Consumers Equilibrium Through Utility Approach

1 Mark Question

1.What is meant by consumer's equilibrium? (Delhi 2011c, 2010,2009)

Ans. Consumer's equilibrium refers to a situation wherein a consumer gets maximum satisfaction from the purchase of the commodity with the given income.

3 Marks Questions

2. A consumer consumes only two goods and is in equilibrium. Show that price and demand for a good are inversely related. Explain using utility analysis.
or
A consumer consumes only two goods x and y and is in equilibrium. Price of x falls. Explain the reaction of the consumer through the utility analysis. (All India 2012)

Ans. If the price of x falls, the consumer gets greater Marginal Utility than in case of good y. Accordingly, he will spend more on x than y. As consumption of x rises, MU_x will fall. On the other hand, as consumption of y falls, MU_y will rise. The consumer will stop buying more of x in place of y only when

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

Hence, we can only say that price and demand are negatively related.

3. Explain the conditions of consumer's equilibrium with the help of utility analysis.(Delhi 2013)
or
Explain the conditions of consumer's equilibrium under utility analysis.(All India 2013)

Ans. Conditions of consumer's equilibrium using utility approach are as follows:

(*i*) In case of single commodity, $\frac{MU_x}{P_x} = MU \text{ of money}$

In case of two commodities, $\frac{MU_x}{P_x} = \frac{MU_y}{P_y} = MU \text{ of money}$

Where, MU = Marginal Utility

P = Price

Where, MU_x is Marginal Utility of commodity x; MU_y is Marginal Utility of commodity y; P_x is price of commodity X and P_y is price of commodity y.
(ii) Marginal Utility of money remains constant.
(iii) Law of Diminishing Marginal Utility must hold good, implying that Marginal Utility must decline as more of a commodity is consumed.

4. If a price of a good is given, how does a consumer decide as to how many units of that good to buy? Explain. (hots; Delhi 2012; All India 2009,2008)

Ans. Given price of a good, a consumer decides on the basis of the following conditions:

$$\text{MU = Price, i.e. } \frac{MU_x}{MU_M} = P_x$$

Total gain falls as more is purchased after equilibrium.
If $MU_x > P_x$

Consumer keeps on consuming more units. When he consumes more units, the additional utility derived from consuming x keeps on falling. He keeps on consuming till

$MU_x = P_x$ If $MU_x < P_x$.

He will decrease the consumption of x. When he decreases the consumption of x, the Marginal Utility of x will increase. He will keep on decreasing consumption of x till $MU_x = P_x$.

Thus, $MU_x = P_x$ is the condition for consumer's equilibrium in a single commodity case.

5.What is meant by consumer's equilibrium? State its condition in case of a single commodity. (Delhi 2006)

Ans. Consumer's equilibrium refers to a situation wherein a consumer gets maximum satisfaction from the purchase of the commodity with the given income.
Given price of a good, a consumer decides on the basis of the following conditions:

$$\text{MU = Price, i.e. } \frac{MU_x}{MU_M} = P_x$$

Total gain falls as more is purchased after equilibrium.
If $MU_x > P_x$

Consumer keeps on consuming more units. When he consumes more units, the additional utility derived from consuming x keeps on falling. He keeps on consuming till
$MU_x = P_x$ If $MU_x < P_x$.

He will decrease the consumption of x. When he decreases the consumption of x, the Marginal Utility of x will increase. He will keep on decreasing consumption of x till $MU_x = P_x$.

Thus, $MU_x = P_x$ is the condition for consumer's equilibrium in a single commodity case.

4 Marks Questions

6. Given the price of a good, how will a consumer decide as to how much quantity of that good to buy? Use utility analysis. (All India 2014)

Ans. Given price of a good, a consumer decided how much quantity of that good to buy on the basis of the following conditions: –

$$MU = \text{Price, i.e. } \frac{MU_x}{MU_M} = P_x$$

Total gains falls as more is purchased after equilibrium.

