete the following table

| Output <br> (Units) | Total Cost <br> (₹) | Average Variable Cost <br> (₹) | Marginal Cost <br> (₹) |
| :---: | :---: | :---: | :---: |
| 1 | 90 | - | 30 |
| 2 | - | 27 | - |
| 3 | - | - | 27 |
| 4 | 180 | 30 | - |

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16. State the distinction between explicit cost and implicit cost. Give an example of each

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17. Define marginal cost. Explain its relations with average variable cost.

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18. Define variable cost. Explain the behaviour of total variable cost as increases

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19. Giving examples, explain the meaning of cost of cost in economics.

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20. Why does MC curve cut the AC curve at its minimum?

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21. State the relation between total cost and marginal cost.

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22. What is the behaviour of average fixed cost as output is increased.

Why is it so?

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23. What is the behaviour of (a) Average fixed cost and (b) Average variable cost as more and more units of a good are produced?

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24. Giving reason, explain whether true or false : the difference between average cost and average variable cost is always constant.

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25. Define fixed cost. Give an example. Explain with reason the behaviour of AFC as output is increased.

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## Long Answer

1. Explain the relationship between marginal cost and average cost of a firm with the help of appropriate diagram.

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2. Why does the difference between ATC and AVC decrease with an increase in the level of output? Can these two be equal at some level of output? Explain.

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3. Distinguish between fixed costs and variable costs. Explain the relationship between marginal cost and average cost.

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4. Explain with the help of suitable table and diagram that total cost is the sum of fixed cost and variable cost.

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5. State whether True or False. With increase in level of output, AFC goes on falling till it reaches zero

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## Unsolved Numericals

1. Complete the following table

| Output (Units) | 1 | 2 | 3 | 4 | 5 |
| :--- | :---: | :---: | :---: | :---: | :---: |
| MC (₹) | 60 | - | - | 54 | - |
| AVC (₹) | - | - | 54 | - | 57 |
| TC (₹) | 120 | 174 | - | - | 345 |
| AFC (₹) | - | - | - | 15 | - |

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2. Complete the following table

| Output (Units) | 0 | 1 | 2 | 3 | 4 | 5 |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| TC (₹) | 30 | - | 78 | - | - | 150 |
| AVC (₹) | - | - | - | 23 | - | - |
| $M C$ (₹) | - | 25 | - | - | 23 | - |
| AFC (₹) | - | 30 | - | 10 | - | 6 |

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3. Calculate TVC and AVC from the following table :

| Output (units) | 0 | 1 | 2 | 3 |
| :--- | :---: | :---: | :---: | :---: |
| TC (₹) | 50 | 150 | 230 | 290 |

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4. Calculate total variable cost and marginal cost from the following cost schedule of a firm whose total fixed costs are Rs. 12:

| Output (Units) | 1 | 2 | 3 | 4 |
| :--- | :---: | :---: | :---: | :---: |
| TC (Y) | 20 | 26 | 31 | 38 |

5. Calculate Marginal Cost and Total Cost from the following Cost Schedule of a firm whose Total Fixed costs are ₹15:

| Output (units) | 1 | 2 | 3 | 4 |
| :--- | :---: | :---: | :---: | :---: |
| Total Variable Cost $(₹)$ | 10 | 19 | 29 | 40 |

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6. Given that the fixed cost is Rs. 12, calculate TVC, TC and AVC from the following :

| Output (Units) | 1 | 2 | 3 | 4 | 5 | 6 |
| :--- | :--- | :--- | :--- | :--- | :--- | :---: |
| MC (₹) | 9 | 7 | 2 | 4 | 8 | 12 |

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7. From the following table, calculate total cost and average variable cost at each given level of output:

| Output (Units) | AFC | MC |
| :---: | :---: | :---: |
| 1 | 60 | 32 |
| 2 | 30 | 30 |
| 3 | 20 | 28 |
| 4 | 15 | 30 |
| 5 | 12 | 35 |
| 6 | 10 | 43 |

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8. Estimate total cost, given that TFC at 0 level of output is ₹ 60 .

| Output (units) | 0 | 1 | 2 | 3 | 4 | 5 |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| $\operatorname{TVC}(₹)$ | 0 | 16 | 22 | 29 | 42 | 48 |

