

| What is Cost of production | In order to produce goods service, a firm uses non factor inputs and factors of production, these are inputs. The Total expenditure incurred on these inputs are called cost of production. |
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| Cost Function | Cost function refers to the mathematical relation between cost of a product and the various determinants of costs. In a cost function, the dependent variable is unit cost or total cost and the independent variables are the price of a factor, the size of the output or any other relevant phenomenon which has a bearing on cost, such as technology, level of capacity utilization, efficiency and time period under consideration. $\begin{gathered} C=f(P) \\ P=\text { Production, } C=\text { Cost } \end{gathered}$ |
| Theories of Cost |  |

Explain the Short Run Cost with details OR
What do you meant by Total, Average and Marginal Cost?

| Meaning | Short run cost related to short run productivity. In short run atleast one factor is variable others are fixed. In short run a producer can increase his productivity up to his production capacity |
| :---: | :---: |
| Types of Short Run Cost | There are three types of short run cost: - <br> (i) Total Cost <br> (ii) Average Cost <br> (iii) Marginal Cost |
| Total Cost | Total cost of production is the sum of all expenditure incurred on producing a given volume of output and total cost is the sum of fixed cost and variable cost. $\begin{aligned} \mathrm{TC} & =\mathrm{FC}+\mathrm{VC} \\ \mathrm{TC} & =\sum \mathrm{MC}+\mathrm{FC} \\ \mathrm{TC} & =\mathrm{AC} \times \mathrm{Qty} \end{aligned}$ <br> 1. Fixed or Supplementary or Indirect Cost or Inescapable cost or Un Controllable Cost or General Cost : are cost which do not change with change in the qty. of output. Fixed cost remains fixed at every level of output. Rent of building, wages of permanent employees, interest on fixed capital, licence fees are example of fixed cost. |




|  | $\Rightarrow$ Average Fixed Cost: is the per unit fixed cost of a commodity. <br> $\Rightarrow$ Average Variable Cost: is the per unit variable cost of a commodity. |
| :---: | :---: |
| Marginal Cost | Marginal Cost is the change in total cost due to production of one more or one less unit of a commodity. MC is the additional cost of producing an additional unit or one more unit of output. For example, if the total cost of producing 10 pens is Rs. 100 and if it goes up to Rs. 108 by producing 11 pens, in this case MC is Rs. 8. Which is an addition to the total, when an additional unit is produced. MC is related to variable cost and not to fixed cost. Since fixed cost remains the same in short period. MC curve falls initially when production increases but after a point it rises rapidly which is due to operation of law of variable proportions. |



## Why does Short Run Average Cost Curve U Shaped


$\mathrm{AFC}+\mathrm{AVC}=\mathrm{AC}$

1. Basis of AFC and AVC: Average cost is the aggregate of average fixed cost and average variable cost. As the production increases, average fixed cost gives an falls in the initial stages of production, average variable cost also goes on falling. Consequently, the aggregate of these two costs, average cost also fall and reaches its minimum points as is shown in fig. ( z ) up to ' A ' average cost curve is falling it is at its minimum point ' $A$ '. in this situation the firm is making full use of its product capacity. The firm is having optimum output. Optimum output refers to that level of output which corresponds to the lowest per unit cost of production as at point ' A ' in fig ( z ). If firm produces beyond this point, no doubt, average fixed cost will continue to fall but average variable cost will begin to rise. Rising average variable cost makes the average cost to rise also. It is so because after reaching its minimum level, rate of increase is average variable cost is much more than rate of decrease is average fixed cost. The net effect is reflected in the upward rising AC curve. In this way average cost curve being the aggregate of average fixed cost and average variable cost, initially falls and having reached its minimum begins to rise.
2. Basis of Law of variable proportions: Initially, when variable factors are combined with a fixed factor, then the fixed factor is more efficiently used consequently, AC begins to diminish. After the fixed factors have been optimally used, production increases at a diminishing rate. This signifies the operation of law of Diminishing return to a factor or law of increasing costs. That is why AC curve begin to rise.

Explain the relationship between Average Cost and Marginal Cost


| Explain the Long Term Cost with details |  |
| :--- | :--- |
| Meaning | The long run is the period of time in which all inputs are variable. The firm has |
|  | -sufficient time to adjust its use of all inputs to produce output in the least costly |
| way. In other words, there is another aspect of long run for example it is a |  |
| planning horizon. The long run refers to the fact that producers can plan ahead |  |
| and choose many aspects of the short run, in which they will operate in future. In |  |
| other words, the producer operates in the short run and plans in the long run. |  |
| There are three types of long term cost: - |  |
| - long run total cost |  |
| - long run average cost |  |
| - long run marginal cost |  |


| 1. Long run |  |
| :--- | :--- |
| total Cost | In long run all factors are variable. All types of cost are variable. The long run total <br> cost is the minimum cost at which each level of output can be produced. In the long <br> run firm can produce a given level of output at the minimum cost since it has <br> sufficient time (a) to select the optimum plant size (b) to select the least cost factor <br> proportion. This means that the long term total cost is always less than or equal to <br> short run total cost but it is never more than short run total cost LTC $\leq$ STC. |
| 2. Long run |  |
| Average |  |
| Cost or |  |
| Envelope |  |
| Curve |  |$\quad$| If we are dividing the total long run cost by qty. of output, then result will be long run |
| :--- |
| average cost. Long run average cost refers to minimum possible per unit cost of |
| producing different quantities of output in the long period. |
| LRAC = LRTC / Qty. |
| 2. long run, all costs are variable. |


|  | - Long term average cost curve as Envelope curve: - <br> It is known as "envelope curve" because it encloses all short run average cost curves. It implies that average cost in the long run cannot exceed short run average cost. <br> n fig. ( x ) long run average cost has been shown. Long run average cost curve is tangent to each short run average cost curve at some point. To the left of minimum point ' M ' of long run average cost. This point of tangency is on the falling part of short run average cost curve. The reason being that up to minimum point $M$, the slope of long run average cost curve is reducing. As such the slope of short run average cost curve will be negative because at the point of tangency slopes of both the curves are equal. To the right of minimum point $M$ the point of tangency will be an the rising part of short run average cost curves. It is because to the right of point M long run average cost curve is rising. At point M long run minimum average cost and short run minimum average cost are equal to each other. <br> - Long run average cost curve as Planning curve: - <br> Long run average cost curve is also called planning curve with the help of this curve a firm can plan as to which plant it should use to produce different quantities of output, so that production is obtained at the minimum cost. |
| :---: | :---: |
| 3. Long run marginal cost | Definition: Long run marginal cost is the addition to total cost attributable to an additional unit of output when all inputs are optimally adjusted. <br> Meaning: Long run marginal cost is the change in long run total cost due to produce of one more or one less unit of a commodity. |


