

## Unit - 2 Lecture - 7

### The Theory of Consumer Behaviour

Consumer is assumed to be rational. Given his income and prices of the commodities in the market, he will plan his expenditure in such a way that it gives him maximum possible satisfaction or utility.

Utility is the want satisfying power of a commodity.

There are two approaches which are used to explain the behaviour of the consumer in the market; one is 'cardinal approach' and the other is 'ordinal approach'.

While the cardinalist school postulated that utility can be measured, the ordinalist school believed that utility is not measurable. According to them preference of the consumers can be ranked.

The cardinal theory is based on a number of assumptions.

- ① Consumer is rational
- ② Utility can be measured
- ③ Marginal utility of money is constant.
- ④ The marginal utility gained from successive units goes on diminishing.

Lets now try to understand the concept of marginal utility (MU).  
 $MU_x$  is the marginal utility of the commodity  $x$ .

e.g

Let  $x$  is apple

A consumer is hungry and he is given apples to satisfy his hunger.

TU is the sum total of all the utility or satisfaction that the consumer gets after consuming all the apples.

$$TU = f(x_1, x_2, x_3 - \dots x_n)$$

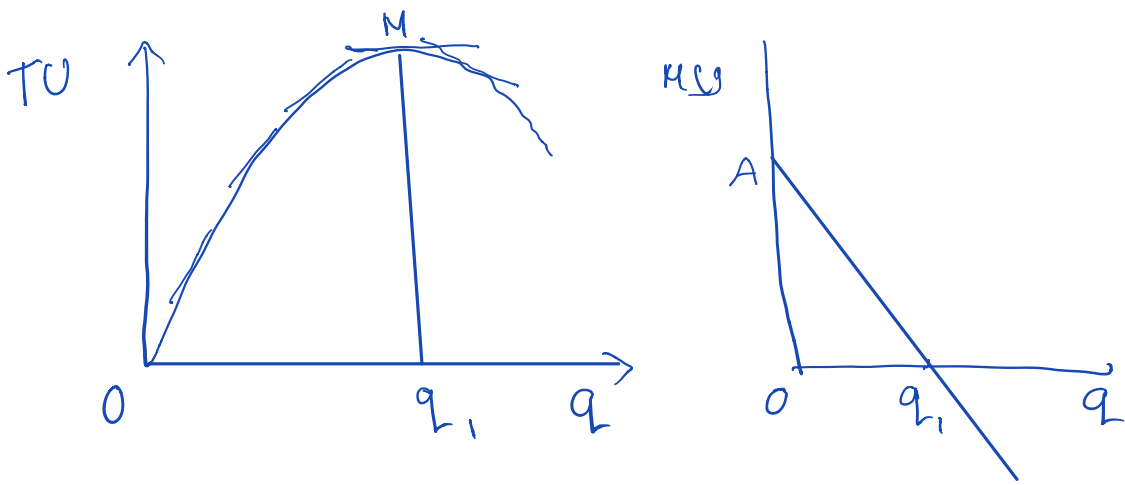
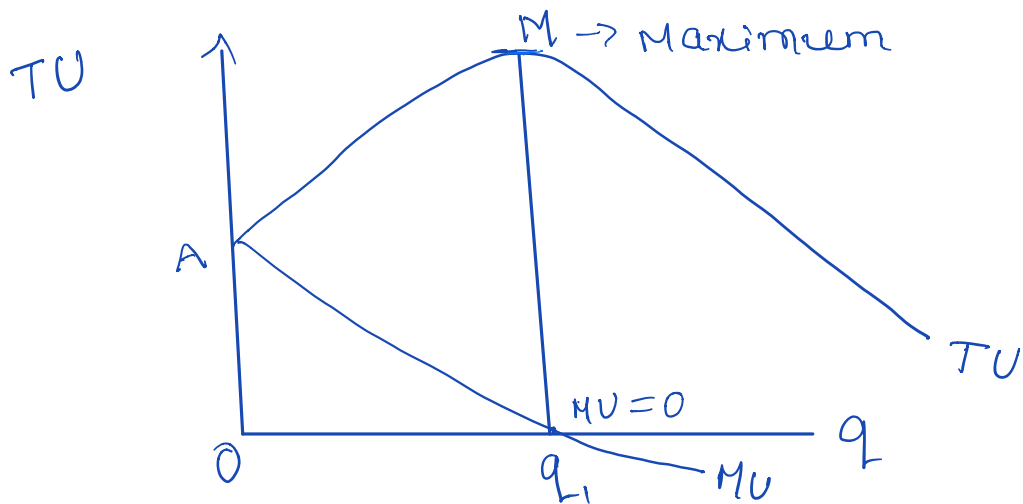
Unit	TU	MU		
1	20	-		
2	35	15	(35-20)	$MU = \frac{\partial TU}{\partial q}$
3	45	10	(45-35)	
4	53	08	(53-45)	
5	58	05	(58-53)	
6	60	02	(60-58)	
7	60	0	(60-60)	
8	57	-3	(57-60)	

In the above table you can clearly see that Marginal utility ( $MU_x$ ) is the change in total utility ( $TU_x$ ). The difference between  $TU$  &  $MU$  is -

$TU$  is the sum total of utility from consumption of all the units of  $x$ .  
 $MU_x$  is the utility of individual units of  $x$ .

The above table shows that when a consumer consumes more & more of a product, the marginal utility of successive units of the product goes on decreasing. This is called

'The law of diminishing marginal utility'.  
 The graphs below show the relation between TU and MU.



MU is the change in total utility.

Now let's try to understand how does a consumer attain equilibrium when utility is measured in numbers.

Let us assume that the consumer is buying a single commodity  $x$ .

$$TU_x = f(q_x)$$

Maximise  $TU - P_x q_x$

$$\frac{\partial TU_x}{\partial q_x} - \frac{\partial P_x q_x}{\partial q_x} = 0$$

$$\frac{\partial TU_x}{\partial q_x} = MU_x$$

$P_x \rightarrow$  price of  $x$   
 $q_x \rightarrow$  quantity of  $x$ .  
 $P_x q_x \rightarrow$  consumer's expenditure on  $x$ .

So  $MU_x - P_x = 0$   
 or  $MU_x = P_x$

When  $MU_x > P_x$ , the consumer can purchase more of  $x$  & increase his utility. When  $MU_x < P_x$ , he can curtail his purchase until he is able to equate  $MU_x$  with  $P_x$ .

So in the cardinal approach, a consumer attains maximum satisfaction when  $MU_x = P_x$ .

Note:

When  $U = f(x, y)$

$$MU_x / P_x = MU_y / P_y$$

Nash: