

## TUTOR MARKED ASSIGNMENT

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Course Code	:	ECO - 06
Course Title	:	Economic Theory
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Coverage	:	All Blocks

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**Maximum Marks: 100**

**Attempt all the questions.**

1. What do you understand by microeconomics and macroeconomics? Distinguish between Positive versus Normative economics. (20)
  
2. Describe the law of Equi-marginal utility. Explain with the help of diagram, how does a consumer attain equilibrium? (20)
  
3. Explain the concept of indifference curves. What are its properties? (20)
  
4. Explain a firm's short period equilibrium under perfect competition. (20)
  
5. What is oligopoly? Explain its characteristics. (20)



# ASSIGNMENT SOLUTIONS GUIDE (2016-2017)

## E.C.O.-6

### Economic Theory

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**Attempt all the questions.**

**Q. 1. What do you understand by microeconomics and macroeconomics? Distinguish between Positive versus Normative economics?**

**Ans.** Economics is the social science that studies the production, distribution, and consumption of goods and services.

According to Robbins, "Economics is the science which studies human behaviour as a relationship between ends and scarce means which have alternative uses."

Scarcity means that available resources are insufficient to satisfy all wants and needs. Economics examines how people use their scarce resources in an attempt to satisfy their unlimited wants.

Would you like a Grand Mercedes Benz, a sea-shore villa or a ocean journey? Would you like more free time, more sleeping time and more money to spend? Who wouldn't? The problem is simply that the resources available to satisfy these wants, or desires, are virtually limited. If there is absence of scarcity and alternative uses of available resources there is no economic problem.

There are only a limited number of resources such as workers, machines, factories, raw materials etc. Yet there are a number of different ways in which they could be used. Say water can be used for-gardening, washing, drinking, generating electricity etc.

Similarly people only have a limited amount of money. Yet they have lot of needs and wants to satisfy, say limited money can be used for shopping, holidays, investment and saving etc.

An important point to note out is that satisfaction of a want requires the use of some resources called the "Drivers to Satisfaction". Any specific want may be satisfied with various resources or a specific resource can be used to satisfy many wants. The basic fact is that available resources are never sufficient to satisfy all our recurring needs and ever increasing wants.

Micro-economics is the study of decisions that people and businesses make regarding the allocation of resources and prices of goods and services. This means also taking into account taxes and regulations created by governments. Micro-economics focuses on supply and demand and other forces that determine the price levels seen in the economy. For example, micro-economics would look at how a specific company could maximize its production and capacity so it could lower prices and better compete in its industry.

Macro-economics, on the other hand, is the field of economics that studies the behaviour of the economy as a whole and not just on specific companies, but entire industries and economies. This looks at economy-wide phenomena, such as Gross National Product (GDP) and how it is affected by changes in unemployment, national income, rate of growth, and price levels. For example, macro-economics would look at how an increase/decrease in net exports would affect a nation's capital account or how GDP would be affected by unemployment rate.

While these two studies of economics appear to be different, they are actually interdependent and complement one another since there are many overlapping issues between the two fields. For example, increased inflation (macro effect) would cause the price of raw materials to increase for companies and in turn affect the end product's price charged to the public.

This type of economics is made up of positive statements which can be accepted or rejected through applying the scientific method.

Normative economics (also called Policy Economics) deals with how the world ought to be. In this type of economics, opinions or value judgements - known as normative statements-are common. "We should reduce taxes" is an example of a normative statement.

**Q. 2. Describe the law of Equi-marginal utility. Explain with the help of diagram. How does a consumer attain equilibrium?**

**Ans.** The consumer equilibrium refers to a situation when a consumer gets maximum satisfaction out of the money income he spends on a commodity. At this position he maximizes his total utility derived. Once he attains this position he would never like to deviate from this position.

Consumer equilibrium is attained when the marginal utility derived from the commodity equals to the per unit price paid for that commodity. Symbolically,  $MU_x = P_x$  where

$MU_x$  = marginal utility gained from commodity X

$P_x$  = per unit price paid for commodity x.

