C O C - R & U - Very Short - Info & Con

Q.1. What is money cost?

Ans. Money cost refers to the sum total of monetary expenses incurred by the producer for producing a given output.

Q.2. What is meant by explicit cost?

Ans. Explicit cost refers to the cost incurred on account of purchases of factor and non-factor inputs from the market.

Q.3. What is meant by implicit cost?

Ans. Implicit cost is the opportunity cost of self-owned and self-employed resources. Interest on entrepreneur's own capital or rent on entrepreneur's own buildings are examples of implicit costs.

Q.4. What is meant by opportunity cost?

Ans. Opportunity cost is the total sacrifice made for availing an opportunity (or producing a given level of output).

Q.5. What is meant by fixed or supplementary cost?

Ans. Fixed or supplementary costs are those costs which do not change with change in the level of output.

Q.6. What is meant by prime or variable cost?

Ans. Prime or variable costs are those costs which change as the level of output changes.

Q.7. What is meant by total cost?

Ans. Total cost refers to the sum total of fixed and variable costs incurred by the producer to produce a given quantity of output.

Total Cost (TC) = Total Fixed Cost (TFC) + Total Variable Cost (TVC)

Q.8. What is meant by average cost?

Ans. Average cost is the cost per unit of output produced.

$$AC = \frac{TC}{Q}$$

Also, $AC = AFC + AVC$

(Here, AFC = Average fixed cost; and AVC = Average variable cost.)

Q.9. What is meant by marginal cost?

Ans. Marginal cost is additional cost owing to the production of an additional unit of output.

Q.10. How does total fixed cost change when the output changes?

Ans. Total fixed cost remains unchanged even when output changes.

Q.11. How is the total variable cost derived from a marginal cost schedule?

Ans. Total variable cost can be found out by taking the summation of marginal costs.

$TVC = \sum MC$

Q.12. Why is fixed cost curve parallel to X-axis?

Ans. Fixed cost remains constant at all levels of output. So, fixed cost curve is parallel to X-axis.

Q.13. Under what circumstances variable cost is zero?

Ans. When production is zero, the variable cost will also be zero.

Q.14. What is the behaviour of total variable cost, as output increases?

Ans. Initially, total variable cost increases at decreasing rate and eventually, it increases at an increasing rate.

Q.15. Why does average cost fall as output rises?

Ans. Average cost falls as output rises, because of increasing returns to a factor.

Q.16. What is the behaviour of average fixed cost as output increases?

Ans. Average fixed cost continuously decreases as output increases. But it never reduces to zero.

Q.17. Can AFC curve meet X-axis?

Ans. AFC is a rectangular hyperbola. It never touches any axis.

Q.18. Which cost, fixed or variable, determines MC?

Ans. Variable cost determines MC.

Q.19. What is the shape of AC curve?

Ans. AC curve is generally ‘U’ shaped.

Q.20. What is the shape of MC curve?

Ans. MC curve is generally ‘U’ shaped.

Q.21. What will happen to ATC when MC > ATC?

Ans. When MC > ATC, ATC must rise.

Q.22. At what point MC curve cuts AC curve?

Ans. MC curve cuts AC curve at its lowest point.

C O C - R & U - Reason-Based Questions

Q.1. The concept of fixed cost is relevant for short period as well as for long period.

Ans. False. The concept of fixed cost is relevant only for short period. All costs are variable in the long period. The difference between fixed costs and variable costs disappears in the long period.

Q.2. Variable cost curve starts from the point of origin (zero).

Ans. True. Because TVC = 0 when output = 0.

Q.3. Total cost curve starts from the origin in the short period.

Ans. False. Total cost curve does not start from the origin in the short period. At zero level of output, total cost is equal to fixed cost. Therefore, total cost curve starts from the Y-axis.

Q.4. Total cost and total variable cost curves are parallel to each other.

Ans. True. Total cost and total variable cost curves are parallel to each other. This is because fixed cost (which is the difference between total cost and total variable cost) is constant at all levels of output.