| Meaning | Long run average cost curve is $U$ shaped. At first LAC curve slopes downward, that is as the production increases, LAC goes on falling. After some time, it becomes constant. After a given amount of output LAC begins to rise. long run average cost curve is $U$ shaped because of Economies and Diseconomies of scale of production. <br> Economies or Diseconomies arising out of large-scale production can be grouped into two categories: - <br> - Internal Economies or Diseconomies <br> - External Economies or Diseconomies |
| :---: | :---: |
| Internal <br> Economies OR <br> Diseconomies | Internal economies arise purely due to endogenous factors relating to efficiency of the entrepreneur or his managerial talents or the type of machinery used or the marketing strategy adopted. These economies arise within the firm and are available exclusively to the expanding firm. <br> - Technical Economies and Diseconomies <br> - Managerial Economies and Diseconomies <br> - Commercial Economies and Diseconomies <br> - Financial Economies and Diseconomies <br> - Risk bearing Economies and Diseconomies |
| External Economies OR Diseconomies | External economies and diseconomies are those economies and diseconomies which accrue to firms as a result of expansion in the output of the whole industry and they are not dependent on the output level of individual firms. They are external in the sense that they accrue to firms not out of their internal situation but from outside i.e. due to expansion of the industry. <br> - Cheaper raw materials and capital equipment <br> - Technological external economies <br> - Development of skilled Tabour <br> - Growth of ancillary industries <br> - Better transportation and marketing facilities <br> - Economies of Information |

Explain the Relationship between Long Run Average Costs Short Term Average Cost Curves



- SAC curve represents the average costs with reference to single plant, whereas LAC curve represents the average cost with reference to several plants.
- SAC is $U$ shaped but LAC is relatively flatter.
- LAC cannot be more than SAC it is because LAC curve is tangent to SAC curve. LAC curve never cuts SAC curve.

$\left.$| Types of Cost | 1. <br> Money cost <br> or nominal <br> cost |
| :--- | :--- | | Money cost of production refer to the expenditure on hiring or buying of inputs |
| :--- |
| for producing a given output. Thus the money spent on payment of wages and |
| salaries of employees of the firm, payment for raw material, payment of fuel |
| lighting, payment of Int. as capital employed, payments for insurance against |
| risk are all parts of the firm money costs of production. | \right\rvert\, |  | Real cost refers to the pain, discomfort and sacrifice incurred in supplying the <br> factors of production by their owners. Since elements like pain, discomfort and <br> scarifies are subjective, so it is difficult to measure the real costs. For example, if <br> a carpenter has to work for eight hour to produce a table then this labour for <br> eight hours will be the real cost of the table. |
| :--- | :--- | :--- |
| 2. | Real Cost |


|  | - When trees are felled by a private forest contractor, the social cost to the <br> community may be in terms of floods, soil erasion, loss of natural sanctuary <br> for animals. <br> Many industrial chemical plants discharge their effluents into a river nearby. <br> This is not only kills the fish in the river but also increases the cost of putting <br> water treatment plants to municipalities. |
| :--- | :--- |
| 9. Incremental |  |
| costs and |  |
| Sunk costs |  | | Theoretically, incremental costs are related to the concept of marginal cost. |
| :--- |
| Incremental cost refers to the additional cost incurred by a firm as result of a |
| business decision. For example, incremental costs will have to be incurred by a |
| firm when it makes a decision to change its product line, replace worn out |
| machinery, buy a new production facility or acquire a new set of clients. Sunk |
| costs refer to those costs which are already incurred once and for all and cannot |
| be recovered. They are based on past commitments and cannot be revised or |
| reversed if the firm wishes to do so. Examples of sunk costs are expenses |
| incurred on advertising, R \& D, specialised equipments and fixed facilities such |
| as railway line. Sunk costs act as an important barrier to entry of firms into |
| business. |

## MULTIPLE CHOICE QUESTIONS

Q.1. Which cost increases continuously with the increase in production? [SM-17]
(a) Average cost.
(b) Marginal cost.
(c) Fixed cost.
(d) Variable cost.
Q.2. Total cost in the short run is classified into fixed costs and variable costs. Which one of the following is a variable cost? [SM-19]
(a) Cost of raw materials.
(b) Cost of equipment.
(c) Interest payment on past borrowings.
(d) Payment of rent on building.
Q.3. In the short run, when the output of a firm increases, its average fixed cost: [SM-20]
(a) Increases.
(b) Decreases.
(c) Remains constant.
(d) First declines and then rises.
Q.4. With which of the following is the concept of marginal cost closely related ?[SM-23]
(a) Variable cost.
(b) Fixed cost
(c) Opportunity cost.
(d) Economic cost
Q.5. Which of the following is not a determinant of the firm's cost function? [SM-33]
(a) The production function.
(b) The price of labour.
(c) Taxes.
(d) The price of the firm's output.
Q.6. The efficient scale of production is the quantity of output that minimizes. [SM-58]
(a) Average fixed cost.
(b) Average total cost.
(c) Average variable cost.
(d) Marginal cost.
Q.7. Which of the following statements is false in respect of fixed cost of a firm?[SM-65]
(a) As the fixed inputs for a firm cannot be changed in the short run, the TFC are constant, except when the prices of the fixed inputs change.
(b) TFC continue to exist even when production is stopped in the short run, but they exist in the long run even when production is not stopped.
(c) Total Fixed Costs (TFC) can be defined as the total sum of the costs of all the fixed inputs associated with production in the short run.
(d) In the short run, a firm's fixed cost cannot be escaped even when production is stopped
Q.8. When marginal costs are below average total costs, [SM-69]
(a) Average fixed costs are rising.
(b) Average toatal costs are falling.
(c) Average total costs are rising.
(d) Average total costs are minimized.
Q.9. Identify the two cost curves which start from the same point on the $\mathbf{Y}$-axis:
(a) TVC and TFC
(b) TFC and AVC
(c) TFC and TC
(d) TFC and AFC
Q.10. The marginal cost for a firm of producing the 9 th unit of output is Rs. 20. Average cost at the same level of output is Rs. 15. Which of the following must be true? [SM-74]
(a) Marginal cost and average cost are both falling.
(b) Marginal cost and average cost are both rising.
(c) Marginal cost is rising and average cost is falling
(d) It is impossible to tell if either of the curves are rising or falling
Q.11. "Salary of Permanent staff" is which type of cost?
(a) Variable and Implicit Cost
(b) Fixed and Implicit Cost
(c) Fixed and Explicit Cost
(d) Variable and Explicit Cost
Q.12. The cost curve, which is inversely $S$-shaped is:
(a) Average Cost Curve
(b) Total Fixed Cost Curve
(c) Total Variable Cost Curve
(d) Marginal Cost Curve
Q.13. In figure below, possible reason why the average variable cost curve approaches the average total cost curve as output rises is:[SM-78]