**The Law of Equi-Marginal Utility**

This law gives to a very difficult question that is "In what way should a person allocate his limited resources among different uses so as to maximize the total utility derived from consumption."

Consumer equilibrium is said to be established when the consumer has allocated his resources among the various users so that his total utility will be maximum and he has no motivation for change.

**The Law of Equiy:** Marginal utility states that "a consumer will reach the stage of equilibrium when the marginal utilities of the various commodities that he consumes are equal."

According to **Marshall**, if a person has a thing which he can put to several uses, he will distribute it among these uses in such a way that it has the same marginal utility in all.

**Explanation:** As a consumer buys an variety of goods like food, clothing, jewellery, etc., the more he gets of one good the less he will buy the another good because of his limited money at disposal. Now the marginal utility of the good declines with increased purchases; marginal utility of other goods would be high; so the consumer would gain by substituting among goods with higher marginal utility for goods with lower marginal utility. The process of substitution shall continue until he arrives at the optimum combination which gives him maximum total utility.

Units	M.U. of x	MU of y	MU of z
1	10	14	18
2	8	12	15
3	7	10	12
4	4	8	8
5	2	6	5
6	0	4	3

We assume that each of the commodity costs Re. 1 each. In order to reach the equilibrium the consumer should that combination where  $MU_x = MU_y = MU_z$ . This situation can be attained when consumer buys the following combination [2x + 4y + 4z] for Rs. 10. At this stage the derived total utility equals to (10 + 8) + (12 + 12 + 10 + 8) + (18 + 15 + 12 + 8) = 115 utils. This is the maximum utility he can derive from the given money.

### Modern View of Law of the Equimarginal Utility

The major disadvantage of classical view is their assumption that prices of all the commodities are same, which is not possible. So a new concept was given by modern economist called as “law of proportional marginal utility”.

According to this the two factors that influence the consumer behaviour are:

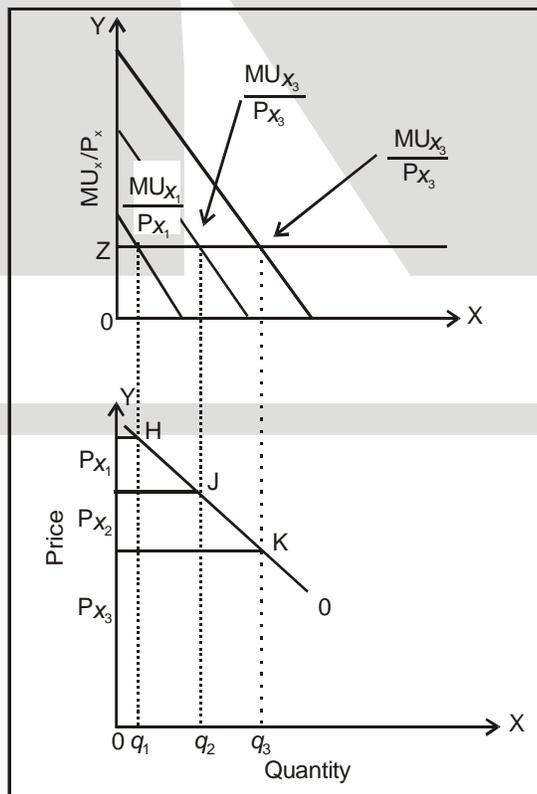
- (a) The marginal utility of the various goods to be consumed.
- (b) The prices of various goods.

This law states that consumer will be in equilibrium where marginal utility of money expenditure on all goods consumed is the same. The marginal utility of expenditure on a good equals the marginal utility of a good divided by the price of the good.