Q.5. Average total cost is greater than average variable cost.

Ans. True. Average total cost is greater than average variable cost because average total cost (ATC) is the sum of average variable cost (AVC) and average fixed cost (AFC).

Q.6. TVC increases at a decreasing rate in the initial stages of production.

Ans. True. Because, initially a firm may be enjoying increasing returns to a factor (because of underutilisation of the fixed factor). It corresponds to a situation when MP is rising and MC is falling.

Q.7. Short period average cost curve is U-shaped because of returns to scale.

Ans. False. Short period average cost curve is U-shaped because of the law of variable proportions (or returns to a factor): it tends to fall owing to increasing returns to a factor; it tends to stabilise owing to constant returns to a factor; and it tends to rise owing to diminishing returns to a factor.

Q.8. ATC and AVC curves intersect each other at some point.

Ans. False. ATC and AVC curves never intersect each other, because ATC is the sum of AFC and AVC. Since AFC can never be zero, the AVC can never be equal or greater than ATC. Thus, ATC always remains above AVC.

Q.9. Marginal cost is an inverse U-shaped curve.

Ans. False. Marginal cost is U-shaped curve because of the law of variable proportions. Initially, it is falling because of increasing returns to a factor. Subsequently, it tends to rise because of diminishing returns to a factor.

Q.10. Fixed cost does not influence MC.

Ans. True. MC is additional cost. By definition, additional cost cannot include any component of fixed cost (which is constant and incurred even before production **actually starts). Hence, MC is not influenced by fixed cost.**

Q.11. Long run average cost curve is U-shaped.

Ans. True. Long run average cost curve (LRACC) is U-shaped because of the returns to scale. When increasing returns to scale are in operation, LRACC tends to decline. When constant returns to scale are in operation, LRACC tends to stabilise. When decreasing returns to scale are in operation, LRACC tends to rise.

Q.12. Long run average cost curve is flatter than the short run average cost curve, even when both the curves are U-shaped.

Ans. True. Long run average cost curve is flatter than the short run average cost curve, because short run average cost curve relates to one plant, or the constant scale of output. Long run average cost curve, on the other hand, relates to several plants or the expanding scale of output.

C O R - R & U - Very Short - Info & Con

Q.1. What is meant by revenue?

Ans. Revenue refers to the money receipts of a firm from the sale of its output.

Q.2. Define total revenue.

Ans. Total revenue is the sum total of revenue derived from the sale of all units of the commodity.

TR = ∑MR

Q.3. What is meant by average revenue?

Ans. Average revenue is the revenue per unit of output sold.

$$AR = \frac{TR}{Q}$$

Q.4. What is meant by marginal revenue?

Ans. Marginal revenue is the addition to total revenue on account of sale of one more unit of output.

Q.5. Which concept of revenue is called price?

Ans. Average revenue is called price.

Q.6. What is the shape of TR curve under perfect competition?

Ans. Under perfect competition, TR curve is an upward sloping straight line starting from the origin.

Q.7. What is the shape of AR and MR curve under perfect competition?

Ans. Under perfect competition, AR and MR curve is same and parallel to X-axis.

Q.8. What are the shapes of AR and MR curves under monopoly and monopolistic competition?

Ans. AR and MR curves under monopoly and monopolistic competition slope downward from left to right.

Q.9. What is the behaviour of average revenue in a market in which a firm can sell any quantity of the output at a given price?

Ans. Average revenue is constant at all levels of output in a market in which a firm can sell any quantity of the output at a given price.

Q.10. What is the behaviour of marginal revenue in a market in which a firm can sell any quantity of a good at a given price?

Ans. Marginal revenue is constant at all levels of output in such a market in which a firm can sell any quantity of a good at a given price.

Q.11. What is the behaviour of average revenue in a market in which a firm can sell more only by lowering the price?

Ans. Average revenue continuously decreases in such a market in which a firm can sell more only by lowering the price.

Q.12. How does the TR change with output when MR is positive?

Ans. When MR is positive, TR tends to increase.

