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1.1 INTRODUCTION

Every field of study has its own language and its own way of thinking. *For example,* mathematics talks about algebra, science deals with experiments, accounts deal with profit and loss and so on. *Economics is no different.* An Economist's language consists of terms like demand, supply, market, etc. In the coming chapters, you will come across many new terms and some familiar words that economists use in specialized ways.

The most important purpose of this book is to help you understand an economist's way of thinking. Of course, as one cannot become a mathematician overnight, in the same way, learning to think like an economist will take some time. Yet with a combination of theory, numericals and live examples, this book will give you ample opportunity to develop and practice this skill.

Before we proceed to the meaning of economics, let us first understand the meaning of economy and reason for studying economics.

What is an Economy?

You must have observed many activities happening around you in your daily life. For instance, you may have seen factories, mines, shops, offices, flyovers, railways, etc. All these institutions and organisations may be collectively called an economy. Such units enable people to earn an income and, at the same time, help to produce goods and services which people require for use.

An economy is a system which provides people, the means to work and earn a living.

It is an organisation that provides living to the people. In this task, it makes use of the available resources to produce those goods and services that people want. *For example,* Indian economy consists of all sources of production in agriculture, industry, transport and communication, banking, etc.

Vital Processes of an Economy

Economy is a system which provides living to the people. For this objective to be fulfilled, it is necessary that every economy should undertake three economic activities:

1. Production
2. Consumption
3. Investment or Capital Formation.

These economic activities are known as the essentials or the vital processes of an economy.

On the basis of nature of economic activities, economies can be broadly classified as: Market Economy and Centrally Planned Economy. It is given in Power Booster Section for knowledge enrichment.

Why Study Economics?

We go to a cinema hall to watch a movie. We go to a restaurant to eat. We attend school to get educated or to be able to earn a living. It means, every activity is conducted for a specific reason. Economics is studied because it enables us to understand different aspects of the economy.

However, ***the main reason for study of economics can be simplified to a single word — Scarcity.*** We all know, human wants are more than the available resources. So, there is a need to allocate these scarce resources for the satisfaction of never ending human wants. *Hence, Economics is concerned with selection of resources under conditions of scarcity.*

Let us now understand the concept of 'Scarcity', the root of all economic problems.

1.2 SCARCITY

Scarcity refers to the limitation of supply in relation to demand for a commodity.

It refers to the situation, when wants exceed the available resources. As a result, goods are not readily available and society does not have enough resources to satisfy all the wants of its people. Scarcity is ***universal,*** i.e. every individual, organisation and economy faces scarcity of resources.

Scarcity of resources calls for economizing of resources. ***Economizing of resources refers to making optimum use of the available resources.*** There is a need to economize, as we have to satisfy our unlimited wants out of limited resources.

Scarcity is not the only problem!

- Limitation of resources is not the only problem. In addition to being scarce, resources also have alternate (different) uses. *Alternate use of resources means that a resource can be put to more than one use.*

- *For example,* we all know, petrol is scarce in relation to its demand. But there is one more problem. In addition to its scarcity, it is used not only in vehicles, but also in machines, railway engines, airplanes, generators, etc.
- Whenever, a commodity is chosen for one use, other valuable uses will have to be rejected. *It gives rise to the problem of choice.*

For, "Scarcity and Choice go together", refer HOTS.

1.3 ECONOMIC PROBLEM

As we know, human wants are unlimited, but the means to satisfy them are limited. Therefore, all our wants cannot be fulfilled. In order to maximise satisfaction, every consumer exercises choice, as to which goods should be consumed and in what quantity. *An economic problem is basically a problem of choice.*

Economic Problem is a problem of choice involving satisfaction of unlimited wants out of limited resources having alternative uses.

Reasons for Economic Problem

The 3 main reasons for existence of economic problems are:

(i) **Scarcity of Resources:** Resources (i.e. land, labour, capital, etc.) are limited in relation to their demand and economy cannot produce all what people want. It is the basic reason for existence of economic problems in all economies. Scarcity is universal and applies to all individuals, organisations and countries.-There would have been no problem, if resources were not scarce.

(ii) **Unlimited Human Wants:** Human wants are never ending, i.e. they can never be fully satisfied. As soon as one want is satisfied, another new want emerges. Wants of the people are unlimited and keep on multiplying and cannot be satisfied due to limited resources. ***Human wants also differ in priorities,*** i.e. all wants are not of equal intensity. For every individual, some wants are more important and urgent as compared to others. Due to this reason, people allocate their resources in order of preference to satisfy some of their wants. *If all human wants had been of equal importance, then it would have become impossible to make choices.*

(iii) **Alternate Uses:** Resources are not only scarce, but they can also be put to various uses. It makes choice among resources more important. *For example,* petrol is used not only in vehicles, but also for running machines, generators, etc. As a result, economy has to make choice between the alternative uses of the given resources.

Resources Vs Human Wants

Features of Resources:

(i) They are scarce, i.e. their supply is limited in relation to demand.
(ii) They have alternative uses.

Features of Human wants:

(i) They are unlimited, i.e. they can never be fully satisfied.
(ii) They differ in priorities.

1.4 MEANING OF ECONOMICS

Economics is a social science which studies the way a society chooses to use its limited resources, which have alternate uses, to produce goods and services and to distribute them among different groups of people.

Why Economics is considered a social science?

- The term 'Science' stands for any systematic and organised body of knowledge. Economics is also a science as it is a systematic and organised study of economic behaviour of human beings.
- However, it is not an exact science like Physics and Chemistry as it deals with the study of human behaviour. Therefore, it is known as social science.

What is Economics all about?

Economics is all about making choices in the presence of scarcity. It studies human behaviour as a relationship between means (resources) and ends (human wants). Economics aims to ensure that the resources are used in the best possible manner.

1.5 POSITIVE ECONOMICS AND NORMATIVE ECONOMICS

Positive Economics (or Science)

Positive economics studies the facts of life, i.e., it deals with 'things as they are'. ***Positive Economics deals with what are the economic problems and how are they actually solved.*** *For example,* India is an overpopulated country or prices are constantly rising.

*Positive statements describe **what was, what is** or **what will be** under the given state of circumstances. These statements do not pass any value judgements.*

Positive Economics is neutral between ends

Positive economics remain strictly neutral with respect to ultimate ends. ***It avoids economic value judgements.*** *For example,* a positive economic theory might describe that manufacturing and sale of cigarettes is injurious to health, but it does not provide any instruction or judgement on what policy ought to be followed to avoid cigarettes in an economy.

According to Robbins, economics is not concerned with moral or ethical questions and economist should analyse the things as they are and has no right to give judgement.

Do not confuse statements of Positive Economics as statements of truth

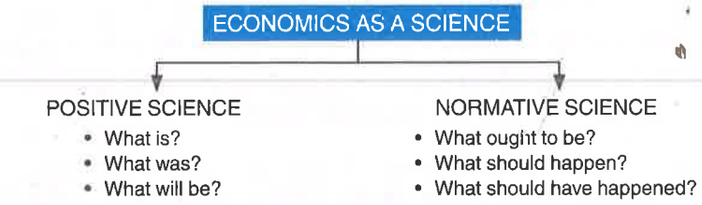
Positive economics statements should not be confused as statements of truth. *They may be true or false. For example,* If Paras says that India is the most populated country in the world and Saksham says that China is the most populated country, then both are positive statements. However, Paras is wrong and Saksham is right.

The point to be noted is that positive statements can be verified as true or false by comparing with actual data.

Normative Economics (or Science)

Normative economics tells us 'what ought to be'. ***Normative Economics deals with what ought to be or how the economic problems should be solved.*** *For example,* India should not be an overpopulated country or prices should not rise.

Normative economics discusses what are desirable things and should be realised and what are undesirable things and should be avoided. It gives decisions regarding value judgements.



Difference between Positive Economics and Normative Economics

Basis	Positive Economics	Normative Economics
Meaning	It deals with what is or how the economic problems are actually solved.	It deals with what ought to be or how the economic problems should be solved.
Verification	It can be verified with actual data.	It cannot be verified with actual data.
Purpose	It aims to make real description of an economic activity.	It aims to determine the ideals.
Suggestive	It is based upon facts, and thus, not suggestive.	It is based upon individual opinion and therefore, it is suggestive in nature.
Value Judgements	It does not give any value judgements, i.e. it is neutral between ends.	It gives value judgements.
Examples	1. Prices in Indian economy are constantly rising 2. There are inequalities of income in our economy.	1. India should take steps to control rising prices. 2. Income inequalities should be reduced.

1.6 MICROECONOMICS AND MACROECONOMICS

The subject matter of economics has been studied under two broad branches:

1. Microeconomics (Price Theory) 2. Macroeconomics (Income Theory)

These two concepts have become of general use in economics. Let us discuss these concepts in detail.

Microeconomics

Adam Smith is considered to be the founder of the field of microeconomics. The term 'micro' has been derived from Greek word 'mikros' which means '*small*'. Microeconomics deals with analysis of behaviour and economic actions of small and individual units of the economy, like a particular consumer, a firm or a small group of individual units. The concept of microeconomics is very important as it supplies the foundation for most of our understanding of the functioning of an economy.

Microeconomics is that part of economic theory, which studies the behaviour of individual units of an economy. *For example,* Individual income, individual output, price of a commodity, etc. *Its main tools are Demand and Supply.*

Macroeconomics

The term 'macro' has been derived from the Greek word 'makros' which means *'large'*. So, macroeconomics deals with overall performance of the economy. It is concerned with study of problems of the economy like inflation, unemployment, poverty, etc.

Macroeconomics is that part of economic theory which studies the behaviour of aggregates of the economy as a whole. *For example,* National income, aggregate output, aggregate consumption, etc. *Its main tools are Aggregate Demand and Aggregate Supply.*

Micro Vs Macro

- In Microeconomics, the letter '**I**' stands for 'Individuals', i.e. it studies the economic behaviour of individuals.
- In Macroeconomics, the letter '**A**' stands for 'Aggregates', i.e. it studies the economy as a whole.

Let us discuss the detailed differences between the two branches of economics.

Difference between Microeconomics and Macroeconomics

Basis	Microeconomics	Macroeconomics
Meaning	Microeconomics is that part of economic theory which studies the behaviour of individual units of an economy.	Macroeconomics is that part of economic theory which studies the behaviour of aggregates of the economy as a whole.
Tools	Demand and Supply.	Aggregate Demand and Aggregate Supply.
Basic Objective	It aims to determine price of a commodity or factors of production.	It aims to determine income and employment level of the economy.
Degree of Aggregation	It involves limited degree of aggregation. For example, market demand is derived by aggregating individual demands of all buyers in the particular market.	It involves the highest degree of aggregation. For example, aggregate demand is derived for the entire economy.
Basic Assumptions	It assumes all the macro variables to be constant, i.e., it assumes that national income, consumption, savings, etc. are constant.	It assumes that all the micro variables, like decisions of households and firms, prices of individual products, etc. are constant.
Other Name	It is also known as 'Price Theory'.	It is also known as 'Income and Employment Theory'.
Examples	Individual income, individual output.	National Income, National output.