Case I: If MU_x(money) > P_x

Consumer keeps on consuming more units. When he consumes more units, the additional utility derived from consuming X keeps on falling. He keeps on consuming till $MU_x = P_x$

Case II: IfMU_x(money)< P_x

He will decrease the consumption of X, when he decreases the consumption of X, the Marginal Utility of X will increase. He will keep on decreasing consumption of X till $MU_x = P_x$.

Thus, MU_x(money) = P_x is the conditioner consumer's equilibrium in a single commodity case.

7.What are the conditions of consumer's equilibrium under utility analyis? (All India 2011)

Ans. Conditions of consumer's equilibrium using utility approach are as follows:

(*i*) In case of single commodity, $\frac{MU_x}{P_x}$ = MU of money

In case of two commodities, $\frac{MU_x}{P_x} = \frac{MU_y}{P_y}$ = MU of money

Where, MU = Marginal Utility

P = Price

Where, MU_x is Marginal Utility of commodity x; MU_y is Marginal Utility of commodity y; P_x is price of commodity X and P_y is price of commodity y.

(ii) Marginal Utility of money remains constant.
(iii) Law of Diminishing Marginal Utility must hold good, implying that Marginal Utility must decline as more of a commodity is consumed.

8. A consumer consumes only two goods x and y. State and explain the conditions of consumer's equilibrium, with the help of utility analysis. . (Hots; Delhi 2011)

Ans.

Conditions of consumer's equilibrium (using Marginal Utility analysis) are as follows:

(*i*) Marginal Utility per rupee $\left(\frac{MU_x}{P_x}\right)$ must be the same across all goods purchased by the consumer

Thus, $$\frac{MU_x}{P_x} = \frac{MU_y}{P_y}$$

In case this equation is not struck at equilibrium the consumer will keep switching between Good *x* and Good *y*.

(*ii*) Marginal Utility of money remains constant as it is like a measuring rod of 'rupee worth of satisfaction'. Otherwise, the whole model of consumer's equilibrium would collapse.

Thus, the equation for consumer equilibrium's is specified as under $\frac{MU_x}{P_x} = \frac{MU_y}{P_y} = MU_M$

(*ii*) Law of Diminishing Marginal Utility remains valid as Marginal Utility must decline when more of a commodity is consumed.

9. A Consumer consumes only two goods X and Y.At a consumption level of these two goods, he finds that the ratio of Marginal utility to price in case of X is higher than in case of Y. Explain the reaction of the consumer. (All India 2011)

Ans.

According to the question $\frac{MU_x}{P_x} > \frac{MU_y}{P_y}$ i.e. By spending all rupees on good *X*, the consumer gets greater Marginal Utility than in case of good *Y*. Accordingly, he will spend more on *x* than *y*. As consumption of *x* rises, MU_x will fall. On the other hand, as consumption of *Y* falls, MU_y will rise. The consumer will stop buying more of *X* in place of *Y* only when $\frac{MU_x}{P_x} = \frac{MU_y}{P_y}$. It is a point where equilibrium is struck.

6 Marks Questions

10. A consumer consumes only two goods. Explain consumer's equilibrium with the help Of Utility analysis. (Delhi 2014; Compartment 2014)
or
A consumer consumes only two goods A and B and is in equilibrium. Show that when price of good B falls, demand for B rises. Answer this question with the help of Utility analysis. (All India 2014, Foreign 2014)

Ans. In case of two commodities, consumer attains equilibrium, when
(i)

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

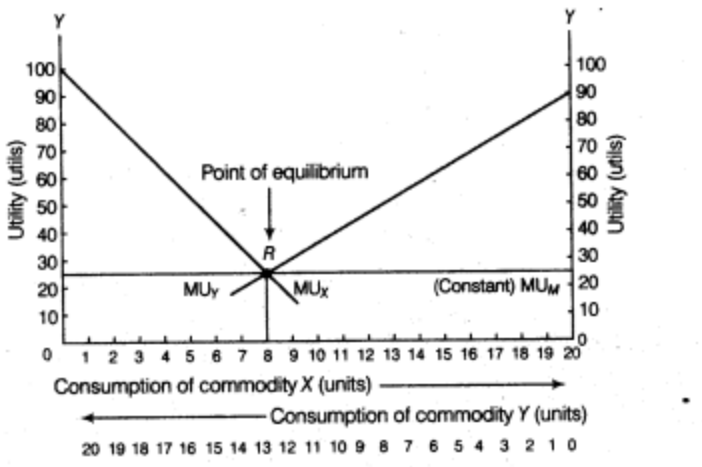
It implies that in state of equilibrium utility per rupee from good X must be equal to utility per rupee from good Y.
The above condition can also be written as