Q.13. How does the TR change with output when MR is negative?

Ans. When MR is negative, TR tends to decrease.

Q.14. How does the TR change with output when MR is zero?

Ans. When MR is zero, TR is maximum.

Q.15. What is the relationship between AR curve and the demand curve in a monopoly market?

Ans. In a monopoly market, the AR curve is the demand curve.

Q.16. When AR is constant, what is the state of MR?

Ans. When AR is constant, MR is also constant and both are to be equal.

Q.17. What is the shape of TR curve in monopoly?

Ans. The TR curve is an upward sloping curve starting from the origin. But it increases at a diminishing rate because MR tends to decline under monopoly.

Q.18. What is the shape of the MR curve in case the TR curve is a positively sloped straight line passing through the origin?

Ans. When TR curve is a positively sloped straight line passing through the origin, MR curve will be a horizontal straight line parallel to X-axis.

Q.19. What change should take place in total revenue when

Q. marginal revenue is positive and constant, and

Ans. When MR is positive and constant, TR should increase at a constant rate.

Q.20 marginal revenue is falling?

Ans. When MR is falling, TR should increase at a decreasing rate.

C O R - R & U - Reason-Based Questions

Q.1. Marginal revenue does not accrue to first unit of the output because marginal revenue is defined as revenue when an additional unit of output is sold.

Ans. False. Because even first unit is an additional unit when the change is considered from 0 to 1.

$MR_{(1st\ unit)} = TR_1 - TR_0$

Q.2. When MR is falling, TR increases at a decreasing rate.

Ans. True. When MR is falling, less and less is added to TR for every additional unit of output. So that, TR increases only at a decreasing rate.

Q.3. TR curve can touch the X-axis.

Ans. True. In a situation of zero price, AR touches X-axis. Accordingly, TR also touches X-axis.

Q.4. MR is constant, TR should be increasing at a constant rate.

Ans. True. TR is the sum of marginal revenues corresponding to different levels of output. Since MR is constant, TR should be increasing at a constant rate.

Q.5. When TR curve is a horizontal line, MR curve is constant.

Ans. False. When TR curve is a horizontal line, MR curve will touches X-axis, *i.e.*, MR will be zero (0). Because addition to TR (which is MR) will be zero in this case.

Q.6. MR is less than AR for a monopoly firm.

Ans. True. A firm under monopoly faces a downward sloping demand curve which means it can sell more only at lower price. As the quantity of output sold increases, price or AR decreases. Decreasing AR implies decreasing MR. If AR declines, MR declines faster than AR. Hence, AR > MR or AR curve is above MR curve.

Q.7. MR can be negative in case of perfect competition.

Ans. False. Under perfect competition, negative MR is not possible because price is given to a firm. MR can be negative only when price of a commodity is declining which is possible in case of monopoly or monopolistic competition.

Q.8. AR curve is a horizontal straight line under perfect competition.

Ans. True. AR curve is a horizontal straight line under perfect competition because a firm under perfect competition is a price taker. Implying a constant AR for a firm at all levels of output.

Q.9. Demand curve under monopoly is perfectly elastic.

Ans. False. Demand curve under monopoly is relatively less elastic. Because, monopolist is a single seller of the product, and there are no close substitutes of the product in the market.

Q.10. AR curve is less elastic under monopolistic competition than under monopoly.

Ans. False. AR curve is more elastic under monopolistic competition than under monopoly. This is owing to the fact that while a firm under monopolistic competition has a large number of close substitutes in the market, a monopoly firm has none.

Q.11. Price line is a horizontal straight line under perfect competition but not under monopolistic competition.

Ans. True. Price line is a horizontal straight line under perfect competition because a firm under perfect competition can sell any quantity of the commodity at the given price. Under monopolistic competition, price line slopes downward because a firm can sell more of the commodity only by lowering the price.

Q.12. Marginal revenue can never be equal to price of the commodity.

Ans. False. MR can be equal to price (AR) of the commodity when AR is constant, so that AR and MR are equal at all levels of output. This is true of a firm under perfect competition.