(a) Fixed costs are falling while total costs are rising at rising output.
(b) Total costs are rising and average costs are also rising.
(c) Marginal costs are above average variable costs as output rises,
(d) Average fixed costs are falling as output rises.
Q.14. Marginal cost changes due to changes in $\qquad$
(a) Total cost (b) Average cost
(c) Variable cost
(d) Quantity of output
Q.15. Which of the following statements is correct?
(a) Fixed costs vary with change in output.
(b) If we add total variable cost and total fixed cost we get the average cost.
(c) Marginal cost is the result of total cost divided by number of units produced.
(d) Total cost is obtained by adding up the fixed cost and total variable cost.
Q.16. Which curve is not affected by fixed cost?
(a) MC Curve
(b) TC Curve
(c) AC Curve
(d) AFC Curve
Q.17. The costs which are prime cost and can be changed with changes in level of output are called :
(a) Fixed cost
(b) Variable cost
(c) Explicit cost
(d) Implicit cost.
Q.18. $\quad \mathbf{A C}$ is obtained by dividing $\mathbf{T C}$ by the level of :
(a) Labour
(b) Output
(c) Land
(d) Technology
Q.19. Identify the fixed cost from the following:
(a) Labour Cost
(b) Electricity bill
(c) salary of watchman
(d) Cost of raw materials
Q.20. Why the average fixed cost curve does not touch the output axis
(a) Because AFC cannot be negative
(b) Because AFC cannot be zero
(c) Because AFC cannot be less than one
(d) None of these.
Q.21. Variable cost includes the cost of
(a) Hiring the building for the factory
(b) Purchasing heavy machines
(c) Paying the manager of the factory
(d) Paying the labourers
Q.22. The difference between the average total cost and average fixed cost shows
(a) Normal profits
(b) Implicit costs
(c) Average variable cost
(d) Opportunity costs
Q.23. Any expansion in output by a firm in the short period will always reduce the
(a) Average variable cost
(b) Ayerage fixed cost
(c) Both average fixed and variable costs
(d) None of the above.
Q.24. The addition or increment to the total cost inyolved in expanding or contracting output by one unit is called
(a) Fixed cost per unit
(b) Variable cost per unit
(c) Total cost per unit
(d) Marginal cost.
Q.25. When the law of diminishing returns begins to operate the TVC curve begins to
(a) Fall at an increasing rate
(b) Rise at a decreasing rate
(c) Fallat a decreasing rate
(d) Rise at an increasing rate
Q.26. Diminishing marginal returns imply:
(a) Decreasing average variable cost
(b) Decreasing marginal cost
(c) Increasing Magrinal cost
(d) Decreasing average fixed cost
Q.27. The difference between average total cost and average variable cost:
(a) Is constant
(b) Is total fixed cost
(c) Gets narrow as output decreases
(d) Is the average fixed cost.
Q.28. Average fixed cost can be obtained through: $(\mathbf{N}, 06)(\mathrm{d})$
(a) $\mathrm{AFC}=\frac{T F C}{T S}$
(b) $\mathrm{AFC}=\frac{E C}{T U}$
(c) $\mathrm{AFC}=\frac{T C}{P C}$
(d) $\mathrm{AFC}=\frac{T F C}{T \text { Unit }}$
Q.29. A firm's average fixed cost is Rs. 20 at 6 units of output what will it be at 4 units of output?(F,07) [SM-42]
(a) Rs. 60
(b) Rs. 30
(c) Rs. 40
(d) Rs. 20
Q.30. If total cost at 10 units is Rs. 600 and Rs. 640 for 11th unit. The marginal cost of 11th unit is:M,07)
(a) Rs. 20
(b) Rs. 30
(c) Rs. 40
(d) Rs. 50
Q.31. What is the total cost of production of 20 units, if fixed cost is $\mathbf{R s}$. $\mathbf{5 , 0 0 0}$ and variable cost is Rs. 2/-? $(\mathrm{A}, 07)$
(a) 54,00
(b) 5040
(c) 4960
(d) 5020
Q.32. A firm's average fixed cost is Rs. 40 at 12 units. What will be the average fixed cost at 8 units:(F,08)
(a) Rs. 60
(b) Rs. 70
(c) Rs. 90
(d) Rs. 80
Q.33. A firm producing 7 units of output has an average total cost of Rs. 150 and has to pay Rs. 350 to its fixed factors of production. What is Average variable cost?(J,08)[SM-40]
(a) Rs. 200
(b) Rs. 50
(c) Rs. 300
(d) Rs. 100
Q.34. A firm's average fixed cost is Rs. 20 at 6 units of output. What will it be at 3 units of output? $(J, 08)$
(a) Rs. 60
(b) Rs. 30
(c) Rs. 40
(d) Rs. 20
Q.35. OUTPUT (Units)