In order to be in equilibrium, the ratio of marginal utility of good X to its price is equal to the ratio of marginal utility of good Y to its price and so on.

$$\text{Symbolically, } \frac{MU_x}{P_x} = \frac{MU_y}{P_y} = \frac{MU_z}{P_z}$$

Quantity	MU <sub>x</sub>	P <sub>x</sub>	Ratio	MU <sub>y</sub>	P <sub>y</sub>	Ratio	MU <sub>z</sub>	P <sub>z</sub>	Ratio
1	8	2	4	14	5	2.8	9	3	3
2	6	2	3	10	5	2	6	3	2
3	4	2	2	6	5	1.2	4	3	1.33
4	2	2	1	4	5	.8	3	3	1
5	1	2	.5	2	5	.4	2	3	.66



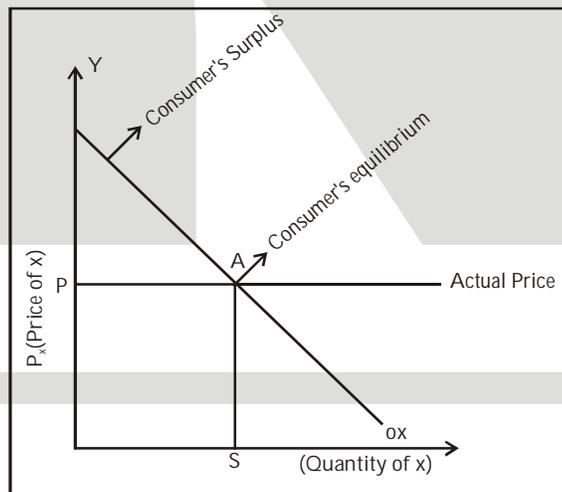
### Limitations of Law

- (a) Assumption of rationality is not practical because individuals do not prefer to make such arithmetical calculations and experiments.
- (b) Ignorance on the part of the consumer always results in other equilibrium position. They are not aware of substitute goods and accept whatever is made available.
- (c) Because of habits and fashion trends consumer goes for non-economic considerations rather than by economic considerations.
- (d) Goods are indivisible.
- (e) Assumption is that there is a particular time period during which consumer makes his purchases, while there are many commodities of durable nature having long duration time period.
- (f) Utility can not be measured cardinally.
- (g) Utility is not additive.

We know a consumer intends to pay price for a commodity equal to marginal utility. We also know that marginal utility of a commodity tends to decrease as more and more of it is purchased in fact. Marginal utility curve in a synonym of demand curve showing inverse relationship between price and quantity of a commodity. For each subsequent unit, the consumer intends to pay less and less price, everytime equating price with the diminishing marginal utility of the commodity. However in the market each unit is not purchased at a different price. One price is paid for all the units actually purchased.

The following table illustrate the situation of consumer equilibrium.

Units of x	MV <sub>x</sub>	P <sub>x</sub> or the Price Consumer intend to save	Actual Prices
1	100	10	4
2	80	8	4
3	60	6	4
4	40	4	4



The consumer's equilibrium is point A where the actual price of the commodity X is equal to the price consumer utility to buy or  $MV_c = P_x$ .

### Q. 3. Explain the concept of indifference curves. What are its properties?

**Ans.** An indifference curve shows combination of two products that yields the same satisfaction to the consumer. Thus a consumer is indifferent between the combinations indicated by any two points on one "indifference curve".

**Indifference Schedule:** An indifference schedule shows different combination of two goods which represent equal satisfaction as shown in table:

Combination	Grapes (in '00 gms)	Oranges (units)
1st	20+	1
2nd	14+	2
3rd	9+	3
4th	5+	4
5th	3+	5
6th	2 +	6

In the given table six combinations of grapes and oranges are shown. Combination 1st contains 2000 gms of grapes and 1 orange. If the consumer wants to have 2 units of oranges, money income remaining unchanged, he will have to buy less units of grapes. The 2nd combination contains 1400 gms of grapes and 2 oranges, which give equal level of satisfaction as combination 1st. So, all these combinations yield the same satisfaction to the consumers.

### Graphic Representation of Indifference Curve

In A, B, C, D, E and F are the six different combinations of grapes and oranges. By joining these combinations we get a curve called Indifference Curve (IC). All the points A, B, C, D, E and F yield same satisfaction to the consumer, therefore, it is called Indifference Curve.