C O R - HOTS & Applications

Q.1. During the market period all costs are fixed costs. How?

Ans. This is because, market period by definition is the one during which production cannot be increased by way of greater application of the factors. Implying that all factors are fixed factors during the market period. Hence, all costs during the market period are fixed costs.

Q.2. Does TC always shoot from Y-axis?

Ans. No, TC shoots from the Y-axis only when we are referring to the short period and are, therefore, distinguishing between fixed cost and variable costs. In the long period, all costs are variable costs. Accordingly, in the long period TC shoots from the origin.

Q.3. MC can be measured both as the difference between TC_n and TC_{n-1} as well as the difference between TVC_n and TVC_{n-1}. How?

Ans. We know, $MC = TC_n - TC_{n-1}$

We also know that, $TC = TFC + TVC$

Accordingly, $MC = (TFC_n + TVC_n) - (TFC_{n-1} + TVC_{n-1})$

$= TFC_n + TVC_n - TFC_{n-1} - TVC_{n-1}$

$= TVC_n - TVC_{n-1}$

TFC_n cancels out with TFC_{n-1} because fixed cost by definition is constant, no matter if it is for 'n' units of output or 'n–1' units of output.

Q.4. What segment of MC curve serves as short period supply curve of the firm and what as long period supply curve?

Ans. During the short period, the firm must cover at least the variable costs. Also, we know that the firm strikes its equilibrium only on a rising segment of MC curve. Accordingly, the rising segment of MC curve beyond AVC (which the firm must cover, as equal to price per unit) serves as its short period supply curve. In the long period, a firm must cover all costs of production; price must at least be equal to AC. Accordingly, a rising segment of MC beyond AC (or beyond a point where AC = Price = AR) serves as the firm's long period supply curve.

Q.5. Show that the rising portion of the marginal cost curve is the supply curve of a competitive firm.

Ans. A competitive firm strikes its equilibrium when:

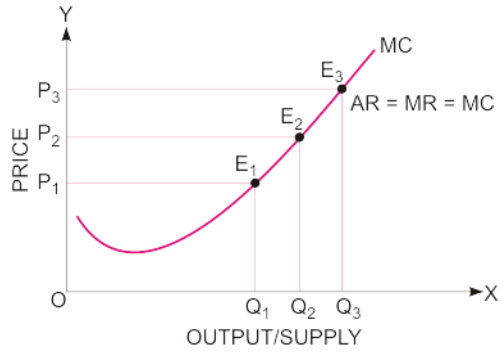
i. MR = MC, and

ii. MC is rising at the point of equilibrium.

Since price (= AR) is given to a firm and AR = MR, it makes no sense to strike equilibrium when the MC is falling. Given the fact that equilibrium will be struck only at a point on the rising MC, it follows as a deductive logic that firm's supply will correspond only to the rising segment of MC curve. And MC itself serves as a supply curve because it shows the relationship between price on the one hand and output (supply) on the other.

Fig. 5 shows E_1 , E_2 and E_3 as points of equilibrium, showing OQ_1 , OQ_2 , and OQ_3 as output (supply) corresponding to OP_1 ,OP_2 and OP_3 price.

FIGURE 5



Q.6. Average cost of production must ultimately rise when the level of output continues to expand, no matter it is related to short period production function or long period production function. Then, where is the difference between the two types of production functions?

Ans. In the short period production function, rise in the average cost is related to the 'diminishing returns to a factor'. In the long period production function, on the other hand, rise in the average cost is related to diminishing returns to scale. In the short period, diminishing returns must set in when the ideal factor ratio is crossed because of the fixity of the factor. In the long period, diminishing returns must set in when diseconomies of scale start overshadowing the economies of scale.

Q.7. Consider a situation when 10% increase in all inputs leads to 12% increase in output. How does it impact the average cost? Is it a short period phenomenon or a long period phenomenon?