Interdependence of Microeconomics and Macroeconomics

Economics is a single subject and the analysis of an economy ***cannot*** be split into two watertight compartments. It means, *microeconomics and macroeconomics are not independent of each other and there is much common ground between the two.* **It means, both microeconomics and macroeconomics are interdependent.**

Let us elaborate their interdependence with the help of some examples:

Microeconomics depends on Macroeconomics

1. Law of demand came into existence from the analysis of the behaviour of a group (aggregate) of people.
2. Price of a commodity is influenced by the general price level prevailing in the economy.

Macroeconomics depends on Microeconomics

1. National income of a country is nothing but the sum total of incomes of individual units of the country.
2. Aggregate demand depends on demand of individual households of the economy.

Micro–Macro Paradoxes

Paradox is a seemingly absurd or contradictory statement, though, often a true statement. Sometimes, there are paradoxes seen in Micro and Macro activities. It means, an act which is beneficial for an individual, may prove to be harmful for the economy as a whole.

Example: If an individual saves, his family will be benefitted, but if the whole economy starts saving, it will result in contraction of demand, output, employment and income. As a result, the whole economy will suffer.

Which is more Important — Microeconomics or Macroeconomics?

Both, microeconomics and macroeconomics have a place of their own and none of them can be dispensed with. Microeconomics concentrates on the working of the individual components and macroeconomics studies the economy in general. While the former is concerned with structures of the aggregates, the latter is concerned with the aggregates themselves. *So, both the approaches are supplementary to each other. The superiority of one approach over the other cannot be claimed.*

Need for a Separate Theory of Macroeconomics

Microeconomics failed to study the aggregates of the economy as a whole. As a result, there was a need for a separate theory, which could explain the working of the economy. *Macroeconomics helps to understand the working of an economic system as well as to explain the various macroeconomic paradoxes.*

1.7 CENTRAL PROBLEMS OF AN ECONOMY

Production, distribution and disposition of goods and services are the basic economic activities of life. In the course of these activities, every society has to face scarcity of resources. Because of this scarcity, every society has to decide how to allocate the scarce resources. *It leads to following Central Problems, that are faced by every economy:*

1. What to produce
2. How to produce
3. For whom to produce

These problems are called central problems because these are the most basic problems of an economy and all other problems revolve around them.

These 3 problems are studied under the problem of 'Allocation of Resources'.

Allocation of Resources *(Studied under Microeconomics)*

Allocation of resources refers to the problem of assigning the scarce resources in such a manner so that maximum wants of the society are fulfilled. As resources are limited in relation to the unlimited wants, it is important to economize their use and utilize them in the most efficient manner.

The problem of allocation of resources is studied under 3 heads: (1) What to produce; (2) How to produce; (3) For whom to produce.

In nutshell, an economy has to allocate its resources and choose from different potential bundles of goods (What to produce), select from different techniques of production (How to produce), and decide in the end, who will consume the goods (For whom to produce).

1. What to Produce

This problem involves selection of goods and services to be produced and the quantity to be produced of each selected commodity. Every economy has limited resources and thus, cannot produce all the goods. More of one good or service usually means less of others.

For example, production of more sugar is possible only by reducing the production of other goods. Production of more war goods is possible only by reducing the production of civil goods. So, on the basis of the importance of various goods, an economy has to decide which goods should be produced and in what quantities. *This is a problem of allocation of resources among different goods.*

The problem of 'What to produce' has two aspects:

(i) *What possible commodities to produce:* An economy has to decide, which consumer goods (rice, wheat, clothes, etc.) and which of the capital goods (machinery, equipments, etc.) are to be produced. In the same way, economy has to make a choice between civil goods (bread, butter, etc.) and war goods (guns, tanks, etc.).

(ii) *How much to produce:* After deciding the goods to be produced, economy has to decide the quantity of each commodity, that is selected. It means, *it involves a decision regarding the quantity to be produced, of consumer and capital goods, civil and war goods and so on.*

As this problem has two aspects, it is also termed as "What to Produce and in what Quantity".

***Guiding Principle** of 'What to Produce': Allocate the resources in a manner which gives maximum aggregate satisfaction.*

2. How to Produce

This problem refers to selection of technique to be used for production of goods and services. A good can be produced using different techniques of production. By 'technique', we mean which particular combination of inputs to be used. Generally, techniques are classified as: Labour intensive techniques (LIT) and Capital intensive techniques (CIT).

- In *Labour intensive technique*, more labour and less capital (in the form of machines, etc.) is used.
- In *Capital intensive technique*, there is more capital and less labour utilization.

For example, textiles can be produced either with a lot of labour and a little capital or with less labour and more capital. Availability of factors and their relative prices helps in determining the technique to be used.

The selection of technique is made with a view to achieve the objective of raising the standard of living of people and to provide employment to everyone. *For example,* in India, LIT is preferred due to abundance of labour, whereas, countries like U.S.A., England, etc. prefer CIT due to shortage of labour and abundance of capital.

***Guiding Principle** of 'How to Produce': Combine factors of production in such a manner so that maximum output is produced at minimum cost, using least possible scarce resources.*

3. For Whom to Produce

This problem relates to the distribution of produced goods and services among the individuals within the economy, i.e. selection of the category of people who will ultimately consume the goods, i.e. whether to produce goods for more poor and less rich or more rich and less poor.

Since resources are scarce in every economy, no society can satisfy all the wants of its people. Thus, a problem of choice arises. Goods are produced for those people who have the paying capacity. The capacity of people to pay for goods depends upon their level of income. It means, this problem *is concerned with distribution of income* among the factors of production (land, labour, capital and enterprise), who contribute in the production process.

The problem can be categorised under two main heads:

(i) *Personal Distribution:* It means how national income of an economy is distributed among different groups of people.

(ii) *Functional Distribution:* It involves deciding the share of different factors of production in the total national product of the country.

Guiding Principle of 'For whom to Produce': Ensure that urgent wants of each productive factor are fulfilled to the maximum possible extent.

It must be noted that in addition to 'Allocation of Resources', there are two more Central Problems: (i) Problem of fuller and efficient utilsation of resources; (ii) Problem of Growth of resources. ***However, they are beyond the scope of syllabus of XIIth class.***

1.8 OPPORTUNITY COST

As resources are scarce, the society is always forced to make choices. To produce more of one good, a certain amount of other goods has to be sacrificed. The true cost of using economic resources in any given project is the loss of the alternative output which they might have produced.

For example, if we use a certain amount of land, labour and capital to build a factory, then the economic cost (or opportunity cost) of the factory might be the houses which these resources could have produced.

Hence, ***Opportunity Cost is the cost of next best alternative foregone.*** *For example,* Suppose, you are working in a bank at the salary of ₹ 40,000 per month. Further suppose, you receive two more job offers:

- To work as an executive at ₹ 30,000 per month; or
- To become a journalist at ₹ 35,000 per month.

In the given case, the opportunity cost of working in the bank is the cost of next best alternative foregone, i.e. ₹ 35,000. *The amount of other goods and services, that must be sacrificed to obtain more of any one good, is called the opportunity cost of that good.*

One more Example

Suppose you have ₹ 20,000 and you want to purchase one laptop and a LED TV. With ₹ 20,000 only in hand, you cannot have both. You can either buy laptop or LED TV. If you decide to purchase laptop, then opportunity cost of choosing the laptop is the cost of the foregone satisfaction (from LED TV). *This example clearly demonstrates a fundamental economic condition: 'As our resources are limited, we are always forced to make choices between alternate commodities'.*

1.9 PRODUCTION POSSIBILITY FRONTIER (PPF)

Due to scarcity of resources, we cannot satisfy all our wants. Even if an economy uses all its resources in the best possible manner, its capabilities are restricted due to scarcity of resources. As we cannot have everything that we want, we are forced to make economic decisions. These decisions take the form of choices among alternate goods and services, that will best satisfy our wants. Thus, the *society must decide, what to produce out of an almost infinite range of possibilities.*

As the choice is to be made between infinite possibilities, the economists assumed a very basic economy ***with only two goods*** (say, guns and butter). Economists have traditionally represented this range of choices by what they call a *'Production Possibility Schedule'* **(Table 1.1)**. When this schedule is graphically represented **(Fig. 1.1)**, *it is called 'Production Possibility Frontier (PPF)' or 'Production Possibility Curve (PPC).*

Production Possibility Frontier (PPF) refers to graphical representation of possible combinations of two goods that can be produced with given resources and technology. Alternately, *PPF is the locus of various possible combinations of two goods that can be produced with given resources and technology.*

Only 2 Goods are taken: *The two goods have been taken just for the sake of simplicity and easy understanding. However, the analysis involved can be applied equally well, to any combination of goods.*

Synonyms of PPF

PPF is also known by the following names:

- Production Possibility Curve
- Production Possibility Boundary
- Transformation Curve
- Transformation Boundary
- Transformation Frontier

Assumptions for PPF

Production possibility frontier is based on the following assumptions:

1. The amount of resources in an economy is fixed, but these resources can be transferred from one use to another;
2. With the help of given resources, only two goods can be produced;
3. The resources are fully and efficiently utilised;

4. Resources are not equally efficient in production of all products. So, when resources are transferred from production of one good to another, the productivity decreases;
5. The level of technology is assumed to be constant.

The concept of PPF can be better understood with the help of following imaginary (hypothetical) schedule and diagram:

Table 1.1: Production Possibility Schedule

Possibilities	Guns (in units)	Butter (in units)	MOC	MRT = Δ Guns / Δ Butter
A	21	0	—	—
B	20	1	1	1G : 1B
C	18	2	2	2G : 1B
D	15	3	3	3G : 1B
E	11	4	4	4G : 1B
F	6	5	5	5G : 1B
G	0	6	6	6G : 1B

Table 1.1 shows the various possibilities of guns and butter. This data is graphically represented in **Fig. 1.1**.

- If the economy uses all its resources to produce only guns, then maximum of 21 units of guns and no butter can be produced (point 'A').
- On the other hand, if all resources are used for butter, then maximum 6 units of butter and no guns can be produced (point 'G').
- In between, there are various possibilities with different combinations of guns and butter.
- *When points A, B, C, D, E, F and G are joined, we get a curve AG, known as 'Production Possibility Frontier'.* **AG curve shows the maximum limit of production of guns and butter.**

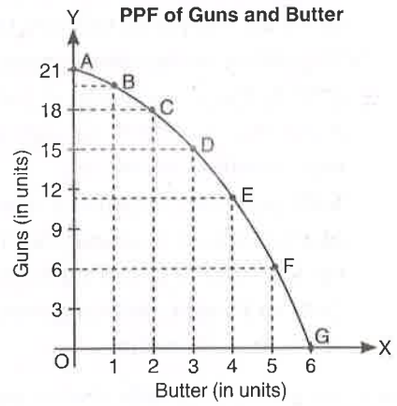


Fig. 1.1

Marginal Opportunity Cost (MOC)

MOC refers to the number of units of a commodity sacrificed to gain one additional unit of another commodity. ***In case of PPF, MOC is always increasing,*** i.e. more and more units of a commodity have to be sacrificed to gain an additional unit of another commodity.