### Indifference Map

An Indifference Map is a collection of indifference curves corresponding to different levels of satisfaction. As the consumer moves along the arrow OE, he is climbing a 'utility mountain', moving over higher utility levels and crossing over higher equal utility contours which we call indifference curve. A contour line is an imaginary line on a map connecting all places at equal heights above the sea-level. Similarly, an indifference curve connects all combinations of two yielding equal satisfaction. If a consumer moves along the arrow OE, he attains a certain level of utility after reaching  $IC_1$ . Along  $IC_1$ , the level of satisfaction is the same. However, as he further climbs the utility mountain and reaches  $IC_2$ , he gets a higher level of satisfaction. Indifference map shows that consumer's entire taste pattern is given and it does not change.

### Properties of Indifference Curves

**1. Indifference curves always slope downwards from left to right:** We have defined indifference curve as a curve on which all the combinations of two commodities give a consumer equal satisfaction. It follows that if a consumer wants to have more quantity of commodity X he will have to give up some quantity of commodity Y in order to derive the same level of satisfaction. If a consumer could have more of one commodity without a corresponding fall in another commodity, he would have achieved a higher level of satisfaction. Plotting on a graph the different combinations that contain more of one commodity and less of another would give a downward sloping curve.

**2. Indifference curves can never intersect each other.**

The reasoning behind this assumption is that

- (a) each indifference curve represents a different level of satisfaction.
- (b) each point on an indifference curve gives a level of equal satisfaction.

**3. Indifference curves are always convex towards the origin O:** This assumption about the shape of indifference curves is based on the principle of Diminishing Marginal Rate of Substitution. It implies that for a successive unit increase in the quantity of commodity X the quantity of commodity Y falls.

The quantity of commodity Y which the consumer is ready to give up in order to get an additional unit of commodity X is known as the marginal rate of substitution of Y for X. Marginal rate of substitution of Y for X goes on diminishing with every successive increase in the units of commodity X. Hence indifference curves are convex to the origin O.

If an indifference curve was not to be a convex curve, alternatively it would either be a concave curve or a straight line.

**Q. 4. Explain a firm's short period equilibrium under perfect competition.**

**Ans. Equilibrium of the firm**—The most popular method of finding out a firm's equilibrium is known as marginal cost and marginal revenue approach. In order to know the position of maximum profit a firm compares marginal cost with marginal revenue.

(a) **If  $MR > MC$  and  $MC$  is rising, the firm will increase its output:** A firm will continue its production as long as its  $MR > MC$  because on each such unit he is getting more in revenue from its sale than it adds to costs in getting that produced. Hence the unit of output is adding to the profits.

(b) **If  $MR < MC$  and  $MC$  is rising, the firm will decrease its output:** A firm will decrease its output if the marginal revenue of a unit of output is less than the marginal cost. It is because on each such unit of output he is incurring more cost than it is getting as revenue. Hence the unit of output is adding to losses.

(c) **If  $MR = MC$  and  $MC$  is rising, the firm has reached its equilibrium output:** The firm will maximize profits or minimize losses by producing at that point where marginal revenue equals marginal cost. A firm would not like to change this situation and this will be the situation of firm's equilibrium.

It is necessary but not sufficient condition of firm's equilibrium. It must fulfil the second condition as well. It is that  $MC$  curve must cut the  $MR$  curve from below or the slope of  $MC$  curve must be steeper than the slope of the  $MR$  curve.

So the conditions of equilibrium of a firm are:

(a)  $MC = MR$

(b)  $MC$  curve intersects  $MR$  curve from below.

### EQUILIBRIUM OF A FIRM IN SHORT RUN

Short run is that time period in which there are both variable and fixed factors of production. Only quantity of variable factors can be changed, but not of the fixed factors.

Short run equilibrium of a firm is attained at a level of output which satisfies the following two conditions:

1.  $MC = MR$
2.  $MC$  cuts  $MR$  from below.