Ans. When 10% increase in all inputs leads to 12% increase in output, unit cost of production $\left(\frac{TC}{Q}\right)$ must decline. Implying a fall in average cost. It certainly is a long period phenomenon when all inputs are increased.

Because, it is only in the long period that all factors are variable factors. In the short period, some factors must be fixed. Accordingly, the possibility of increasing all inputs is ruled out.

Q.8. Why is long period average cost curve for a firm U-shaped, when in the long run a firm can combine different factors in the best possible ratio?

Ans. In the long period, firm's average cost curve is U-shaped not because of any departure from the ideal input ratio, but because of the economies and diseconomies of scale. Initially, there are increasing returns to scale, causing a fall in average cost curve. Subsequently, there are constant returns to scale, causing stability of average cost curve. Finally, there are diminishing returns to scale, causing a rise in average cost curve.

Q.9. Is TR the sum total of area under AR corresponding to a given level of output?

Ans. TR is the sum total of area under AR corresponding to a given level of output only if AR is constant as under perfect competition. In situations of monopoly or monopolistic competition when AR is not constant, TR is not the sum total of AR corresponding to a given level of output. In such situations TR can be obtained in two ways:

$TR = AR \times Q$

$TR = \sum MR$

However, under all situations TR may be estimated as the sum total of area under MR corresponding to a given level of output.

Q.10. Why should equilibrium not be struck when TR is maximum?

Ans. Equilibrium is struck not when TR is maximum. Instead, it is struck when profit is maximised. And, profit is maximised when the difference between TR and TC is maximised. Or, equilibrium is struck when: MR = MC, and MC is rising.

C O R - Evaluation & Multi-Disciplinary

Q.1. In case of electricity which is sold by the government at a subsidised price, how can the government lower its losses without lowering the subsidy?

Ans. Losses are measured as the excess of cost over revenue related to a product. In a situation when subsidy is not reduced and, therefore, revenue cannot be raised through higher price of the product, the only way out to reduce losses is to lower the cost of production. The government must use more cost-efficient technology to produce electricity. Also, loss of revenue due to transmission losses and pilferage of electricity must be plugged.

Q.2. Small producers are often exempted from excise duty. Do you think this keeps their cost of production lower than the big producers and therefore, they earn higher profit per unit of output?

Ans. A cut in the excise duty reduces the average and marginal cost, leading to a rise in profit margin (other things remaining constant). However, this does not necessarily mean higher profit margin for the small producers compared to the big producers. Because, unlike small producers, big producers enjoy economies of scale leading to lower cost per unit of output. Often, the profit margins are found to be higher for the big producers than the small producers.

Q.3. How is the development of an SEZ (special economic zone) expected to influence the cost structure of a firm?

Ans. An SEZ offers multi-faceted infrastructural facility for the firms operating in the specified zone. It offers facilities of raw material, transportation, banking and insurance services. These facilities generate external economies for all the firms located in the SEZ. Because of the external economies, cost structure of an individual firm tends to be moderated. Unit cost of production is lowered.

Q.4. FDI not only brings investment in the domestic economy, it also brings new technology. How would the availability of new technology (relating to auto industry) impact the short period production function of a car manufacturer in India?

Ans. Short period production function of a firm is drawn on the assumption of a given technology. When new technology is available, the whole production function would shift: more output would be available from the same quantum of inputs. In terms of costs, firm’s AC curve would shift

downward. Thus, the availability of new technology (relating to auto industry) would shift the AC curve (of a car manufacturer) downward. It would prompt him to produce more at the going price.

Q.5. State one good, and one bad impact of 'Make in India' campaign on the cost structure of the domestic industry.

Ans. Good Impact

'Make in India' is expected to bring cost-efficient technology in the domestic economy. By using this technology, the domestic industry can hope to lower its cost structure.

Bad Impact

In response to 'Make in India' campaign, only big business companies are expected to come to the domestic market. These companies produce on a massive scale, and often emerge as the principal buyers of inputs in the domestic market. This may lead to a rise in input prices in the domestic market. Accordingly, the cost structure of the domestic producers may tend to rise.