Why Increasing MOC operates?

Increasing MOC operates because productivity and efficiency of factors of production decrease as they are shifted from one use to another. Let us understand this with the help of an example: Suppose an economy produces only two goods (say, guns and butter). A worker is employed in production of guns because he is best suited for it. If economy decides to reduce production of guns and increase production of butter, then worker will be transferred to production of butter. However, he is not that efficient in production of butter as he was in guns. As a result, his productivity in butter will be low and MOC will increase.

Marginal Rate of Transformation (MRT)

MRT is the ratio of number of units of a commodity sacrificed to gain an additional unit of another commodity. $\text{MRT} = \frac{\Delta \text{ Units Sacrificed}}{\Delta \text{ Units Gained}}$. In the given example of guns and butter, $\text{MRT} = \frac{\Delta \text{ Guns}}{\Delta \text{ Butter}}$.

Example of MRT

According to **Table 1.1**, 20 units of guns and 1 unit of butter (i.e. 20G + 1B) can be produced by utilising the resources fully and efficiently. If the economy decides to produce 2B, then it has to cut down production of guns by 2 units. In the given case, 2G is the opportunity cost of producing 1B, i.e. *MRT is 2G:1B.*

Characteristics or Properties of PPF

The two basic characteristics or features or properties of PPF are:

1. PPF slopes Downwards: PPF shows all the maximum possible combination of two goods, which can be produced with the available resources and technology. In such a case, *more of one good can be produced only by taking resources away from the production of another good.* As there exists an inverse relationship between change in quantity of one commodity and change in quantity of the other commodity, PPF slopes downwards from left to right (see **Fig. 1.1**).
2. PPF is Concave Shaped: *PPF is concave shaped because of increasing marginal rate of transformation (MRT), i.e. more and more units of one commodity are sacrificed to gain an additional unit of another commodity.*
   MRT increases because it is assumed that no resource is equally efficient in production of all goods As resources are transferred from one good to another, less and less efficient resources have to be employed. This raises cost and raises MRT. In the given example of guns and butter, units of guns sacrificed keep on increasing each time to increase production of one unit of butter.

Whether Economy will always operate on PPF?

It must be remembered that PPF does not show the point at which the economy will actually operate. It only shows the maximum available possibilities, which an economy can produce. ***The exact point of operation depends on how well the resources of the economy are used.***

1. Economy will operate on PPF *only when* resources are fully and efficiently utilised.
2. Economy will operate at any point *inside PPF if resources are not fully and efficiently utilised.*

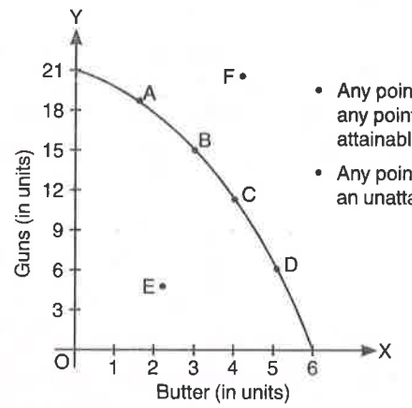
3. Economy *cannot operate at any point outside PPF* as it is unattainable with the available productive capacity.

It means:

- Economy can either operate on PPF or inside PPF, known as 'Attainable Combinations'.
- But, economy cannot operate outside PPF, known as 'Unattainable Combinations'.

Attainable and Unattainable Combinations

Let us clear the concept of 'Attainable and Unattainable Combinations' with the help of Fig. 1.2:



- Any point on PPF (Points A to D) or any point inside PPC (Point E) are attainable combinations.
- Any point outside PPF (point F) is an unattainable combination.

Fig. 1.2

Attainable Combinations: It refers to those combinations at which economy can operate. There can be two attainable options:

1. *Optimum utilisation of resources:* If the resources are used in the best possible manner, then economy will operate at any point (like, A, B, C or D) on PPF.
2. *Inefficient utilisation of resources:* However, the actual production can fall short of its capabilities. If there is wastage or inefficient utilisation of resources, then economy will operate at any point inside the PPF (like E).

Unattainable Combinations: With the given amount of available resources, it is impossible for the economy to produce any combination more than the given possible combinations i.e. an *economy can never operate at any point outside the PPF* (like F).

For "An economy always produces on, but not inside, a PPF", refer HOTS.

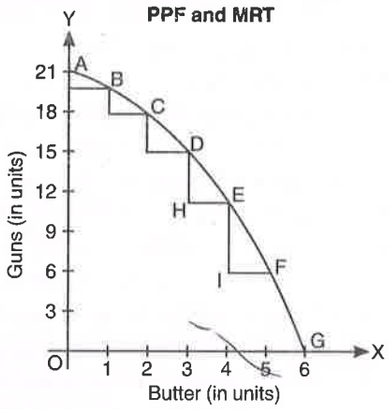


Fig. 1.3

PPF and MRT

We can measure MRT on the PPF. *For example,* MRT between the possibilities D and E is equal to DH/HE and between E and F, it is equal to EI/IF and so on.

We know, PPF is concave shaped curve. The slope of PPF is a measure of the MRT. Since the slope of a concave curve increases as we move downwards along the curve, the MRT also rises as we move downwards along the curve.

Can PPF be a straight line?

PPF can be a straight line if we assume that MRT is constant, i.e. same amount of a commodity is sacrificed to gain an additional unit of another commodity. It is possible only when we assume that all the resources are equally efficient in production of all goods. In such case, PPF will be a straight line as shown in **Fig. 1.4**.

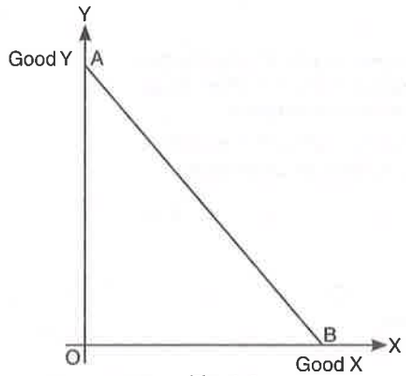


Fig. 1.4

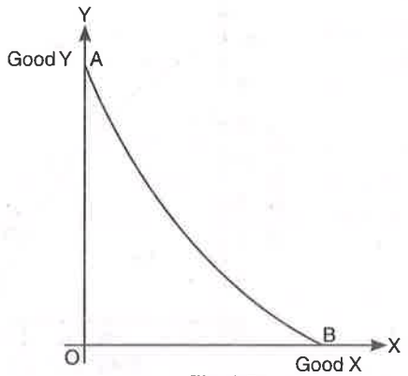


Fig. 1.5

Can PPF be Convex to the Origin?

PPF can be convex to the origin if MRT is decreasing, i.e. less and less units of a commodity are sacrificed to gain an additional unit of another commodity. In such case, PPF will be a convex shaped curve as shown in **Fig. 1.5**.

It must be noted that both these situations (i.e. PPF being a straight line or convex shaped) would not arise, as MRT always increases. ***So, PPF is always concave shaped.***

PPF and Opportunity Cost

The *opportunity cost* of a product is the alternative that must be given up to produce that product. PPF illustrates the concept of opportunity cost. *The opportunity cost of producing more butter is fewer guns.* As we move from 'E' to 'F' (see **Fig. 1.6** and **Table 1.1**), the production of butter rises from 4 units to 5 units, but the number of guns decreases from 11 units to 6 units, i.e. opportunity cost of the 5th unit of butter is sacrifice of 5 units of guns.

If all the resources of the economy are fully and efficiently utilised, then more of one good can be produced only by taking resources away from the production of another good. ***The lost production of such other good is the opportunity cost of the first.***

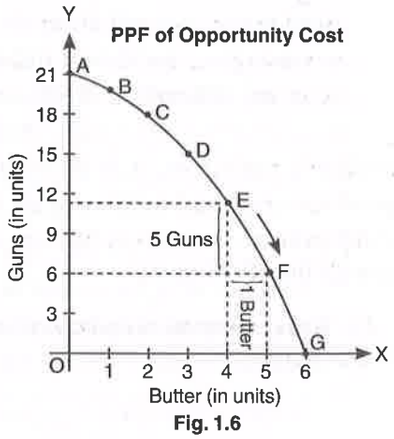


Fig. 1.6

PPF as Transformation Curve

Slope of PPF indicates the ease or difficulty in transforming one good into another. In the given example **(Table 1.1)**, when we move down the curve, we transform guns into butter, and when we move up, we transform butter into guns. Because of this reasson, PPF is known as "Transformation Curve".

Change in PPF

PPF is based on the assumption, that resources of an economy are fixed. However, in this changing world, the productive capacity of an economy is constantly changing due to increase or decrease in resources. Such changes in resource lead to change in PPF. *The change in PPF indicates either an increase or a decrease in the productive capacity of the economy.*

The change in PPF can be of two types:

1. Shift in PPF: PPF will shift when there is change in productive capacity (resources or technology) with respect to *both the goods.*
2. Rotation of PPF: PPF will rotate when there is change in productive capacity (resources or technology) with respect to *only one good.*

1. Shift in PPF

The PPF can shift either towards *right* or towards *left,* when there is change in resources or technology with respect to both the goods.

(i) ***Rightward Shift in PPF:*** When there is *"Advancement or Upgradation of Technology"* or/and *"Growth of Resources"* in respect to both the goods, then PPF will shift to the right. *For example,* if there is increase in resources for production of butter and guns, we can produce more of both the goods. In such case, existing PPF (PP) will shift to the right, represented by P_1P_1 in **Fig. 1.7**.

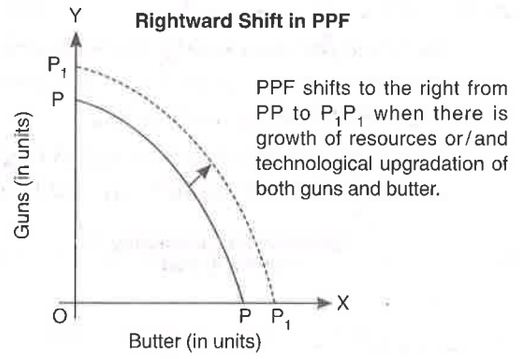


Fig. 1.7

"Growth of Resources" take place when:

- *Quantity of Resources increases, like: (i) Discovery of new natural resources; (ii) Inflow of Foreign Capital; (iii) Increase in labour force.*
- *Quality of Resources increases, like: (i) "Skill Development of Human Resources" due to establishment of Educational Institutes or schemes like Pradhan Mantri Kaushal Vikas Yojana; (ii) "Improved Hygienic Environment" due to 'Clean India Mission' (Swachh Bharat Mission).*

(ii) ***Leftward Shift in PPF:*** PPF will shift towards left, when there is a technological degradation and/or decrease in resources with respect to both the goods. *For example,* destruction of resources in an earthquake will reduce the productive capacity and as a result, PPF will shift to the left from PP to P_1P_1 **(Fig. 1.8)**.

