

PRINCIPLES OF ECONOMICS

B. Com Hons Part-I

TOPIC -

LAW OF PROPORTIONALITY

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Law of Proportionality

Consumer's equilibrium is the stage where a consumer is getting maximum satisfaction at a given price.

Consumer's Equilibrium

↓	↓	↓
In case of one commodity ($P = MU$)	In case of two commodity (i) $\frac{MU_x}{P_x} = \frac{MU_y}{P_y}$ (ii) All the income spend	Indifference curve approach $MRS_{xy} = \frac{MU_x}{MU_y} = \frac{P_x}{P_y}$

When the price of consumer's goods are not equal, the consumer's equilibrium will be indicated by the following equation:-

$$\frac{MU_x}{P_x} = \frac{MU_y}{P_y} = \dots = MU_m$$

i.e.,

$$\frac{\text{marginal utility of Commodity 'X'}}{\text{Price of Commodity 'X'}} = \frac{\text{Marginal utility of Commodity 'Y'}}{\text{Price of Commodity 'Y'}}$$

$$= \text{Marginal utility of money.}$$

(i) In case of one commodity :-

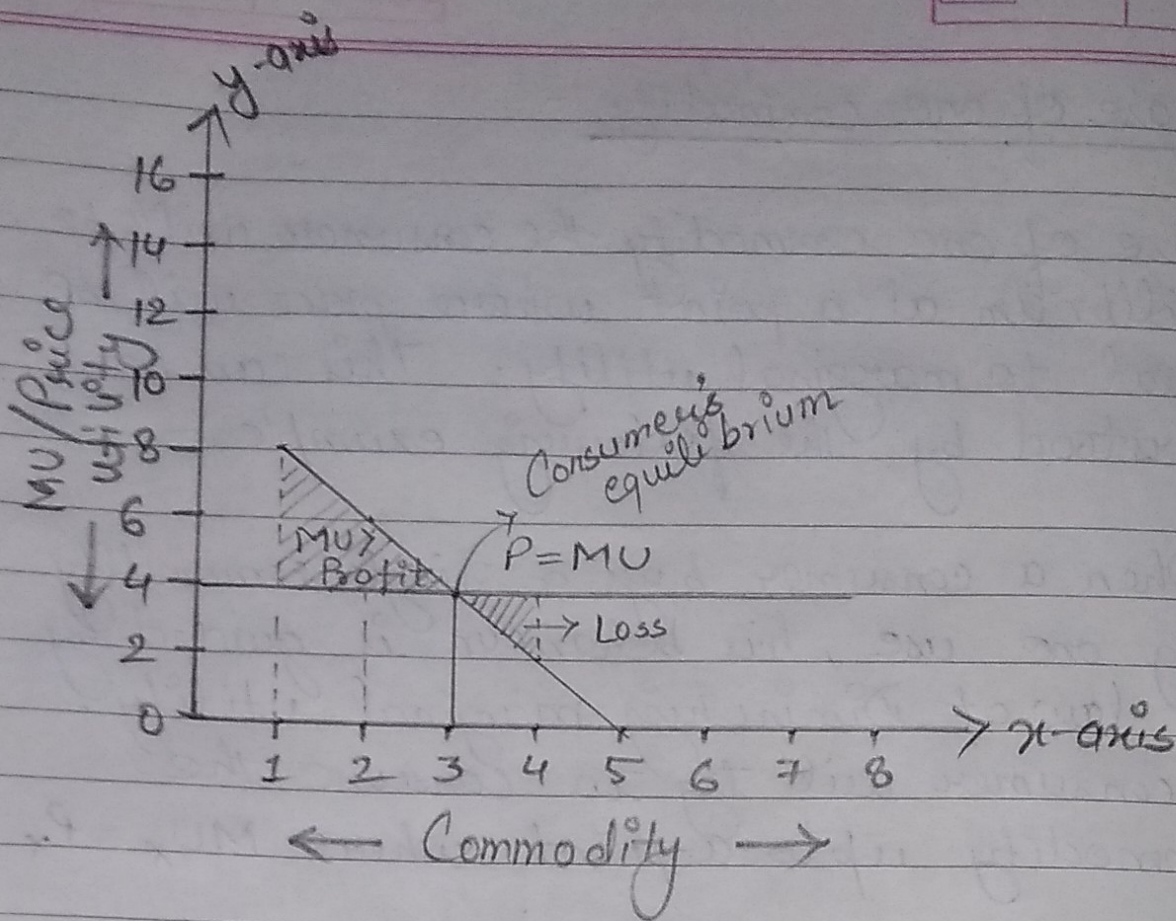
In case of one commodity the consumer will be in equilibrium at a point where price will be equal to marginal utility. This can be understood by the following example :-

When a consumer buys a single commodity having one use, his behaviour is guided by the law of Diminishing marginal utility. The consumer will try to consume the commodity upto a point where $MU_x = P_x$

Consumption (Units)	Marginal utility (utils)	Price (Rupees)
1	8	4
2	6	4
3	4	4
4	2	4
5	0	4

$P = MU$
(Consumer's equilibrium)

From the above table it is clear that at the 3rd consumption level Marginal utility is equal to Price. i.e., $MU = P$ so, this is the point where consumer getting maximum satisfaction so, at this point consumer is in equilibrium.



(ii) In case of two commodity :-

In case of two commodity the consumer will be in equilibrium at a point where the following conditions will be fulfilled -

$$(a) \frac{MU_x}{P_x} = \frac{MU_y}{P_y} \quad \text{--- (1)}$$

(b) All the income spend.

Units	MU _x	P _x	MU _y	P _y	$\frac{MU_x}{P_x}$	$\frac{MU_y}{P_y}$
1	20	2	24	3	10	8
2	18	2	21	3	9	7
3	16	2	18	3	8	6
4	14	2	15	3	7	5
5	12	2	12	3	6	4
6	10	2	9	3	5	3

Analysis :-

X	P	Y	P	Total
3 X	2 = 6	1 X	3 = 3	9
4 X	2 = 8	2 X	3 = 6	14
5 X	2 = 10	3 X	3 = 9	19
6 X	2 = 12	4 X	3 = 12	24

Suppose the consumer's has ₹ 24/-

$$\Rightarrow \frac{MU_x}{P_x} = \frac{MU_y}{P_y}$$

$$\Rightarrow \frac{10}{2} = \frac{15}{3}$$

$$\Rightarrow 5 = 5$$

All income spend = ₹ 24

6 of X & 4 of Y

6 x 2 4 x 3

$$\Rightarrow 12 \qquad \Rightarrow 12 \qquad = \boxed{24}$$