Concept of Revenue

1 Marks Questions

1. Define Marginal Revenue. (All India 2013, 2009,2008,2007,2006; Delhi 2006)

Ans. Marginal Revenue (MR) is the change in total revenue on account of the sale of an additional unit of output.

Symbolically,

$$MR = \Delta TR \div \Delta Q \quad or \quad TR_n - TR_{n-1} \quad or \quad TR_{n+1} - TR_n$$

Where, MR = Marginal Revenue

ΔTR = Change in Total Revenue

ΔQ = Change in quantity

2. What is the behaviour of average revenue in the market, in which a firm can sell more only by lowering the price? (Hots; Delhi 2012)

Ans. Average Revenue falls in the market, in which a firm can sell more only by lowering the price, i.e. Imperfect competition

3. What is the behaviour of Marginal Revenue in the market, in which a firm can sell any quantity of the output it produces at a given price?(hots; All India 2012)

Ans. In a perfectly competitive market, firm's Marginal Revenue is just equal to the market price and it will be a horizontal line parallel to X-axis.

4. Define revenue.(Delhi 2008)
or
Give meaning of revenue in microeconomics.(Delhi 2007; All India 2006)

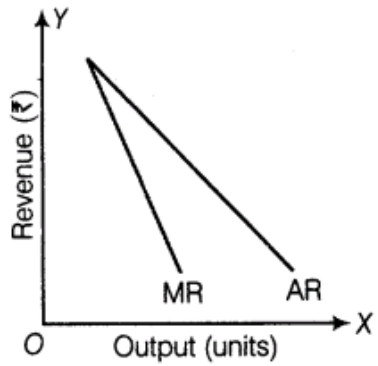
Ans. Revenue refers to money receipts of the producer from the sale of his output.

3 Marks Questions

5. Draw Average Revenue and Marginal Revenue curves in asingle diagram of a firm, which can sell more units of a good only by lowering the price of that good. Explain. (Delhi 2011)

Ans. Under imperfect competition, firms faces a downward sloping AR and MR curves, as under this form of market, firms can sell higher output only at lower price, resulting in

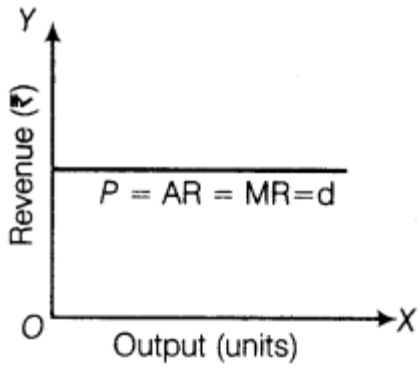
downward slope of AR and MR, curves wherein MR lies below AR because additional revenue of every addition unit sold is less than the price of output.



Firm's revenue curve under monopoly

6. Draw a single diagram of the Average Revenue and Marginal Revenue curves of a firm, which can sell any quantity of the good at a given price Explain(All India 2011)

Ans. Under perfect competition, a firm is a price taker. It can not influence/change the market price. It can sell any number of units of output at the prevailing price. If a firm tries to sell at a price higher than market price, it will lose all its customers. Firm's price line or revenue curve is a straight horizontal line. AR and MR Curves coincide with each other

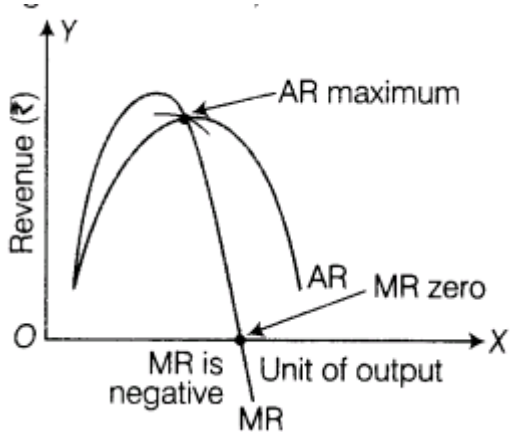


Firm's revenue curve

7.Explain the relation between Marginal Revenue and Average Revenge. (Delhi 2010C)

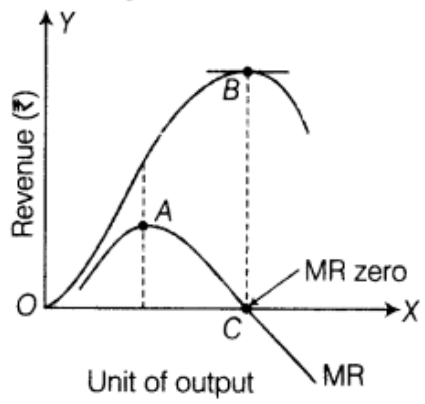
Ans. Relationship between Marginal Revenue (MR) and Average Revenue (AR) is:
(i)When AR curve rises, MR > AR
(ii)When AR curve reaches its maximum and constant, MR = AR.
(iii)When AR curve falls, MR < AR.