For, "How PPF will be affected by massive unemployment", refer HOTS.

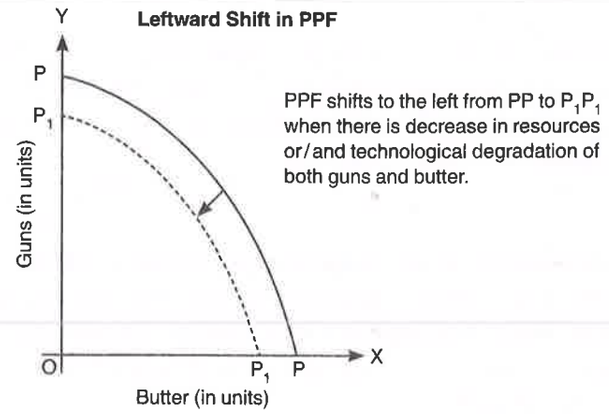


Fig. 1.8

2. Rotation of PPF

It happens when there is change in productive capacity (resources or technology) with respect to *only one good*. The rotation can be either for the commodity on the X-axis or for commodity on the Y-axis.

(i) ***Rotation for commodity on the X-axis:*** When there is a technological improvement or an increase in resources for production of the commodity on the X-axis (say, butter), then PPF will rotate from AB to AC.

However, in case of technological degradation or decrease in resources for production of butter, PPF will rotate to the left from AB to AD (Fig. 1.9).

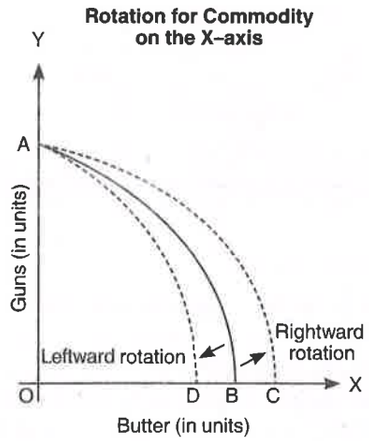


Fig. 1.9

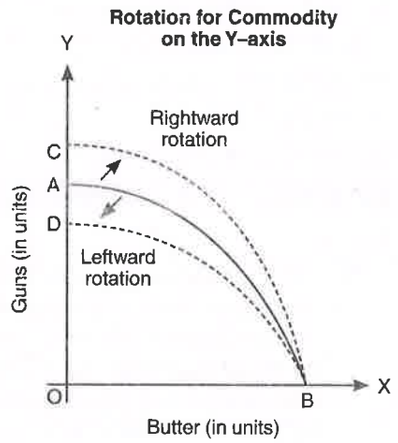


Fig. 1.10

(ii) ***Rotation for commodity on the Y-axis:*** A technological improvement or an increase in resources for production of commodity on Y-axis (say, guns), will rotate the PPF from AB to CB.

However, in case of degradation in technology or a decrease in resources for production of guns, PPF will rotate to the left from AB to DB as shown in Fig. 1.10.

Overview of PPF

Let us quickly revise the concept of PPF with the help of Fig. 1.11:

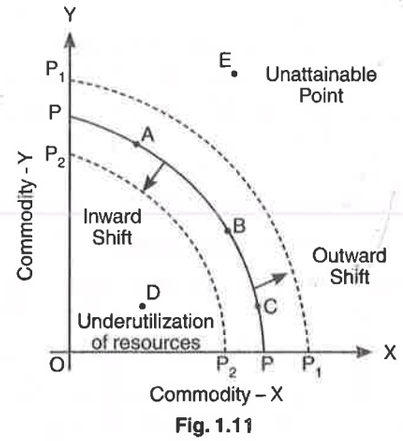


Fig. 1.11

1. PPF slopes downwards, as an increase in production of one good requires decrease in production of the other.
2. PPF is concave shaped due to increasing MRT.
3. PPF shows transformation of one good into another, not physically, but by diverting resources from one use to the other.
4. PPF shows the maximum available possibilities. The exact point of operation depends on how well the resources of the economy are used.
5. If the economy operates on PPF (like points A, B or C), it means resources are fully and efficiently utilised.
6. If the economy operates at any point inside PPF (like point 'D'), it means resources are *not* fully and efficiently utilised.
7. Economy cannot operate at any point outside PPF (like point 'E'), as it is unattainable with the available productive capacity.
8. An outward shift in PPF from PP to P_1P_1 means, that the economy can produce more of both the commodities, which was not possible earlier.
9. An inward shift in PPF from PP to P_2P_2 means, that the economy's capacity to produce both the commodities has reduced.

Refer Power Booster for "Solution of Central Problems through PPF".

1.10 SOLVED PRACTICALS

Practicals on Opportunity Cost

Example 1. Deepak is working as a sales manager at a salary of ₹ 1,00,000 per month. He received 2 more job offers. He got an offer of ₹ 70,000 from Reliance Industry and offer of ₹ 85,000 from Tata Industry. What is his opportunity cost for working as a sales manager?

Solution:

In the given case, the next best offer for Deepak is that of ₹ 85,000 from Tata Industry. So, the opportunity cost of Deepak for working as a sales manager is ₹ 85,000.

Example 2. A farmer produces 100 kg of wheat on a piece of land with the help of a given quantity of resources. If this farmer can also produce 70 kg of rice with the same quantity of resources, then what is the opportunity cost of producing wheat?

Solution:

The opportunity cost of producing wheat is 70 kg of rice.

Practicals on PPF

Example 3. Calculate the marginal opportunity cost (MOC) of commodity A for the given combinations:

Commodity A	0	1	2	3	4	5
Commodity B	15	14	12	9	5	0

Solution:

Commodity A	0	1	2	3	4	5
Commodity B	15	14	12	9	5	0
MOC	–	1	2	3	4	5

Example 4. Determine the marginal opportunity cost from the following data:

Commodity A	Commodity B
20	10
10	14

Solution:

Commodity A	Commodity B	MOC $= \frac{\Delta \text{ Units Sacrificed}}{\Delta \text{ Units Gained}} = \frac{\Delta A}{\Delta B}$
20	10	—
10	14	$\frac{10}{4} = 2.5$

Example 5. Compute marginal opportunity cost (MOC) from the following data:

Good X	0	10	20	30	40
Good Y	200	180	140	80	0

Solution:

Good X	Good Y	MOC $= \frac{\Delta \text{ Units Sacrificed}}{\Delta \text{ Units Gained}} = \frac{\Delta Y}{\Delta X}$
0	200	—

10	180	$\frac{20}{10} = 2$
20	140	$\frac{40}{10} = 4$
30	80	$\frac{60}{10} = 6$
40	0	$\frac{80}{10} = 8$

Example 6. The following table depicts the production possibilities of commodities X and Y:

Possibility	A	B	C	D	E
Commodity X	0	1	2	3	4
Commodity Y	10	9	7	4	0

(a) Show these production possibilities through PPF. What do the points on the curve indicate?
(b) Label a point F inside the curve. What does this point indicate?
(c) Label a point G outside the curve. What does this point indicate?
(d) What must occur so that the economy can attain the level of production as indicated by point G.

Solution:

(a) The given diagram shows all the production possibilities given in the table. Points on the curve (A to E) indicate that there is fuller utilization of resources;
(b) Point F inside the curve indicates underutilization of resources;
(c) Point G outside the curve indicates an unattainable combination;
(d) Economy can attain the level of production as indicated by point G, only when there is an increase in resources or an improvement in technology with respect to both commodities X and Y.

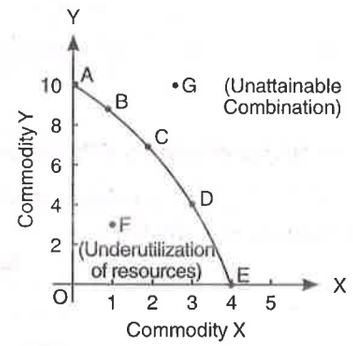


Fig. 1.12

Example 7. A country produces two commodities: X and Y. Its production possibilities are shown in the following table:

Possibility	A	B	C	D	E	F
Commodity X	20	14	9	5	2	0
Commodity Y	0	1	2	3	4	5

(a) Calculate marginal rate of transformation (MRT);
(b) Construct a PPF with the help of the various possibilities;
(c) Comment on the shape of PPF along with its reason.

Solution:

(a)

Possibility	A	B	C	D	E	F
Commodity X	20	14	9	5	2	0
Commodity Y	0	1	2	3	4	5
MRT	—	6 : 1	5 : 1	4 : 1	3 : 1	2 : 1

(b) Figure 1.13

(c) PPF is convex shaped due to decreasing MRT, i.e. less and less units of commodity Y are sacrificed to gain an additional unit of commodity X.

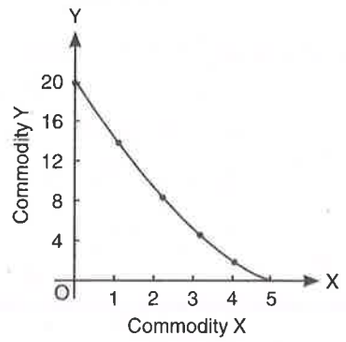


Fig. 1.13

Example 8. Giving reason, comment on the shape of Production Possibilities curve based on the following schedule:

Good X (units)	*Good Y (units)*
0	10
1	9
2	7
3	4
4	0

Solution:

Good X (units)	*Good Y (units)*	*MRT*
0	10	—
1	9	1Y:1X
2	7	2Y:1X
3	4	3Y:1X
4	0	4Y:1X

As MRT is increasing, PPC will be downward sloping and concave to the origin.

Example 9. Giving reason comment on the shape of Production Possibilities Curve based on the following schedule:

Good X (Units)	*Good Y (Units)*
0	16
1	12
2	8
3	4
4	0

Solution:

Good X (units)	*Good Y (units)*	*MRT*
0	16	—
1	12	4Y:1X
2	8	4Y:1X
3	4	4Y:1X
4	0	4Y:1X

Since MRT is constant, PP curve will be downward sloping straight line.