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

It implies that in state of equilibrium, ratio of Marginal Utilities of two commodities is equal to the ratio of their prices.

$$(ii)\ \frac{MU_x}{P_x} = \frac{MU_y}{P_y} = MU_M$$

It implies that in state of equilibrium utility per rupee obtained by the consumer from good X or good Y should be equal to Marginal Utility of money.
Assumption : $P_x = P_y = 1$ per unit)of utility analysis.



Consumer's equilibrium : two commodity case (curve is based on hypothetical data)

In case of two commodities, consumer attains equilibrium, when

$$(ii)\ \frac{MU_x}{P_x} = \frac{MU_y}{P_y} = MU_M$$

That is, Marginal Utility of a rupee spent on good A is equal to the Marginal Utility of rupee spent on good B, which is equal to the Marginal Utility of money,
i.e. $MU_{(A)}\ P_{(A)} = MUgPg = MU_m$

If price of good B falls, then the value of the fraction (i.e. MUgPg) increases. Mathematically, this implies.
$MUgPg > MU_aP_a = MU_m$

In such a situation, the demand for good B rises and consumer would increase his consumption of good B. He will continue to increase his consumption of good B untill the equality between the Marginal Utilities of each of the goods become equal to the Marginal Utility of money. At this situation, the equilibrium is restored. That is, $MU\hat{}P_A$ = $MUgPg = MU_m$

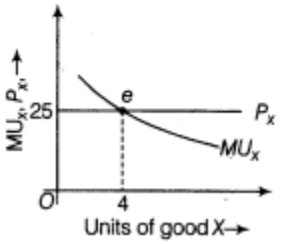
11. Explain the conditions of consumer's equilibrium in case of (i)single commodity (ii) two commodities Use utility approach. (Delhi 2009)

Ans. **(i) Consumer equilibrium in case of single commodity** Consumer is at equilibrium with respect to purchase of one good only where MU in terms of Money = Price:

$$\text{i.e. } \frac{\text{MU of Product}}{\text{MU of Rupee}} = \text{Price of product}$$

MU of one rupee is defined as, 'The extra utility when an additional rupee is spent on other available goods in general'.

Units of X	MU_x (in ₹)	P_x (in ₹)	
1	40	25	
2	35	25	
3	30	25	
4	25	25	Consumer equilibrium
5	20	25	
6	15	25	



(ii) Consumer's equilibrium in case of two commodities

12.A consumer consumes only two goods. What are the conditions of consumer's equilibrium in the utility approach? Explain the changes that will take place when the consumer is not at equilibrium. (Delhi 2009c)

Ans. Conditions of Consumer's equilibrium

(*i*) In case of single commodity, $\frac{MU_x}{P_x} = MU \text{ of money}$

In case of two commodities, $\frac{MU_x}{P_x} = \frac{MU_y}{P_y} = MU \text{ of money}$

Where, MU = Marginal Utility

P = Price

Where, MU_x is Marginal Utility of commodity x; MU_y is Marginal Utility of commodity y; P_x is price of commodity X and P_y is price of commodity y.

(ii) Marginal Utility of money remains constant.

(iii) Law of Diminishing Marginal Utility must hold good, implying that Marginal Utility must decline as more of a commodity is consumed. If

$$\frac{MU_x}{P_x} > \frac{MU_y}{P_y}$$

By spending a rupee on good x, the consumer gets greater Marginal Utility than in case of good y. accordingly, he will spend more on x than y. As consumption of x rises, MU_x will fall. On the other hand, as consumption of y falls, MUy will rise. The consumer will stop buying more of x in place of y only when

$$\frac{MU_x}{P_x} = \frac{MU_y}{P_y}, \text{ and vice-versa.}$$