0
1
2

3

TOTAL COST( $\mathrm{D}, 08$ )
30
40
50
60
Find Average Fixed Cost of 3 units
(a) 10
(b) 30
(c) 65
(d) 60
Q.36. From the following details, find out the average variable cost of 10 units: $(J, 09)$ OUTPUT: $0 \quad 1020$ Total cost: Rs. 200 Rs. 400 Rs. 800
(a) Rs. 40
(b) Rs. 20
(c) Rs. 200
(d) Rs. 400
Q.37. The total cost incurred for 10 units is Rs 400 and 20 units is Rs.800. Find the marginal cost. (J,09)
(a) Rs. 400
(b) Rs. 40
(c) Rs. 200
(d) Rs. 20
Q.38. Which one of the following is correct? $(\mathrm{D}, 09)$
(a) AFC = AVC + ATC
(b) ATC = AFC - AVC
(c) $\mathrm{AVC}=\mathrm{AFC}+\mathrm{ATC}$
(d) AFC = ATC - AVC.
Q.39. If variable cost of 5 units of output is 100 and fixed cost is $\mathbf{4 0}$. Find average cost at 5 units of output.
(a) 8
(b) 100
(c) 108
(d) 540
Q.40. Find AFC of 3 units: $(D, 09)$

| Unit Cost | 0 | 1 | 2 | 3 |
| :--- | :--- | :--- | :--- | :--- |

$\begin{array}{lllll}\text { Total cost } & 15 & 25 & 35 & 45\end{array}$
(a) 5
(b) 10
(c)15
(d) 30
Q.41. What will be the TVC if we produce 2 unit? $(J, 10)$
$\begin{array}{llll}\text { Unit } & 0 & 1 & 2\end{array}$
$\begin{array}{llll}\text { Total Cost } & 20 & 37 & 50\end{array}$
(a) 15
(b) 05
(c) 17
(d) 30
Q.42. The total cost of production of $\mathbf{1 0}$ units is $\mathbf{R s}$. 200. When production is increased to 20 units its total cost becomes Rs. 600. What will be its marginal cost.(J,10)
(a) 400
(b) 40
(c) 4
(d) 30
$\begin{array}{lllllll}\text { Q.43. Units } & 0 & 1 & 2 & 3 & 4\end{array}$
$\begin{array}{llllll}\text { Total cost } & 20 & 30 & 40 & 45 & 50\end{array}$
What will be the AFC at 4 units of output. $(J, 10)$

(a) 2
(b) 3
(c) 4
(d) 5
Q.44. Direct cost is also known as: $(\mathrm{D}, 10)$
(a) Indirect Cost
(b) Traceable cost
(c) Opportunity Cost
(d) Accounting Cōst
Q.45. A firm AFC is Rs. 200 at 10 units of output what will be it at 20 units of output?(D,10)
(a) 500
(b) 100
(c) 150
(d) 200
Q.46. What will be the AFC of 2 units according to the table given below: $(\mathrm{D}, 10)$

Output Total Cost (in Rs.)

| 0 | 1 | 2 |
| :--- | :--- | :--- | :--- |
| 580 | 689 | 850 |

(a) 105
(b) 135
(c) 235
(d) 290
Q.47. Fixed cost is known as $\qquad$ cost.(D,10)
(a) Prime
(b) Direct
(c) Overhead
(d) Direct
Q.48. Average Cost Curve is also known as $\qquad$ (D,10)
(a) Profit curve
(b) Demand curve
(c) Supply curve
(d) None of these
Q.49. From the following details, find out the average variable cost of 10 units: $(\mathrm{D}, 10)$

OUTPUT : $0 \quad 1020$
Total cost: Rs. 200 Rs. 400 Rs. 800
(a) Rs. 40
(b) Rs. 20
(c) Rs. 200
(d) Rs. 400
Q.50. Find out AFC of 3 unit:(J,11)
$\begin{array}{lllll}\text { Unit } & 0 & 1 & 2 & 3\end{array}$
TC $300 \quad 1,000 \quad 2000 \quad 3,000$
(a) 100
(b) 200
(c) 300
(d) 400 .
Q.51. Units $0 \quad 1 \quad 2$
$\begin{array}{llll}\text { TC } & 580 & 1,200 & 1,500\end{array}$
Calculate AFC at 2nd unit of output (J,11)
(a) 235
(b) 290
(c) 310
(d) 920 .
Q.52. What will be the AFC of 3 units of Output as per table given below?(D,11)

| Output <br> Total Cost | 0 | 1 | 2 | 3 |
| :--- | :--- | :--- | :--- | :--- |
| (in Rs.) | 300 | $\mathbf{1 , 0 0 0}$ | 2,500 | $\mathbf{3 , 0 0 0}$ |

(a) 100
(b) 1,000
(c) 200
(d) 400
Q.53. What will be marginal cost of 67 units of production accounting to the table given below:(D,11)
Units of -
$\begin{array}{llllll}\text { Production } & 0 & 10 & 25 & 37 & 67 \\ \text { Total Cost } & 160 & 200 & \mathbf{3 0 0} & \mathbf{5 0 0} & \mathbf{1 , 4 0 0}\end{array}$
(a) 10
(b) 20
(c) 30
(d) 50
Q.54. The average fixed cost for producing an output of 6 units of a product by a firm is Z
30. The same cost for producing an output of 4 units will be Rs $\qquad$ (D,11)
(a) 50
(b) 45
(c) 25
(d) 20
Q.55. Given Output 0
$\qquad$

Total Cost (Rs.)
20
24
What will be AFC 20
(a) 2
(b) 3
(c) 4
(d) 5
Q.56. What will be the total fixed cost for the production of three units as per the details given below: $(J, 12)$
Unit $\quad 0 \quad 1 \quad 2 \quad 3$
$\begin{array}{lllll}\text { Total Gost } & 620 & 940 & 1555 & 3670\end{array}$
(a) 620
(b) 640
(c) 1115
(d) 2650
$\begin{array}{llllllll}\text { Q.57. } \begin{array}{ll}\text { Output } & 0 \\ 1 & 2\end{array} \quad 3 & 4 & (D, 12)\end{array}$

| Total cost | 25 | 45 | 60 | 85 | 105 |
| :--- | :--- | :--- | :--- | :--- | :--- |

Find AVC at 4 units
(a) 20
(b) 30
(c) 25
(d) 26
Q.58. The change in total cost due to one unit change in output is referred to $\qquad$ cost $(D, 12)$
(a) Average
(b) Average variable
(c) Marginal
d) Average fixed
Q.59. AFC at 6 units of output is Rs.30. How much is at 4 units( $D, 12$ )
(a) 25
(b) 35
(c) 45
(d) None
Q.60. A firms total cost is Rs. 200 at 5 units of output and Rs. 220 at 6 units of output. The marginal cost of producing 6th unit of output will be Rs. $\qquad$ $(D, 12)$
(a) 20
(b) 220
(c) 120
(d) 440
Q.61. What will be the TVC if we produce 4 units? $(D, 12)$

| Output | $\mathbf{0}$ | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ |
| :--- | :--- | :--- | :--- | :--- | :--- |
| TC | $\mathbf{2 5}$ | $\mathbf{3 0}$ | $\mathbf{4 0}$ | $\mathbf{5 0}$ | $\mathbf{6 0}$ |