REVISION OF KEY POINTS

- **Economy** is a system which provides people with the means to work and earn a living.
- **Scarcity** refers to a situation in which resources are insufficient to meet all the human wants.
- **Economising of resources** refers to making optimum use of the available resources.
- **Economic problem** is a problem of choice involving satisfaction of unlimited wants out of limited resources having alternative uses.
- **Economics** is a social science which studies the way, a society chooses to use its limited resources, which have alternative uses, to produce goods and services and to distribute them among different groups of people.
- **Two branches of Economics** are Microeconomics and Macroeconomics.
  - (i) ***Microeconomics*** is that part of economic theory which studies behaviour of individual units of an economy.
  - (ii) ***Macroeconomics*** is that part of economic theory which studies the behaviour of aggregates of the economy as a whole.
- **Positive Economics** deals with what are the economic problems and how are they actually solved. For example, India is an overpopulated country or prices are constantly rising.
- **Normative Economics** deals with what ought to be or how the economic problems should be solved. For example, India should not be an overpopulated country or prices should not rise.
- **Distinction between Microeconomics and Macroeconomics**
  - (a) Microeconomics studies the economic behaviour of individual units, whereas, macroeconomics studies the economy as a whole.
  - (b) Main tools of microeconomics are demand and supply, whereas, main tools of macroeconomics are aggregate demand and aggregate supply.
  - (c) Basic objective of microeconomics is price determination, whereas, basic objective of macroeconomics is determination of equilibrium level of income and employment.
  - (d) The aggregates of microeconomics have limited degree of aggregation as compared to aggregates of macroeconomics.
- **Major Central Problems are:**
  - (i) ***What to produce:*** It refers to selection of goods and services and quantity to be produced of each selected commodity.
  - (ii) ***How to produce:*** It deals with the selection of technique, i.e. to use labour intensive or capital intensive technique for the production of goods and services.
  - (iii) ***For whom to produce:*** This problem relates to the distribution of produced goods and services among the individuals within the economy
- **Opportunity Cost** is the cost of the next best alternative foregone.
- **Production possibility frontier (PPF)** refers to a graphical representation of all the possible combinations of two goods that can be produced with the given resources and technology.
  - (i) ***PPF slopes downwards*** as more of one good can be produced only by taking resources away from the production of another good.
  - (ii) ***PPF is concave shaped*** because of increasing marginal rate of transformation (MRT), i.e. more and more units of one commodity are sacrificed to gain an additional unit of another commodity.
  - (iii) ***All Points inside PPF*** are inefficient. Points on the curve are efficient. Points outside the curve are impossible.
  - (iv) ***Rotation of PPF*** occurs when there is a change in technology or resources for one commodity only.
  - (v) ***Shift in PPF*** occurs when there is a change in technology or resources for both the goods. PPF shifts towards right in case of an increase in resources or technological upgradation. PPF shifts towards left when there is a decrease in resources or technological degradation.

Synonyms or Similar Terms of this Chapter

Positive Economics	Positive Science
Normative Economics	Normative Science
Microeconomics	Price Theory
Macroeconomics	Income and Employment Theory
Production Possibility Frontier (PPF)	• Production Possibility Curve (PPC) • Production Possibility Boundary • Transformation Curve • Transformation Boundary • Transformation Frontier

HOTS HIGHER ORDER THINKING SKILLS QUESTIONS

Q. 1. Although water is useful, yet it is cheap. On the contrary, diamond is not much of use, still it is very expensive. Give an economic reason for this paradox.

Ans. The economic reason for this paradox is scarcity. Although water is useful, yet it is cheap due to its abundance in the economy. Diamonds are very expensive because they are scarce and people are ready to pay a high price.

Q. 2. "Only scarce goods attract price." Comment.

Ans. The given statement is correct. All resources are not scarce in the economy. For example, the air we breathe is abundant in relation to wants. Such goods are available free of cost. These goods are known as Non-Economic Goods. On the other hand, some goods are scarce in relation to their wants. For example, petrol, electricity, etc. are scarce in relation to wants. These goods command price and are known as Economic Goods. So, it is rightly said that only scarce goods attract price.

Q. 3. What does the slope of PPF indicate?

Ans. PPF is a downward sloping concave shaped curve.

(i) Its downward slope indicates that more of one good can be produced only by taking resources away from the production of another good.

(ii) Its concave shape indicates that more and more units of one commodity have to be sacrificed to gain an additional unit of another commodity.

Q. 4. "Scarcity and Choice go together". Comment.

Ans. We live in a world of scarcity. All of us want better food, clothing, housing, schooling, entertainment, etc. But resources are not enough to meet all our wants. Even the richest economy (like U.S.A.) cannot satisfy all the needs of people. It means, scarcity of resources is a common feature of every economy and it gives rise to the problem of choice, i.e. how to make the best possible use of available resources. If resources were available in plenty, there would not have been any problem of choice. Hence, economics is concerned with the problem of choice under the conditions of scarcity.

Q. 5. "An economy always produces on, but not inside, a PPF", Defend or refute.

Ans. The given statement is refuted. An economy operates on PPF, only when resources are fully and efficiently utilized. It means, if there is unemployment or inefficient use of resources, then the economy may operate inside the PPF. So, the economy may operate at point 'H' (Fig. 1.14), in addition to the points on the curve AB on PPF.

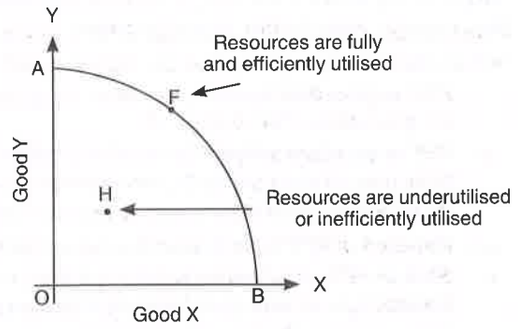


Fig. 1.14

Q. 6. A lot of people died and many factories were destroyed in an earthquake. How will it affect the PPF of the economy?

Ans. PPF of the economy will shift to the left from PP to P_1P_1 (refer Fig. 1.8). It happens because the number of possible combinations available with the economy has decreased, due to destruction of resources in the economy.

Q. 7. Massive unemployment will shift the PPF to the left. Defend or refute.

Ans. The given statement is refuted. Massive unemployment does not decrease the capacity of economy to produce. So, there will be no shift of PPF. However, economy will operate at some point inside the PPF, due to unutilisation of human resources.

Q. 8. On the basis of given diagram, answer the following questions:

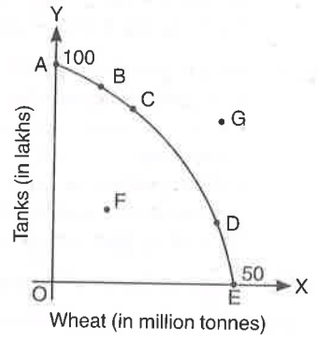
(i) On the production possibility curve AE, if the economy decides to produce 50 million tonnes of wheat, then how many tanks it can produce?

(ii) If there is growth in resources, what will happen to the production possibility curve?

(iii) Which point in the diagram represents underutilisation of resources?

(iv) Which of the points in diagram is an unattainable combination?

(v) Identify the point at which the economy will operate if resources are fully and efficiently utilised.



Ans. (i) Zero Tanks.

(ii) The production possibility curve will shift towards right.

(iii) Point F.

(iv) Point G.

(v) If resources are fully and efficiently utilized, then economy can operate at any point (like points A, B, C, D or E) on the production possibility curve.

Q. 9. Identify the following as Microeconomic study and Macroeconomic study: (i) Production of a sugar mill; (ii) Inflation rate; (iii) Car Industry; (iv) Supply of money; (v) Wage determination in a company; (vi) Allocation of resources; (vii) Household expenditure; (viii) Aggregate demand; (ix) Foreign exchange rate; (x) Market demand for apples.

Ans. Microeconomic Study: (i); (iii); (v), (vi), (vii); (x). Macroeconomic Study: (ii), (iv), (viii), (ix).

Q. 10. Why do problems related to allocation of resources in an economy arise? Explain.

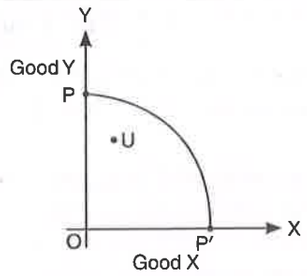
Ans. What to produce, how to produce and for whom to produce are the problems related to allocation of resources in an economy. These arise because resources are scarce and have alternative uses. The economy has to decide which possible goods and services it will produce. It has to decide whether to use more labour or more machines. It has also to decide about the distribution of goods among individuals.

Q. 11. Production in an economy is below its potential due to unemployment. Government starts employment generation schemes. Explain its effect using production possibilities curve.

OR

As a result of various programmes started by the government, more employment opportunities have been created. What will be its effect on production possibilities frontier? Explain.

Ans. Production below the potential means that total production in the economy is somewhere below the production possibility curve PP', for example at point U in the diagram.



When government starts employment generation schemes, and since the below potential production is due to unemployment, the economy moves forward in its attempt to remove unemployment and reach the potential. The movement forward is towards the PP' curve.

Q. 12. Why is production possibility curve concave? Explain.

Ans. Production Possibility Curve is concave to the origin because of increasing marginal rate of transformation (MRT), i.e. more and more units of one commodity are sacrificed to gain an additional unit of another commodity.
MRT increases because it is assumed that no resource is equally efficient in production of all goods As resources are transferred from one good to another, less and less efficient resources have to be employed. This raises cost and raises MRT.

Q. 13. What is Marginal Rate of Transformation? Explain with help of an example.

Ans. MRT is the rate at which the units of one good have to be sacrificed to produce one more unit of the other good in a two goods economy.
Suppose an economy produces only two goods X and Y. Further suppose that by employing these resources fully and efficiently, the economy produces 1X + 10Y. If the economy decides to produce 2X, it has to cut down production of Y by 2 units. Then 2Y is the opportunity cost of producing 1X. Then 2Y:1X is the MRT.

Q. 14. Why does the problem of 'what to produce' arise? Explain.

Ans. It arises because resources are scarce and have alternative uses. Since many goods and services can be produced from these resources, the problem is that which of these should be produced.

Q. 15. Why does the problem of 'how to produce' arise? Explain.

Ans. It arises due to availability of alternative techniques of production. Broadly, the choice is between capital-intensive techniques and labour-intensive techniques. The problem is that which one to employ.

Q. 16. What will be the impact of recently launched 'Clean India Mission' (Swachh Bharat Mission) on the Production Possibilities curve of the economy and why?

Ans. Cleanliness reduces chances of people falling ill and, thus can ensure better health. This in turn will reduce forced absenteeism from work, raise efficiency level and thus raise country's production potential. Rise in this potential shifts PP curve to the right.

Q. 17. What will likely be the impact of large scale outflow of foreign capital of Production Possibilities curve of the economy and why?

Ans. Large scale outflow of foreign capital from the economy will reduce resources and thus production potential of the country will fall. Fall in production potential in turn will shift the PP Curve downwards.

Q. 18. What is likely to be the impact of "Make in India" appeal to the foreign investors by the Prime Minister of India, on the production possibilities frontier of India? Explain.

Ans. 'Make in India' appeal signifies invitation to foreign producers to produce in India. This will lead to increase in resources thus raising production potential of the country. As a result PP curve will shift upwards.

Q. 19. What is likely to be the impact of efforts towards reducing unemployment on the production potential of the economy? Explain.

Ans. Reducing unemployment has no effect on the production potential of the country. It is because production potential is determined assuming full employment.
Unemployment indicated that the country is operating below potential. Reducing unemployment simply helps in reaching potential.

Q. 20. What will be the impact of "Education for All campaign" (Sarv Shiksha Abhiyan) on the Production Possibilities Curve of the Indian economy and why?