(iv) MR curve can be zero or negative however, AR curve can neither be zero nor negative.



8. Explain the relationship between Marginal Revenue and Total Revenue.(All India 2008,2007)

Ans. Relationship between Total Revenue (TR) and Marginal Revenue (MR) is :
(i) When TR increases at an increasing rate, MR increases
(ii)When TR increases at a diminishing rate, MR decreases but remains positive.
(iii)When TR is constant and minimum, MR is zero.
(iv)TR decreases, when MR becomes negative.



4 Marks Questions

9. A producer can sell more of a good only by lowering the price. Prepare a Total Revenue and Marginal Revenue schedule. Take four output levels. (All India 2010)

Ans. Schedule Showing TR and MR of four output levels

Output (Q) (units)	Price (₹)	Total Revenue (TR in ₹)	Marginal Revenue (MR in ₹)
1	10	10	10
2	8	16	6
3	7	21	5
4	6	24	3

10. A producer can sell any quantity of output of the good he produces at a given price. Prepare a Total Revenue and Marginal Revenue schedule for four output levels.(Delhi 2010C)

Ans. Schedule Showing TR and MR of four output levels

Output (Q) (units)	Price (₹)	Total Revenue (TR in ₹)	Marginal Revenue (MR in ₹)
1	4	4	4
2	4	8	4
3	4	12	4
4	4	16	4

11.Complete the following table(Delhi 2009)

Output (units)	Price (₹)	Total Revenue (TR in ₹)	Marginal Revenue (MR in ₹)
4	9	36	...
5	...	...	4
6	...	42	...
7	6	...	...
8	...	40	...

Ans. $\text{Price} = \frac{TR}{Q}$, $TR = \Sigma MR$ *or* $AR \times Q$

$AR = \frac{TR}{Q}$ *or* $P = AR$, $MR_n = TR_n - TR_{n-1}$

Output (Q) (units)	Price (₹)	Total Revenue (TR in ₹)	Marginal Revenue (MR in ₹)
4	9	36	–
5	**8**	**40**	4
6	**7**	42	**2**
7	6	**42**	**0**
8	**5**	40	**-2**

12. Complete the following table (All India 2009)

Output (units)	**Total Revenue** (TR in ₹)	**Marginal Revenue** (MR in ₹)	**Average Revenue** (AR in ₹)
1	...	...	8
2	...	4	...
3	12	...	...
4	8	...	2

Ans.

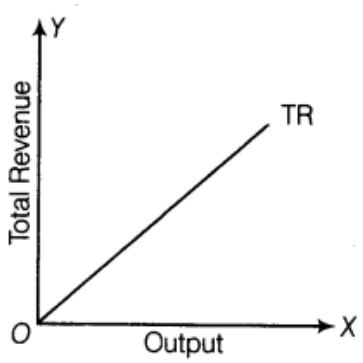
$$\text{Price} = \frac{TR}{Q},\ TR = \Sigma MR \ \textit{or}\ AR \times Q$$

$$AR = \frac{TR}{Q} \ \textit{or}\ P = AR,\ MR_n = TR_n - TR_{n-1}$$

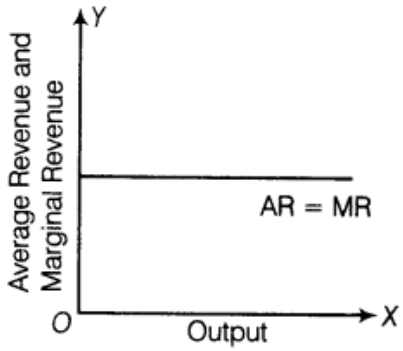
Output (Q) (units)	**Total Revenue** (TR in ₹)	**Marginal Revenue** (MR in ₹)	**Average Revenue** (AR in ₹)
1	**8**	**8**	8
2	**12**	4	**6**
3	12	**0**	**4**
4	8	**–4**	2

13.A firm can sell as many units of a good as it wants to sell at a given price. Draw
(i)Total Revenue curve and (ii) Average Revenue and Marginal Revenue curves of the firm State the relation between Average Revenue and Marginal Revenue curves in this case. (All India 2009)

Ans. (i) Total Revenue, Average Revenue and Marginal Revenue curves of the perfectly competitive firm. Here, AR and MR curves are perfectly elastic and TR curve is upward sloping straight line because as output rises, the price remains constant and TR increases



Total Revenue curve



Marginal Revenue curve

(ii)When firm can sell any level of output at a given price, it means that price, i.e. AR remains constant. In this case, MR and AR coincide with each other as Marginal Revenue (MR) is equal to the Average Revenue (AR), which is constant. Also, TR will be a straight line from origin indicating that TR is increasing at a constant rate, since MR is constant.