(a) 25
(b) 35
(c) 45
d) 55
Q.62. Direct costs are also known as $\qquad$ (J,13)
(a) Traceable costs
(b) Indirect costs
(c) Opportunity costs
(d) Real costs
Q.63. Marginal cost changes due to change in $\qquad$ cost. (J,14)
(a) Total
(b) Fixed
(c) Average
(d) Variable
Q.64. A firm produces 10 units of a commodity at an average total cost of Rs. 200 and with a fixed cost of Rs. 500. Find out the component of average variable cost in the total cost:(J,14)
(a) Rs. 300
(b) Rs. 200
(c) Rs. 150
(d) Rs. 100
Q.65. Average total cost to a firm is Rs/ 600 when it produces 10 units of outpur and Rs. 640 when the output is 11 units. The MC of the 11th unit is: $(J, 14)$
(a) Rs. 40
(b) Rs. 540
(c) Rs. 840
(d) Rs. 1,040
Q.66. Average cost of producing 50 units of any commodity is Rs. 250 and fixed cost is Rs. 1,000 . What will be the average fixed cost of producing 100 units of the commodity? $(D, 14)$
(a) Rs. 10
(b) Rs. 30
(c) Rs. 20
(d) Rs. 05
Q.67. A company produces 10 units of output and incurs Rs. 30 per unit as variable cost and Rs. 5 per unit of fixed cost. What will be its total cost of producing 10 units?(D,14)
(a) Rs. 300
(b) Rs. 35
(c) Rs. 305
(d) Rs. 350
Q.68. On the basis of the following data what will be the marginal cost of the 6 th unit of output? $(\mathrm{D}, 14)$

| Output | $\mathbf{0}$ | 1 | 2 | 3 | 4 | 5 | 6 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Total Cost (in Rs.) | 240 | 330 | $\mathbf{4 1 0}$ | $\mathbf{4 8 0}$ | $\mathbf{5 4 0}$ | $\mathbf{6 1 0}$ | $\mathbf{6 9 0}$ |

(a) Rs. 133
(b) Rs. 75
(c) Rs. 80
(d) Rs. 450
Q.69. If marginal cost equals average total cost,
(a) Average total cost is falling
(b) Average total cost is rising
(c) Average total cost is maximized
(d) Average total cost is minimized
Q.70. The marginal product curve is above the average product curve when the average product is
(a) Constant
(b) Decreasing
(c) Increasing
(d) None of above
Q.71. As output increases, average fixed cost:
(a) Remains constant
(b) Starts falling
(c) Start rising
(d) None
Q.72. Which of the following curves never touch any axis but is downward?
(a) Marginal cost curve
(b) Total cost curve
(c) Average fixed cost curve
(d) Average variable cost curve
Q.73. The 'average' fixed cost of a firm
(a) Is independent of the output
(b) Depends on the output and increases with increase in it
(c) Depends on the output and decreases with increase in it
(d) None of the above.
Q.74. Marginal cost curve always cuts the average cost curve
(a) From below on the falling portion of the AC curve
(b) From below on the rising portion of the AC curve
(c) From below on the minimum point of the AC curve
(d) From below on any point of the AC curve.
Q.75. Rising portion of marginal cost curve is due to