Ans. Education raises efficiency by making a worker a skilled worker. This will increase production potential shifting the PP curve upwards.

Q. 21. Explain the effects of floods in Jammu and Kashmir on its production possibilities frontier.

Ans. Floods have damaged and reduced resources. Since potential production declines the production possibility frontier shifts to the left.

Q. 22. The Government establishes a large number of Institutes of science and technology. How will it affect the production possibility frontier? Explain.

Ans. By these institutes skill development will improve. This would result in increase in the production potential of the country. So the PP will shift to the right.

Q. 23. Do rich countries also face central problems? Give reasons for your answer.

Ans. Yes, even in rich countries, resources are scarce, having alternative uses and wants are unlimited.

Q. 24. Assuming that no resource is equally efficient in production of all goods, name the curve which shows production potential of the economy. Explain, giving reasons, its properties.

Ans. The curve is called Production Possibilities Frontier (PPF). Discuss the following Two Properties of PPF: (i) PPF is downward sloping; (ii) PPF is Concave Shaped.

Q. 25. Explain the concepts of Opportunity Cost and Marginal Rate of Transformation using a production possibility schedule based on the assumption that no resource is equally efficient in production of all goods.

Ans. Suppose the only two goods produced are X and Y.

Combinations	X (Units)	Y (Units)	MRT (= ΔY:ΔX)
A	0	20	—
B	1	18	2Y:1X
C	2	14	4Y:1X
D	3	8	6Y:1X
E	4	0	8Y:1X

Opportunity Cost refers to the quantity of one good foregone to obtain more quantity of the other good. For example, when we move from combination A to B, the economy foregoes 2 units of Y to obtain one more units of X. So, opportunity cost of obtaining 1X is 2Y.
MRT means quantity of one good sacrified to produce an additional unit of the other good. For example, when we move from combination B to C, the MRT is 4Y:1X. MRT increases as to produce more of good X, we need to transfer less and less efficient resources from good Y.

Q. 26. Why does the problem of choice arise for producers and for consumers?

Ans. The problem of choice arises for producers because resources are limited and have alternative uses. The problem of choice arises for the consumers because their wants are unlimited while resources to fulfill these wants are limited.

Q. 27. The following news item was printed in the Indian Express: *"Centre increases number of work days under MGNREGA".* As per the news, the Central Government will increase the number of workdays

under the rural job guarantee scheme from 100 to 150 in drought-affected areas. How would it affect the PPC of the economy.

Ans. There will be no effect on PPC as there is no increase in the productive capacity of the economy. However, actual level of employment and output will increase due to increase in workdays.

Q. 28. Explain the shape of a production possibility frontier.

Ans. Production Possibility Frontier (PPF) is a downward sloping, concave curve. It shows increasing Marginal Rate of Transformation (MRT) as more quantity of one good is produced by reducing quantity of the other good. This behaviour of the MRT is based on the assumption that all less and less efficient resources have to be transferred to the production of the other good which raises marginal cost, i.e. MRT.

Q. 29. State the problems relating to 'allocation of resources' in an economy.

Ans. The three problems of allocation of resources are:

1. *What goods to produce and in what quantities?*
2. *How, i.e. by which technology, to produce?*
3. *For whom to produce?*

Q. 30. Economic slow down in some parts of the world has adversely affected demand for Indian exports. What will be its effect on the production possibilities frontier of India? Explain.

Ans. There will be no effect on Production Possibility Frontier (PPF) because PPF shows only what a country can potentially produce and not what it actually produces. Slow down by reducing demand for exports, may ultimately bring down output. Assuming that the country's actual production is somewhere on the PPF, slow down may result in the country producing at a point somewhere below the PPF.

Q. 31. Identify the following as Positive Statements and Normative Statements:

(i) People should save more for their future.
(ii) In India, pollution is increasing at an alarming rate.
(iii) The Government should impose heavy taxes on rich people.
(iv) Smoking should be discouraged in the world.
(v) In India, tax rate slabs increase with increase in income.
(vi) Higher interest rates induces people to save more out of their income.
(vii) High taxes on cigarettes discourage smoking.
(viii) Government should put more efforts to reduce pollution.

Ans. Positive Statements: (ii), (v), (vi); (vii); Normative Statements: (i), (iii), (iv), (viii).

Q. 32. 'An economy may operate inside the PPC even if there is full employment of resources.' Defend or refute.

Ans. The given statement is defended. When the resources are not utilised efficiently, then an economy may operate inside the PPC even if there is full employment of resources.

TRUE AND FALSE

Are the following statements true or false? Give reasons.

1. The problem of 'how to produce' involves choice between consumer goods and capital goods.
False. The problem of 'how to produce' deals with choice of technique to be used for production of goods and services.

2. Economy always operates on production possibility frontier.
False. Economy operates on production possibility frontier (PPF) only when resources are fully and efficiently utilised. If resources are not fully and efficiently utilized, then economy operates at any point inside PPF.

3. Macroeconomics deals with study of cotton textile industry.
False. Cotton textile industry is a micro concept as it is one of the part of industry. So, it is studied under microeconomics.

4. If the economy is operating inside the production possibility frontier, it indicates that the economy is saving resources for growth and expansion in future.
False. It indicates that there is underutilisation or inefficient use of resources.

5. Central problems are found only in the developing economies like India and Bangladesh and not in developed countries like USA.
False. Central problems are found in all economies (both developed and developing economies) as every economy faces problem of scarcity of resources.

6. Production possibility frontier shifts towards right when an economy moves from a situation of underutilization to fuller utilization of resources.
False. Production possibility frontier (PPF) will remain at its original position. Rather, economy will now operate on the PPF.

7. Economy can never operate outside the production possibility frontier with the given resources and technology.
True, as all points outside production possibility frontier are unattainable.

8. Production possibility frontier is concave shaped as production of one good can be increased only by reducing quantity of another good.
False. Production possibility frontier is concave shaped due to increasing marginal opportunity cost.

9. The problem of price determination of a product comes under the purview of macroeconomics.
False. It comes under the purview of microeconomics.

10. Growth of resources shifts the production possibility frontier towards right.
True. Growth of resources increases the capacity of economy to produce more. It shifts the production possibility frontier towards right.

11. Microeconomics is concerned with study of problems of the economy like inflation or unemployment.
False. Macroeconomics is concerned with study of aggregates like inflation or unemployment.

12. Microeconomics and macroeconomics are independent branches of economics.
False. Microeconomics and macroeconomics are interdependent.

13. The opportunity cost of a machine which can produce only one product is high.
False. The opportunity cost of such machinery will be zero as it has no alternative use.

14. Economising of resources refer to saving resources for future use.
False. It refers to making optimum or best possible use of available resources.

15. 'No Scarcity' means no economic problem.
True. If there is no scarcity, then there would be no economic problem as scarcity is the basic reason for economic problem.

16. The part of economics which deals with the question of what, how and for whom to produce is known as macroeconomics.
False. Microeconomics deals with the question of what, how and for whom to produce.

17. Production Possibility Curve shows the point at which the economy actually operates.
False. Production Possibility Curve (PPC) does not show the point at which the economy will actually operate. It only shows the maximum available possibilities, which an economy can produce. The exact point of operation depends on how well the resources of the economy are used.

GUIDELINES TO NCERT QUESTIONS

1. Discuss the central problems of an economy.
Hint: Discuss "What to produce, How to produce and For whom to produce".

2. What do you mean by the production possibilities of an economy?
Hint: Production possibilities of an economy refer to the different combinations of goods and services which an economy can produce from a given amount of resources and a given level of technological knowledge.

3. What is a production possibility frontier?
Hint: Production possibility frontier refers to a graphical representation of all the possible combinations of two goods that can be produced with the given resources and technology.

4. Discuss the subject matter of economics.
Hint: The subject-matter of economics is microeconomics and macroeconomics.

5. Distinguish between a centrally planned economy and a market economy.
Hint: Discuss "Market Economy Vs Centrally Planned Economy" given in Power Booster Section.

6. What do you understand by positive economic analysis?
Hint: Positive Economics deals with what are the economic problems and how are they actually solved.

7. What do you understand by normative economic analysis?
Hint: Normative Economics deals with what ought to be or how the economic problems should be solved.

8. Distinguish between microeconomics and macroeconomics.
Hint: Discuss "Difference between Microeconomics and Macroeconomics" given on Page No. 1.6.

REVISION EXERCISE

Multiple Choice Questions (MCQs)

1. The law of scarcity:
   (a) Does not apply to rich, developed countries.
   (b) Applies only to the less developed countries.
   (c) Implies that consumers want will be satisfied in a socialistic system.
   (d) Implies that consumer's wants will never be completely satisfied.

2. Assume that a PPF for butter and guns is drawn so that it is a straight line. It means:
   (a) Less and less units of butter are sacrificed to gain an additional unit of gun.
   (b) More and more units of butter are sacrificed to gain an additional unit of gun.
   (c) Same units of butter are sacrificed to gain an additional unit of gun.
   (d) None of these.

3. Which of these is not an assumption of PPC?
   (a) Resources are fully and efficiently utilised
   (b) Resources in the economy are fixed
   (c) There is no change in level of technology
   (d) Resources are equally efficient in production of all products

4. In which situation, can PPC be a straight line:
   (a) When MRT is decreasing (b) When MRT is increasing
   (c) When MRT is constant (d) None of these

5. Which of these economic problem deals with technique of production?
   (a) What to Produce (b) How to Produce
   (c) For whom to Produce (d) None of these

6. Ramesh is working at a salary of ₹ 35,000 per month. He receives two job offers: (i) To work as an accountant at a salary of ₹ 30,000 per month; (ii) To work as a sales manager at a salary of ₹ 25,000 per month. In the given case, his opportunity cost will be:
   (a) ₹ 25,000 (b) ₹ 30,000
   (c) ₹ 35,000 (d) ₹ 65,000

7. PPF is concave to the origin because of:
   (a) Increasing MRT (b) Diminishing MRT
   (c) Constant MRT (d) None of these

8. An economy operate on PPF when there is:
   (a) Optimum utilisation of resources (b) Inefficient use of resources
   (c) Underemployment of resources (d) None of these

9. Identify the central problem which deals with deciding the quantity of goods to be produced:
   (a) What to Produce (b) How to Produce
   (c) For whom to Produce (d) None of these

10. Scarcity refers to limitation of _____ in relation to _____ for a commodity.
   (a) Demand, Sale (b) Demand, Supply
   (c) Supply, Demand (d) None of these

11. The word 'Economics' is most closely connected with the word:
   (a) Free (b) Scarcity
   (c) Unlimited (d) Restricted

12. A point outside the PPF indicates:
   (a) Fuller utilisation of resources (b) Unutilisation of resources
   (c) Unattainable combination (d) None of these

13. Opportunity cost is the:
   (a) Number of units sacrificed (b) Number of units gained
   (c) Cost of next best alternative foregone (d) None of these

14. Which economic problem involves selection of category of people who will ultimately consume the goods?
   (a) How to produce (b) For whom to produce
   (c) What to produce (d) None of these