When a firm is in short run equilibrium, a perfectly competitive firm may find itself in any of the following conditions:

- (a) It suffers loss.
- (b) It earns profit.
- (c) It breaks even.

**1. It Earns Profit:** A firm earns profit if at the equilibrium level of output; its average revenue ( $AR$ ) is more than its ( $AC$ ).

From the figure we conclude that

Equilibrium Point =  $E (MR = MC)$

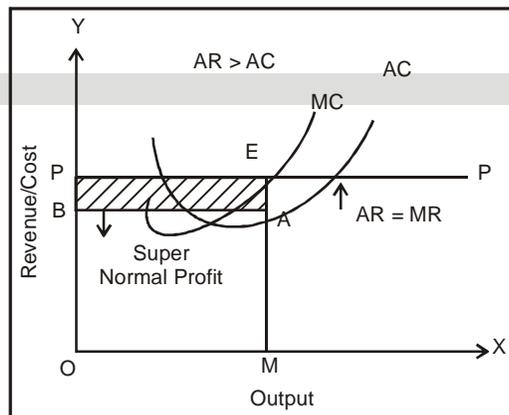
Equilibrium Output =  $OQ$

Average Revenue =  $QE$

Average Cost =  $QK$

Therefore profit per unit =  $QK - QE = EK$

Total Profit =  $EK \times OQ = \text{Area PEKT}$

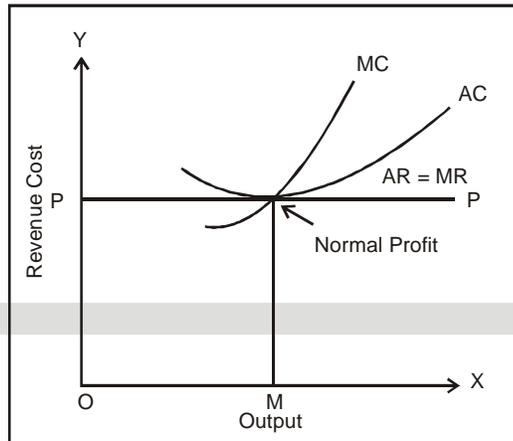


**2. It Breaks Even:** A firm breaks even when at the equilibrium level of output; its average revenue ( $AR$ ) is equal to ( $AC$ ).

Average Revenue =  $QE$

Average Cost =  $QE$

Therefore the firms break even (no profit and no loss).



**3. It Suffers Loss:** A firm incurs loss if at the equilibrium level of output; its average cost (AC) is more than the average revenue (AR) or the market price.

From the figure we can see that

Equilibrium point =  $E (MR = MC)$

Equilibrium output =  $OQ$

Average revenue =  $QE$

Average cost =  $QK$

Therefore loss per unit =  $QK - QE = EK$

Total loss =  $EK \times OQ = \text{Area PEKT}$

Shut down point for a perfect competitive firm:

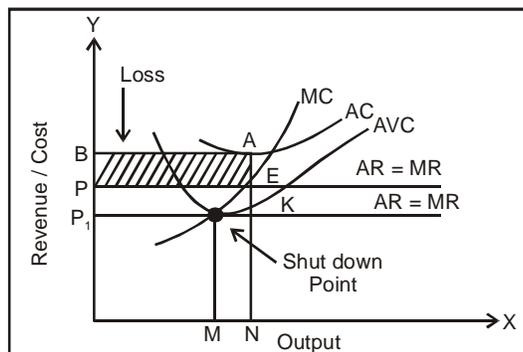
We know that at the point where  $AC > AR$ , then firm incurs losses. But the question is that at this point whether the firm should continue to produce or should it shut down?

We know that total cost of any firm consist of fixed cost and variable cost. Fixed cost once incurred, cannot be recovered even if firms shuts down. Therefore the decision depends upon the behaviour of variable cost.

A firm will continue to produce if at the equilibrium level of output the Average Revenue of the firm is more than the Average Variable Cost. It means  $AR > AVC$ . Otherwise the firm will shut down.