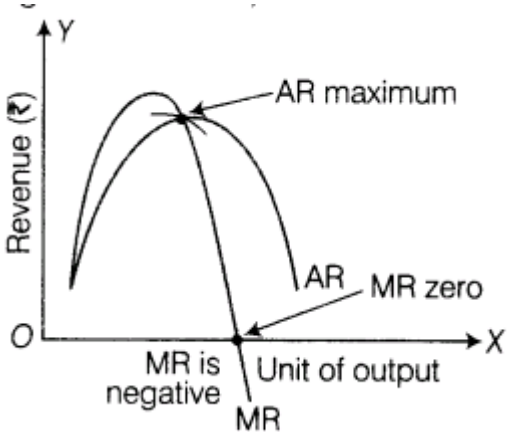
14. A firm can sell as many units of a good as it wants to sell at a given price. Prepare a schedule showing Total Revenue, Average Revenue and Marginal Revenue of such a firm. State the relation between Average Revenue and Marginal Revenue in this case. (All India 2009)

Ans. (*i*) Schedule showing firm's revenue under perfect competition

Output/Sales (units)	Average Revenue (AR = Price in ₹)	Total Revenue (TR in ₹) $TR = AR \times Q$	Marginal Revenue (MR in ₹) $MR = TR_n - TR_{n-1}$
1	5	5	5
2	5	10	5
3	5	15	5
4	5	20	5

(ii)Relationship between Marginal Revenue **(MR)** and Average Revenue

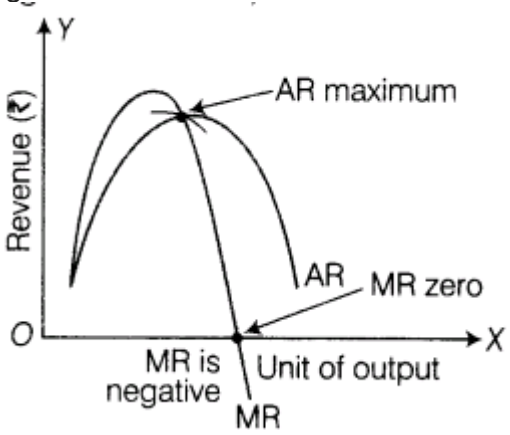
Relationship between Marginal Revenue (MR) and Average Revenue (AR) is:
(i)When AR curve rises, MR > AR
(ii)When AR curve reaches its maximum and constant, MR = AR.
(iii)When AR curve falls, MR < AR.
(iv) MR curve can be zero or negative however, AR curve can neither be zero nor negative.



15. Define revenue. State the relation between Marginal Revenue and Average Revenue (Delhi 2009C)

Ans. Revenue refers to money receipts of the producer from the sale of his output.

Relationship between Marginal Revenue (MR) and Average Revenue (AR) is:
(i)When AR curve rises, MR > AR
(ii)When AR curve reaches its maximum and constant, MR = AR.
(iii)When AR curve falls, MR < AR.|
(iv) MR curve can be zero or negative however, AR curve can neither be zero nor negative.



16. Complete the following table (All India 2008)

Output (units)	Average Revenue (AR in ₹)	Marginal Revenue (MR in ₹)	Total Revenue (TR in ₹)
1	...	15	...
2	...	...	26
3	11	...	...
4	...	3	...

Ans. $\text{Price} = \frac{TR}{Q}$, $\text{Output} = \frac{TR}{\text{Price}}$ *or* $\frac{TR}{AR}$, $TR = AR \times Q$ *or* ΣMR

$MR_n = TR_n - TR_{n-1}$, $AR = \frac{TR}{Q}$

Output (Q) (units)	Average Revenue (AR in ₹)	Marginal Revenue (MR in ₹)	Total Revenue (TR in ₹)
1	**15**	15	**15**
2	**13**	**11**	26
3	11	**7**	**33**
4	**9**	3	**36**