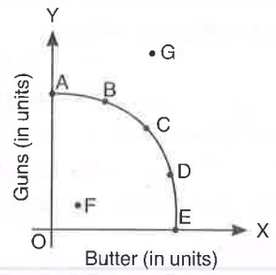
15. Which of the following will not lead to shift in PPF?
   (a) Upgradation of Technology (b) Exploration of new oil reserves
   (c) Massive unemployment (d) Destruction of Resources

16. The fundamental economic problem being faced is:
   (a) Unlimited human wants (b) Limited wants and unlimited resources
   (c) Unlimited wants and scarcity of resources (d) Limited wants and limited resources

17. Which part of economic theory aims to determine income and employment level of the economy?
   (a) Microeconomics (b) Macroeconomics
   (c) Neither (a) nor (b) (d) Both (a) and (b)

18. What will happen to PPF if there is technological upgradation in case of both the goods?
   (a) Rightward shift in PPF (b) Leftward Shift in PPF
   (c) Rotation of PPF (d) None of these

19. Answer the following questions with the help of following diagram:



(i) Which of the following point represents underutilisation of resources?
(a) G (b) E
(c) A (d) F

(ii) Which of the following point represents fuller and efficient utilisation of resources?
(a) B (b) G
(c) F (d) None of these

(iii) Which of the following point shows unattainable combination?
(a) C (b) F
(c) G (d) A

20. Labour-intensive techniques are chosen in a:
(a) Labour-surplus economy (b) Capital-surplus economy
(c) Developed economy (d) Developing economy

21. Which of the following is related to Microeconomics?
(a) Inflation in the economy (b) Unemployment Problem
(c) National income (d) Income from Postal department

22. Which of the following is a cause of economic problem?
(a) Scarcity of Resources (b) Unlimited Wants
(c) Alternative Uses (d) All of these

23. Which of the following is not a central problem of economy?
(a) How to Produce (b) When to Produce
(c) What to Produce (d) For whom to Produce

24. Which of the following illustrates a decrease in the unemployment using the PPC?
(a) A movement down along the PPC
(b) A rightward shift of the PPC
(c) A movement from a point on the PPC to a point inside the PPC
(d) A movement from a point inside the PPC to a point towards the PPC

25. The problem of 'What to produce' covers the issue relating to:
(a) What goods are to be produced (b) What quantities of goods to be produced
(c) Both (a) and (b) (d) Neither (a) nor (b)

26. Consider the following table:

Production Possibilities	A	B	C	D	E
Guns (Units)	0	1	2	3	4
Butter (Units)	10	9	7	4	0

(i) The opportunity cost of increasing guns production from 2 to 3 units is ____ units of butter.
(a) 7 (b) 2
(c) 4 (d) 3

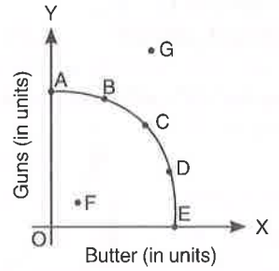
(ii) All possibilities A to E deal with:
(a) Full use of available resources (b) Under-utilisation of available resources
(c) No use of available resources (d) Demand for more resources

(iii) If at some other point say G, the economy produces 2 units of guns and 6 units of butter, then:
(a) It represent under-utilization of resources (b) Economy would operate at a point below PPF
(c) Both (a) and (b) (d) Neither (a) nor (b)

(iv) If the above points A to E are depicted on a graph, then such PPF would be:
(a) Convex to the origin (b) Concave to the origin
(c) Straight line (d) Rectangular hyperbola

27. Economics is the study of:
(a) How society manages its unlimited resources (b) How to reduce our wants until we are satisfied
(c) How society manages its scarce resources (d) How to fully satisfy our limited wants

28. Which point on the following PPC shows a "productively efficient" level of output?



(a) A (b) B
(c) E (d) All of these

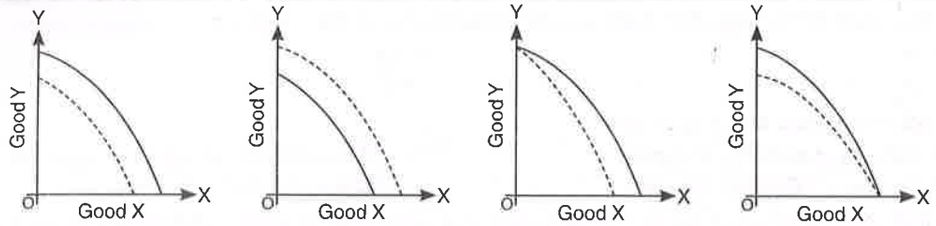
29. In deciding "How to produce", the economy should consider:
(a) Labour Intensive Techniques (b) Capital Intensive Techniques
(c) Both (a) and (b) (d) Neither (a) nor (b)

30. Opportunity Costs arise:
(a) When there is only course of action (b) When there are two or more alternative courses
(c) Both (a) and (b) (d) Neither (a) nor (b)

31. Which of these statement is true about production possibility curve?
(a) It shows various combinations of two goods which yield same level of satisfaction.
(b) It shows various combination of two goods which an economy can produce with a given amount of resources and technology.
(c) It shows various combination of two goods which an economy can produce with a given budget.
(d) It shows various combination of two goods which an economy can produce with a given time.

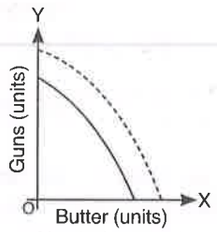
32. The Production Possibility Frontier is generally:
(a) Convex Shaped Downward Sloping (b) Concave Shaped Downward Sloping
(c) Either (a) or (b) (d) Neither (a) nor (b)

33. Due to 'Make in India', there has been large inflow of foreign capital. It will lead to the following change in PPC:



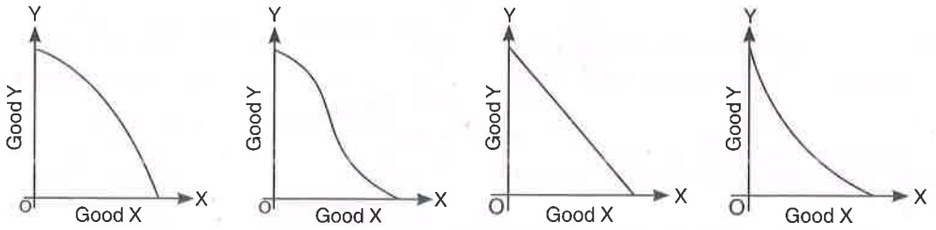
(a) (b) (c) (d)

34. The shift in PPC is caused due to:



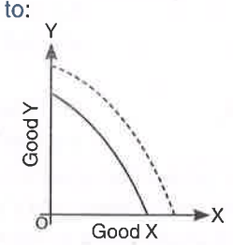
(a) Increase in resources for production of both the goods
(b) Increase in resources for production of butter only
(c) Increase in resources for production of guns only
(d) None of these

35. In case of decreasing MRT, the shape of PPC will be depicted by the following diagram:



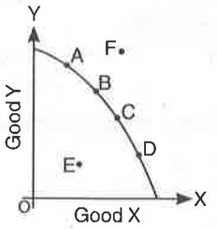
(a) (b) (c) (d)

36. The following change in PPC is due to:



(a) Massive Unemployment
(b) Destruction of Resources
(c) Increase in Resources
(d) Fuller Utilisation of Resources

37. In the order of sequence, the points of 'Underutilisation' and 'Unattainable' are:



(a) A and F
(b) F and E
(c) D and E
(d) E and F

38. Which of the following is an assumption of Production Possibility Frontier?
(a) Resources are not fully employed.
(b) Resources are not equally efficient for production of the two goods.
(c) Resources are not efficiently employed.
(d) Resources available are not fixed.

39. Macroeconomics focuses on all of the following except:
(a) Unemployment Problem
(b) Inflation in the Economy
(c) Aggregate Demand
(d) Jute Industry

40. Which of the following is an example of a Positive Economy:
(a) India should take steps to control rising prices
(b) There are inequalities of income in our economy
(c) India should not be an overpopulated country
(d) Income inequalities should be reduced

41. The statements like 'Economy should control pollution' or 'Unemployment in the economy ought to be reduced' fall within the scope of:
(a) Normative Statements
(b) Positive Statements
(c) Both (a) and (b)
(d) None of these

42. An economy has 2 alternatives of production from the available resources: (i) 20X + 1Y; or (ii) 18X + 2Y. If the economy chooses the second alternative, then what is the MOC of producing Y:
(a) 1X
(b) 2X
(c) 1Y
(d) None of these

43. The Opportunity Cost arises:
(a) When there is just one alternative
(b) When there are two or more alternatives
(c) Either (a) or (b)
(d) None of these

44. In the context of rising prices, following statements are made by two people:
Udit: Prices in the economy are continuously rising;
Shivam: The Government should take reasonable steps to control rising prices.
Identify the statements as Positive Statement and Normative Statement.
(a) Udit: Positive; Shivam: Normative
(b) Udit: Normative; Shivam: Positive
(c) Both are Positive Statements
(d) Both are Normative Statements

45. Production Possibility Frontier is:
(a) Downward Sloping
(b) Concave Shaped
(c) Both (a) and (b)
(d) Either (a) or (b)

Ans. 1. (d); **2.** (c); **3.** (d); **4.** (c); **5.** (b); **6.** (b); **7.** (a); **8.** (a); **9.** (a); **10.** (c); **11.** (b); **12.** (c); **13.** (c); **14.** (b); **15.** (c); **16.** (c); **17.** (b); **18.** (a); **19.** (i - d, ii - a, iii - c); **20.** (a); **21.** (d); **22.** (d); **23.** (b); **24.** (d); **25.** (c); **26.** (i - d, ii - a, iii - c, iv - b); **27.** (c); **28.** (d); **29.** (c); **30.** (b); **31.** (b); **32.** (b); **33.** (b); **34.** (a); **35.** (d); **36.** (c); **37.** (d); **38.** (b); **39.** (d); **40.** (b); **41.** (a); **42.** (b); **43.** (b); **44.** (a); **45** (c)

Very Short Answer Type Questions *(1 Mark each)*

Q. 1. What is meant by scarcity?
Ans. Scarcity refers to limitation of supply in relation to the demand for a commodity.

Q. 2. What is the basic reason for economic problem in all economies?
Ans. The basic reason for economic problem in all economies is scarcity of resources.

Q. 3. What is meant by economizing resources?
Ans. Economizing of resources refers to making optimum use of the available resources.

Q. 4. Define an economy.
Ans. Economy is a system which provides people with the means to work and earn a living.

Q. 5. What is meant by economic problem?
Ans. Economic problem is a problem of choice involving satisfaction of unlimited wants out of limited resources having alternative uses.

Q. 6. How is an economic problem, a choice-making activity?
Ans. An economic problem is a choice-making activity because it requires a decision to make the best possible use of limited resources to satisfy unlimited human wants.