(a) Increasing returns to varying factor
(b) Decreasing returns to varying factor
(c) Constant returns to varying factor
(d) None of the above.
Q.76. When averae cost is fallings, marginal cost
(a) May also be falling
(b) May be rising
(c) May be rising or falling
(d) Has no relation with average cost
Q.77. When average cost is constant, marginal cost
(a) Is equal to average cost
(b) May be constant
(c) May be rising
(d) May be falling.
Q.78. When average cost is rising, marginal cost
(a) Must be rising
(b) May be rising
(c) May be decreasing
(d) None of the above.
Q.79. Generally the profits are maximized in the short run at the point at which
(a) Marginal cost of production is equal to the marginal return
(b) Marginal return, is negative
(c) Marginal return is zero
(d) Marginal cost is zero.
Q.80. If marginal cost is above average variable cost at a time when output is rising, then
(a) Average total cost is falling
(b) Average variable cost is rising
(c) Average variable cost is falling
(d) Average total revenue is rising.
Q.81. All of the following curves are $U$-shape except
(a) The AVC curve
(b) The AFC curve
(c) The AC curve
(d) The MC curve.
Q.82. If firm's average cost curve is falling then marginal curve must be:
(a) Falling
(b) Rising
(c) Below average cost curve
(d) None of the above
Q.83. As output increases, average fixed cost:(N,06)
(a) Remains constant
(b) Starts falling
(c) Start rising
(d) None
Q.84. AFC curve is: $(\mathbf{F}, \mathbf{0 7})$
(a) Convex \& downward sloping
(b) Concave \& downward sloping
(c) Convex \& upward sloping
(d) Concave \& upward rising
Q.85. $U$-shaped average cost curve is based on: $(F, 07)$
(a) Law of increasing cost
(b) Law of decreasing cost
(c) Law of constant returns to scale
(d) Law of variable proportions
Q.86. When shape of average cost curve is upward, marginal cost:(M,07)
(a) Must be decreasing
(b) Must be constant
(c) Must be rising
(d) Any of these
Q.87. Marginal Cost changes due to changes in $\qquad$ C
(a) Total cost
(b) Average cost
(c) Variable cost
(d) Quantity of output
Q.88. At which point does the marginal cost curve intersect the average variable cost curve and short run average total cost curve? $(N, 07)$
(a) At equilibrium points
(b) At their lowest points
(c) At their optimum points
(d) They don't intersect at all
Q.89. Which curve is never $U$-shaped? ( 0,09 )
(a) ATC curve
(b) AVC curve
(c) AFC curve
(d) MC curve
Q.90. Which statement among below is correct in reference in Average Fixed cost. $(D, 13)$
(a) Never becomes zero
(b) Curve never touches x -axis
(c) Gurve never touches $y$-axis
(d) All of the above
Q.91. A firm will close down in the short period, if its AR is Less than: $(\mathbf{J}, 14)$
(a) AC
(b) AVC
(c) MC
(d) None of the above
Q.92. Average fixed cost curve is always: $(\mathrm{D}, 14)$
(a) Declining when output increases
(b) U-Shaped, if there are increasing returns to scale
(c) U-Shaped, if there are decreasing returns to scale
(d) Intersected by marginal cost at its minimum point
Q.93. Technically efficient combinations of inputs is those which :
(a) Minimises cost
(b) Minimises loss
(c) Maximises profit
(d) Maximises revenue.
Q.94. Falling portion of long-run $A C$ curve is due to
(a) Economies of scale
(b) Returns to scale
(c) Law of variable proportions
(d) Constant returns to scale
Q.95. In the long run some firms will exit the market if the price of good offer for sale is less than.
(a) Marginal revenue
(b) Average total cost
(c) Marginal cost.
(d) Average revenue.
Q.96. The cost of one thing in terms of the alternative given up is known as :
(a) Production cost
(b) Physical cost
(c) Real cost
(d) Opportunity cost.
Q.97. The cost, 'what has to be paid to retain it in its present use' is called
(a) Nominal cost
(b) Social cost of a factors of production
(c) Opportunity cost of a factor
(d) Economic cost of a factors of production.
Q.98. The normal long-run average cost curve is influenced by the
(a) Principle of diminishing returns
(b) Economies and diseconomies of large scale production
(c) Principle of constant returns to scale
(d) All of the above.
Q.99. If the LAC curve falls as output expands this fall is due to
(a) Economies of scale
(b)The law of diminishing returns
(c) Diseconomies of scale
(d) Any of the above.
Q.100. Long run average cost curves are broadly
(a) U-shaped
(b) Inverted U-shaped
(c) V-shaped
(d) L-shaped.
Q.101. Opportunity costs are also known as
(a) Spill-over costs
(b) Money costs
(c) Alternative costs
(d)External costs
Q.102. Rakesh inherited 1 acre of land from his grandfather who paid Rs. 10,000 cash for the land back in 1951. Today, land in the area sells for Rs. $2,00,000$ per acre. What is the opportunity cost to Rakesh for keeping the land?
(a) Nothing, since the land was inherited
(b) Nothing, since the grandfather paid cash
(c) Rs. 10,000, since this is what is cost Rajesh's grandfather
(d) Rs. 2,00,000, since this is what Rakesh is giving up by keeping the land.
Q.103. All money costs can be regarded as :
(a) Social costs
(b) Opportunity costs
(c) Explicit costs
(d) Real costs
Q.104. The cost assigned to factors of productions that the firm neither hires nor purchases is called
(a) Social cost
(b) Opportunity cost
(c) Economic cost
(d) Implicit cost.
Q.105. The cost that firm incurs in hiring or purchasing any factor of production is referred as:
(a) Explicit cost
(b) Implict cost
(c) Variable cost
(d) Fixed cost
Q.106. Suppose that an owner is earning total revenue of Rs. $1,00,000$ and is increasing explicit cost of Rs. $\mathbf{6 0 , 0 0 0}$. If the owner could work for another company for Rs. 30,000 a year, we would conclude that:
(a)The firm is earning economic profit or Rs. 10,000.
(b) The firm is earning accounting profit of Rs. 40,000
(c) The firm is earning economic profit of Rs. 40,000
(d) Both (a) and (b)
Q.107. Suppose the short run cost function can be written as $T C=250+10$ Q. Average Fixed Cost equals:
(a) $250 / \mathrm{Q}$
(b) 250
(c) 10
(d) $250 / \mathrm{Q}+10$
Q.108. Read the following paragraph and answer questions number 113-116

Anisha quit her job at a private company where she earned Rs. 2,90,000 a year. She withdrew Rs. 4,00,000 in savings account that earned $10 \%$ interest annually to buy a second hand mini bus to commune passenger between Cannaught Place and Noida. There are 1000 passengers who will pay Rs. 4000 a year each for commuter service; Rs. 2800 from each passenger goes for petrol, maintenance, depreciation etc.
What is Anisha's total revenue from her commuter service?
(a) Rs. 40,00,000
(b) Rs. 2,90,000
(c )Rs. 28,00,000
(d)Rs. 31,30,000
Q.109. Calculate Anisha's accounting costs?
(a) Rs. 12,00,000
(b) Rs. $40,00,000$
(c )Rs. 28,00,000
(d) Rs. 8,70,000
Q.110. Calculate Anisha's economic cost?
(a) Rs. 3,30,000
(b) Rs. 40,000
(c) Rs.28,00,000
(d)Rs. 31,30,000
Q.111. We can say that Anisha:
(a) earned economic profits but suffered accounting loss
(b) earned economic profits and accounting profits
(c) suffered economic loss and accounting loss
(d)earned accounting profits but suffered economic loss.
Q.112. Read Table 2 and answer Questions number 117-118.

With the same amount of resources, a farmer can feed the following combinations of sheep and cows:
Given the options available to him, what is the opportunity cost to the farmer of feeding one cow?
(a) 1 sheep
(b) 3 sheep
(c) 9 cows
(d) 9 sheep.
Q.113. Give the options available to him, what is the opportunity cost to the farmer of feeding one sheep?
(a) 9 sheep
(b) 3 cows
(c) $1 / 3$ sheep.
(d) $1 / 3$ cow
Q.114. Read the following paragraph and answer questions 119-121

Nicole owns a small pottery factory. She can make 1,000 pieces of pottery per year and sell them for Rs. 100 each. It costs Nicole Rs. 20,000 for the raw material to produce the $\mathbf{1 , 0 0 0}$ pieces of pottery. She has invested Rs. $1,00,000$ in her factory and equipment: Rs. 50,000 from her savings and Rs. 50,000 borrowed at 10 percent. (Assume that she could have loaned her money out at 10 per cent, too.) Nicole can work at a competing pottery factory for Rs. $\mathbf{4 0 , 0 0 0}$ per year.
The accounting cost at Nicole's pottery factory is :
(a) Rs. 25,000
(b) Rs. 50,000
(c) Rs. 80,000
(d) Rs.75,000
Q.115. The economic cost at Nicole's factory is:
(a) Rs. 75,000
(b)Rs. 70,000
(c )Rs. 80,000
(d)Rs. 30,000
Q.116. The accounting profit at Nicole's pottery factory is:
(a) Rs. 30,000
(b) 50,000
(c )Rs. 80,000