The firm will not produce at the equilibrium output where Average Variable Cost is more than the Average Revenue. If it produces and sells at the market price  $QE$ , it suffers additional loss of  $EF$  in addition to loss of fixed cost.

But if the equilibrium level of output where  $AVC = OQ$ , whereas  $AR = QE$ . By continuing the production, the firm not only recovers not only whole of its variable cost, but in addition also recovers a part of their fixed cost. Its total losses would be less if it continues production than if it were to close down its operations.



**Q. 5. What is oligopoly? Explain its characteristics.**

**Ans.** Oligopoly is a market situation with only a few large sellers. The word oligopoly is derived from two Greek words 'Oligoi' means 'few' means and 'poly' means 'control'. Thus oligopoly is a market situation where a few large firms sale either homogenous or differentiated products. In India there are several examples of oligopoly like Airlines, (Air India, Indian Air-lines, Jet Airways, Sahara Airways).

**Definition of oligopoly**

In the words of P.C.Dooley, "An Oligopoly is a market of only a few sellers, offering either homogenous or differentiated products. There are so few sellers that they recognize their mutual dependence."

**Features or Characteristics of Oligopoly**

The followings are the main features or characteristics of oligopoly:

**Few Sellers and Many Buyers:** Oligopoly is a market structure in which few firms dominate the industry. For example, in India four companies Maruti, Hyundai,Cielo and Tata, produce 90 per cent of small cars. The products sold by oligopolist firms can either be homogenous or differentiated. The firms can influence the price and output by their actions. The number of buyers in oligopoly will be quite large.

**Homogenous or differentiated product:** Firms in Oligopolistic industry may produce either homogenous or differentiated products. If the firms produce a homogenous product like cement or steel the industry is called a pure or perfect oligopoly. If the firms produce a differentiated product like automobiles, the industry is called differentiated or imperfect oligopoly.

**Mutual Interdependence:** A very important feature of oligopoly is mutual interdependence of the firms. It means that firms are significantly affected by each other's price and output decisions. In monopoly and competition firms make independent decisions and take actions without considering how these firms will affect other firms and how, in turn, other firm's reactions will affect them. But an Oligopolistic firm cannot take independent decisions.

**Lack of Uniformity:** Another feature of Oligopoly is lack of uniformity in the size of firms. Some firms may be very large and others may be small. For example, the share of Maruti Udyog is 70 per cent in small car segment of the automobile industry. While the share of Ceilo or Tata is comparatively much less.

**Advertisement:** An oligopoly firm has to incur much expenditure on advertisement. The expenditure on advertisement is aimed primarily at shifting the demands in favour of the advertised product. Under oligopoly, advertising can become a life and death matter, where a firm which fails to keep up with the advertising budget of its competitors may find its customers drifting to rival products.

**Elements of Monopoly:** In differential or imperfect oligopoly, the firms enjoy some monopolistic power. The existence of product differentiation creates "Brand Loyalty" on the part of the customers. Every firm has monopoly in its own brand.

**Existence of Price Rigidity:** Another feature of oligopoly is existence of price rigidity. The term price rigidity means that firms would not like to change the price. If a firm tries to reduce the price the rivals will also retaliate by reducing their prices, so it will not produce any advantage, and vice versa.

**Keen Competition:** The oligopoly is characterized by the presence of keen competition among rivals. Under oligopoly, the number of sellers is so small that any move by one seller immediately affects the rival sellers. As a result, each firm keeps a close watch the activities of the rival firms and prepares itself to counter it.

**Uncertainty:** In oligopoly, due to interdependence of firms on each other, no certain prediction about the behaviour of different firms can be made.

**Some Barriers to Entry:** Usually an Oligopolistic firm is also characterized by barriers to entry in the industry. Some common barriers to entry are economies of scale , absolute cost advantage of old firm, patent rights control over important inputs , preventive price and prevailing excess capacity such barriers prevents the entry of new firms.