(a) Direct cost
(b) Total cost
(c) Accounting cost
(d) Cost of foregone opportunity
Q.118. If LAC curve falls as output expands, this is due to:M,07)
(a) Law of diminishing ratains
(b) Economics of scale
(c) Law of variable proportion
(d) Dis economics of scale
Q.119. Suppose, the total of production of commodity $X$ is Rs. $\mathbf{1 , 2 5 , 0 0 0}$. Out of this cost implicit cost is Rs. $\mathbf{3 5 , 0 0 0}$ and normal profit is Rs. 25,000. What will be the explicit cost of commodity $\mathbf{X}$ ? $(\mathbf{A}, 07)$
(a) 90,000
(b) 65,000
(c) 60,000
(d) $1,00,000$
Q.120. Implicit cost may be defined as the:( $\mathrm{N}, \mathbf{0 7 )}$ [SM-75]
(a) Cost which do not change over a period of time
(b) Cost which the firm incurs but doesn't disclose
(c) Payment to the non-owners of the firm for the resources
(d) Money payment which the self employed resources could have earned in their best alternative employment
Q.121. Which of the following is known as envelope curve? ( $\mathrm{J}, 08$ )
(a) MC curve
(b) AFC curve
(c) LAC curve
(d) TFC curve
Q.122. Long run does not have: $(D, 08)$
(a) Average Cost
(b) Total Cost
(c) Fixed Cost
(d) Variable Cost
Q.123. Long run price is also called by the name of $\qquad$ $(D, 10)$
(a) Market price
(b) Normal price
(c) Administered price
(d) Wholesale price
Q.124. In the long run all factors are - $(\mathbf{J}, 11)$
(a) Fixed
(b) Variable
(c) All factors remain unchanged
(d) None.
Q.125. Cost in terms of pain, discomfort, disability involved in supplying the various factors of production by their owners are termed as $\qquad$ ( $\mathbf{J}, 12$ )
(a) Social Cost
(b) Explicit Cost
(c) Real Cost
(d) Implicit Cost
Q.126. The cost of resources owned and employed by the entrepreneur himself in his business is termed as $\qquad$ cost. (J,12)
(a) Explicit
(b) Implicit
(c) Fixed
(d) Variable.
Q.127. In which of the following cases opportunity cost concept applies ? $(\mathbf{H}, 13)$
(a) Resources have alternative uses
(b) Resources have limited uses
(c) Resources have no use
(d) None of the above
Q.128. The positively sloped (rising) part of the long run average cost curve indicates working of the $\qquad$ (D,14)
(a) Diseconomies of scale
(b) Increasing returns to scale
(c) Constant returns to scale
(d) Economies of scale
Q.129. A firm's long-run average total cost curve is. [SM-70]
(a) Identical to its long-run marginal-cost-curve as all factors are variable.
(b) Also its long-run total cost curve because it explains the relationship cost and quantity supplied in the long run.
(c) In fact the average total cost curve of the optimal plant in the shor run as it tries to produce at least cost.
(d) Tangent to all short-rūn average total cost the curves and repesents the lowest average total cost for producing each level of output
Q.130. Economic costs of production differ from accounting cost of production because [SM-77]
(a) Economic costs include expenditures for hired resources while accounting costs do not.
(b) Accounting costs include opportunity costs which are deducted later to find paid out costs.
(c) Accounting costs include expenditures for hired resources while economic costs do not.
(d) Economic costs add the opportunity cost of a firm which uses its own resources.

## Q.131. Which of the following statements is correct?

(a) The LAC curve is also called the planning curve of a firm.
(b) Total revenue = price per unit number of units sold.
(c) Opportunity cost is also called money cost.
(d) If total revenue is divided by the number of units sold we get marginal revenue.
Q.132. Diminishing marginal returns implies:[SM-7]
(a) Decreasing average variable costs.
(b) Decreasing marginal costs.
(c) Increasing marginal costs.
(d) Decreasing average fixed costs.

Use the following information to answer questions 133-135

| Hours of Labour | Total Output | Marginal Product |
| :---: | :---: | :---: |
| 0 | - | - |
| 1 | 100 | 100 |
| 2 | - | 80 |
| 3 | 240 | - |

Q.133. What is the total output when 2 hours of labour are employed?[SM-14]
(a) 80
(b) 100
(c) 180
(d) 200
Q.134. What is the marginal product of the third hour of labour? [SM-15]
(a) 60
(b) 80
(c) 100
(d) 240
Q.135. What is the average product of the first three hours of labour?[SM-16]
(a) 60
(b) 80
(c) 100
(d) 240
Q.136. Which of the following cost curves is never ' $U$ ' shaped? [SM-18]
(a) Average cost curve.
(b) Marginal cost curve.
(c) Average variable cost curve.
(d) Average fixed cost curve.
Q.137. In the short run, when the output of a firm increases, its average fixed cost:[SM-21]
(a) increases.
(b) decreases.
(c) remains constant.
(d) first declines and then rises.
Q.138. Which of the following is an example of "explicit cost"? [SM-25]
(a) The wages a proprietor could have made by working as an employee of a large firm.
(b) The income that could have been earned in alternative uses by the resources owned by the firm.
(c) The payment of wages by the firm.
(d) The normal profit earned by a firm.
Q.139. Which of the following is an example of an "implicit cost"? [SM-26]
(a) Interest that could have been earned on retained earnings used by the firm to finance expansion.
(b) The payment of rent by the firm for the building in which it is housed.
(c) The interest payment made by the firm for funds borrowed from a bank.
(d) The payment of wages by the firm.

Use the following data to answer questions 140-142.

| Output (0) | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Total Cost (TC) | Rs. 240 | Rs. 330 | Rs. 410 | Rs. 480 | Rs. 540 | Rs. 610 | Rs. 690 |

Q.140. The average fixed cost of $\mathbf{2}$ units of output is :[SM-27]
(a) Rs. 80
(b) Rs. 85
(c) Rs. 120
(d) Rs. 205
Q.141. The marginal cost of the sixth unit of output is :[SM-28]
(a) Rs. 133
(b) Rs. 75
(c) Rs. 80
(d) Rs. 450
Q.142. Diminishing marginal returns start to occur between units: [SM-29]
(a) 2 and 3.
(b) 3 and 4 .
(c) 4 and 5 .
(d) 5 and 6 .
Q.143. Marginal cost is defined as: [SM-30]
(a) The change in total cost due to a one unit change in output.
(b) Total cost divided by output.
(c) The change in output due to a one unit change in an input.
(d) Total product divided by the quantity of input
Q.144. Which of the following is true of the relationship between the marginal cost function and the average cost function? [SM-31]
(a) If MC is greater than ATC, then ATC is falling.
(b) The ATC curve intersects the MC curve at minimum MC.
(c) The MC curve intersects the ATC curve at minimum ATC.
(d) If MC is less than ATC, then ATC is increasing
Q.145. Which of the following statements is correct concerning the relationships among the firm's cost functions?[SM-34]
(a) TC = TFC - TVC.
(b) $\mathrm{TVC}=\mathrm{TFC}-\mathrm{TC}$.
(b) TFC = TC - TVC.
(d) TC = TVC - TFC
Q.146. Suppose output increases in the short run. Total cost will:[SM-35]
(a) Increase due to an increase in fixed costs only.
(b) Increase due to an increase in variable costs only.
(c) Increase due to an increase in both fixed and variable costs.
(d) Decrease if the firm is in the region of diminishing returns.
Q.147. Which of the following statements concerning the long-run average cost curve is false?[SM-36]
(a) It represents the least-cost input combination for producing each level of output.
(b) It is derived from a series of short-run average cost curves.
(c) The short-run cost curve at the minimum point of the long-run average cost curve represents the least-cost plant size for all levels of output.
(d) As output increases, the amount of capital employed by the firm increases along the curve.
Q.148. The negatively-sloped (i.e. falling) part of the long-run average total cost curve is due to which of the following?[SM-37]
(a) Diseconomies of scale.
(b) Diminishing returns.
(c) The difficulties encountered in coordinating the many activities of a large firm.
(d) The increase in productivity that results from specialization.
Q.149. The positively sloped (i.e. rising) part of the long run average total cost curve is due to which of the following? [SM-38]
(a) Diseconomies of scale.
(b) Increasing returns.
(c) The firm being able to take advantage of large-scale production techniques as it expands its output.
(d) The increase in productivity that results from specialization.
Q.150. A firm's average total cost is Rs. 300 at 5 units of output and Rs. 320 at 6 units of output. The marginal cost of producing the 6th unit is :[SM-39]
(a)Rs. 20
(b) Rs. 120
(c)Rs. 320
(d) Rs. 420
Q.151. A firm producing 7 units of output has an average total cost of Rs. 150 and has to pay Rs. 350 to its fixed factors of production whether it produces or not. How much of the average total cost is made up of variable costs? [SM-40]
(a) Rs. 200
(b) Rs. 50
(c) Rs. 300
(d) Rs. 100
Q.152. A firm has a variable cost of Rs. 1000 at 5 units of output. If fixed costs are Rs. 400, what will be the average total cost at 5 units of output?[SM-41]
(a) Rs. 280
(b) Rs. 60
(c) Rs. 120
(d) Rs. 1400
Q.153. Which of the following is a variable cost in the short run? [SM-57]
(a) Rent of the factory.
(b) Wages paid to the factory labour.
(c) Interest payments on borrowed finaneial capital.
(d) Payment on the lease for factory equipment.
Q.154. A firm's long-run average total cost curve is. [SM-72]
(a) Identical to its long-run marginal-cost curve as all factors are variable.
(b) Also its long-run total cost curve because it explains the relationship cost and quantity supplied in the long run.
(c) In fact the average total cost curve of the optimal plant in the short run as it tries to produce at least cost.
(d) Tangent to all short-run average total cost the curves and represents the lowest average total cost for producing each level of output.
Q.155. Marginal cost changes due to changes in [SM-79]
(a) Total cost
(b) Average cost
(c) Variable cost
(d) Quantity of output

## Q.156. Which of the following statements is correct?[SM-80]

(a) Fixed costs vary with change in output.
(b) If we add total variable cost and total fixed cost we get the average cost.
(c) Marginal cost is the result of total cost divided by number of units produced.
(d) Total cost is obtained by adding up the fixed cost and total variable cost.
Q.157. Which of the following statements is incorrect?[SM-81]
(a) The LAC curve is also called the planning curve of a firm.
(b) Total revenue $=$ price per unit $\times$ number of units sold.
(c) Opportunity cost is also called alternative cost.
(d) If total revenue is divided by the number of units sold we get marginal revenue.
Q.158. The vertical difference between TVC and TC is equal to-[SM-82]
(a) MC
(b) AVC
(c) TFC
(d) None of the above
Q.159. Which of the following statements is correct? [SM-24]
(a) When the average cost is rising, the marginal cost must also be rising.
(b) When the average cost is rising, the marginal cost must be falling.
(c) When the average cost is rising, the marginal cost is above the average cost.
(d) When the average cost is rising, the marginal cost must be rising.
Q.160. The distinction drawn between fixed and variable costs is based on [SM-82]
(a) Whether the costs can or cannot be changed during the life of the plant
(b) Whether the costs are or are not legally contracted, hence, unchangeable
(c) Whether the costs do not enter the calculation of total costs
(d) Whether the costs do not vary with the output produced in the short run.


| Answer |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| d | a | b | a | d | b | b | b | c | b | c | c | d | c | d | a | b | b | c | b |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| d | c | b | d | d | c | d | d | b | c | b | a | d | c | a | b | b | d | c | a |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
| d | b | d | b | b | d | c | d | b | a | b | a | c | b | d | a | a | c | c | a |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |
| b | a | d | c | d | a | d | c | d | c | b | c | c | c | b | c | a | a | a | b |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| b | c | b | a | d | c | a | b | c | d | b | a | a |  | - | d | c | b | a | a |
| 101 | 102 | 103 | 104 | 105 | 106 | 107 | 108 | 109 | 110 | 111 | 112 | 113 | 114 | 115 | 116 | 117 | 118 | 119 | 120 |
| c | d | c | d | a | d | a | a | c | d | b | b | d | a | b | d | d | b | a | d |
| 121 | 122 | 123 | 124 | 125 | 126 | 127 | 128 | 129 | 130 | 131 | 132 | 133 | 134 | 135 | 136 | 137 | 138 | 139 | 140 |
| c | c | b | b | c | b | a | a |  | d | a | ${ }^{\prime}$ | c | a | b | d | b | c | a | c |
| 141 | 142 | 143 | 144 | 145 | 146 | 147 | 148 | 149 | 150 | 151 | 152 | 153 | 154 | 155 | 156 | 157 | 158 | 159 | 160 |
| c | c | a | c | c | b |  | d | a | d | d | a | b | d | c | d | d | c | c | d |

Adm. Code $\square$ Date $\square$
total marks : $\square$