Q. 7. Why does an economic problem arise?
Ans. An economic problem arises because we have to satisfy unlimited wants out of limited resources having alternative uses.

Q. 8. State 2 features of resources that give rise to an economic problem.
Ans. The two features of resources that give rise to an economic problem are: (i) Resources are limited; (ii) They have alternative uses.

Q. 9. What is economics all about?
Ans. Economics is all about making choices in the presence of scarcity.

Q. 10. Name the two important branches of Economics.
Ans. Microeconomics and Macroeconomics.

Q. 11. Define microeconomics.
Ans. Microeconomics is that part of the economic theory which deals with individual units of an economy.

Q. 12. Give two examples of Microeconomic studies.
Ans. (a) Demand of a commodity; (b) Price of commodity.

Q. 13. Define Macroeconomics.
Ans. Macroeconomics is that part of economic theory which studies the behaviour of the aggregates of an economy as a whole.

Q. 14. Give two examples of macroeconomic studies.
Ans. (i) National income; (ii) Price level.

Q. 15. Is the study of cotton textile industry a macroeconomic study or a microeconomic study?
Ans. It is a microeconomic study as it is only a unit of industries.

Q. 16. Why is the study of the problem of unemployment in India considered a macroeconomic study?
Ans. The study of unemployment is considered a macroeconomic study as it relates to the Indian economy as a whole.

Q. 17. Is the study of general price level a macro economic study?
Ans. Yes, it is a macro economic study as general price level is an aggregate of the economy.

Q. 18. What are the Central Problems of an Economy?
Ans. (i) What to Produce; (ii) How to Produce; (iii) For whom to produce.

Q. 19. What is meant by the problem of "What to produce"?
Ans. The problem involves selection of goods and services to be produced and the quantity to be produced of each selected commodity.

Q. 20. What is meant by the problem of "How to produce"?
Ans. This problem deals with the selection of technique i.e. whether to use labour intensive or capital intensive technique in production of goods and services.

Q. 21. What is meant by the problem of "For whom to produce"?
Ans. This problem relates to the distribution of produced goods and services among the individuals within the economy.

Q. 22. Why the problems of what, how and for whom to produce are known as central problems?
Ans. These problems are known as central problems because these are the most basic problems of an economy and all other problems revolve around them.

Q. 23. Define opportunity cost.
Ans. Opportunity cost is the cost of the next best alternative foregone.

Q. 24. What is the opportunity cost of an input which has no alternative use?
Ans. The opportunity cost of such input is zero.

Q. 25. Why does production possibility curve look concave to the origin?
Ans. Production possibility curve looks concave to the origin because of increasing marginal rate of transformation.

Q. 26. What does a rightward shift of production possibility curve indicate?
Ans. Growth of resources.

Q. 27. Give examples of 'Growth of resources'.
Ans. (i) Inventions and innovations, (ii) Discovery of oil reserves, (iii) Increase in labour force.

Q. 28. When does a PPF shift to the right?
Ans. (i) Increase in resources; (ii) Technological upgradation.

Q. 29. Give an example of decrease in resources.
Ans. Destruction of resources due to earthquake/cyclone.

Q. 30. When is the fuller utilisation of available resources said to have taken place?
Ans. Fuller utilisation of available resources is said to take place when an economy operates on any point lying on the PPF.

Q. 31. What does increasing marginal opportunity cost along a PPF mean?
Ans. Increasing marginal opportunity cost along a PPF mean that for each additional increase in the units of a given commodity, more and more of units of another commodity are sacrificed.

Q. 32. State two characteristics of the economic resources which give rise to economic problem.
Ans. (i) Economic resources are scarce; (ii) Economic resources have alternative uses.

Q. 33. Harish earns ₹ 10 lakhs per year from his business. He gets an offer from a company to work at a salary of ₹ 8,40,000 per year. Determine opportunity cost of Harish.
Ans. The opportunity cost of Harish is ₹ 8,40,000, that he can earn in the next best alternative.

Q. 34. Define 'Marginal Rate of Transformation'.
Ans. Marginal Rate of Transformation (MRT) is the ratio of units of one good sacrificed to produce one more unit of the other good.

Q. 35. What do you mean by alternate uses of resources?
Ans. Alternate use of resources means that a resource can be put to more than one use.

Q. 36. How in any one way can an economy increase its production capacity?
Ans. Production capacity can be increased through upgradation in production technology.

Q. 37. A country's resources are fully and efficiently employed. The problem of scarcity exists. What advice will be given to raise the efficiency level of the human resource to fight scarcity?
Ans. Spread of education and training.

Q. 38. Unemployment is reduced due to the measures taken by the government. State its economic value in the context of production possibilities frontier.
Ans. The economic value of reduction in unemployment is that it will help the economy in realizing its production potential.

Q. 39. The government has started promoting foreign capital. What is its economic value in the context of Production Possibilities Frontier?
Ans. It will increase inflow of foreign capital. Its economic value is the rise in production potential due to increase in resources.

Q. 40. Large number of technical training institutions have been started by the government. State its economic value in the context of production possibilities frontier.

Ans. The economic value of technical training is that it raises the production potential of the country by raising the efficiency of the labor.

Q. 41. Name the economic value achieved through the spread of education in the context of production potential.

Ans. It will result in increase in efficiency leading to economic growth.

Q. 42. Name the economic value achievable when attempts are made to increase resources in the country.

Ans. Economic growth.

Q. 43. State any two central problems under 'problem of allocation of resources'.

Ans. (i) What to produce and in what quantity; (ii) How to produce.

Q. 44. What does concavity of PPC indicate?

Ans. Concavity of PPC means that for every additional unit of one good produced, more and more units of another good is to be sacrificed.

Q. 45. What is the effect on marginal rate of transformation when we move downwards along a production possibility curve?

Ans. Marginal Rate of Transformation increase while we move downwards along a production possibility curve (PPC).

Q. 46. Define normative economics with a suitable example.

Ans. Economics as a 'normative science' deals with situations of value judgements or condition of 'what ought to be'. Example: India should create more employment opportunities.

Q. 47. State any one assumption for the construction of the curve that shows the possibilities of potential production of two goods in an economy.

Ans. Resources are fully and efficiently utilised.

Short Answer Type Questions (*3-4 Marks each*)

1. Why does an economic problem arise? Explain.
2. Distinguish between microeconomics and macroeconomics.
3. What are the three central problems of an economy? Why do they arise?
4. What is meant by the problem of allocation of resources?
5. Distinguish between positive economics and normative economics. Give an example of each.
6. Explain the central problem of 'how to produce'.

   OR

   Explain the central problem of 'choice of technique'.
7. Explain 'what to produce' with the help of an example.

   OR

   Explain the central problem of the choice of products to be produced.
8. Explain the central problem of "for whom to produce".

   OR

   Explain the central problem of distribution in an economy.
9. What is opportunity cost? Explain with the help of a numerical example.
10. Discuss meaning of production possibility curve through a schedule and diagram.
11. Why do central problems arise? Explain.
12. Explain why a production possibilities curve is concave.

13. Draw a production possibility curve and show the following situations: (1) Fuller utilisation of resources; (2) Economic growth; (3) Decrease in resources; (4) Under utilization of resources.
14. What does a production possibility curve show? When will it shift to the right?
15. How is production possibility curve affected by unemployment in the economy? Explain.

    OR

    Explain how a production possibility curve is affected when resources are inefficiently employed in an economy.
16. What is meant by marginal opportunity cost? Why is marginal opportunity cost increasing in case of PPF?
17. Give the various reasons for shift in production possibility curve.
18. What is 'Marginal Rate of Transformation'? Explain with the help of an example.
19. Define Production Possibilities Curve. Explain why it is downward sloping from left to right.
20. Explain the meaning of opportunity cost with the help of production possibility schedule.
21. State any three assumptions on which a 'Production Possibilities Curve' is based.
22. State the meaning and properties of production possibilities frontier.
23. What will be the effect on PPC of Bihar if better job opportunities are created in Bihar?

    Hint: Due to creation of "Better Job Opportunities", economy will start moving forward towards PPC.
24. Using a diagram, explain what will happen to the PPC of Bihar if the river Kosi causes widespread floods?

    Hint: It will lead to destruction of resources in Bihar, which will shift the PPC leftward.
25. State the central problems of an economy.
26. What will likely be the impact of large scale inflow of foreign capital in India on Production Possibilities Curve and why?

    Hint: Inflow of foreign capital will raise production potential of the country leading to upward shift of PP curve.
27. Explain the concept of marginal opportunity cost using a numerical example.
28. In what circumstances may the production possibility frontier shift away from the origin? Explain.

Unsolved Practicals

1. An unemployed person, Ramesh is looking out for a job. Ramesh received 2 job offers: one for ₹ 20,000 from ICICI Bank and other offer of ₹ 15,000 from HDFC Bank. What is the opportunity cost for Ramesh if he accepts the offer of ICICI Bank?

   {₹ 15,000}
2. Calculate the marginal opportunity cost (MOC) of commodity X for the given combinations:

Commodity X	0	1	2	3	4	5
Commodity Y	100	95	85	70	50	25

   {MOC: –; 5; 10; 15; 20; 25}
3. A country produces two goods: A and B. Its production possibilities are shown in the following table. Calculate the values of MRT. Construct a PPF, with the help of given possibilities and discuss the shape of PPF.

Possibilities	A	B	C	D	E	F
Good A	0	1	2	3	4	5
Good B	100	95	85	70	50	25

   {MRT: –; 5:1; 10:1; 15:1; 20:1; 25:1 and PPF will be concave shaped}

4. Giving reason, comment on the shape of Production Possibilities curve based on the following schedule:

Good X (units)	0	1	2	3	4
Good Y (units)	8	6	4	2	0

{As MRT is Constant, PPC will be downward sloping straight line}

5. Giving reason, comment on the shape of the Production Possibilities curve based on the following schedule:

Good X (units)	0	1	2	3	4
Good Y (units)	20	18	14	8	0

{As MRT is Increasing, PPC will be downward sloping and concave to the origin}

6. Giving reason, comment on the shape of Production Possibilities Curve based on the following table:

Good X (units)	Good Y (units)
0	4
1	3
2	2
3	1
4	0

{As MRT is Constant, PPC will be downward sloping straight line}

POWER BOOSTER

1. MARKET ECONOMY AND CENTRALLY PLANNED ECONOMY

On the basis of nature of economic activities, economies can be broadly classified as:

1. Market Economy
2. Centrally Planned Economy

Market Economy

Market Economy is the one in which the means of production are owned, controlled and operated by the private sector. This economy is also known as Capitalist Economy.

In this kind of economy, production is done mainly for earning profits. So, central problems are solved by *Price Mechanism*, which works through the forces of demand and supply. The price, at which both demand and supply of a commodity are equal to each other, is determined as the equilibrium price in the market.

Features of Market Economy

The important features of market economy are as follows:

1. *Private ownership over means of production:* All the means of production (i.e., land, labour, capital and enterprise) are owned and managed by private sector.
2. *Independent decision-making:* Private sector is free to take all decisions regarding production, consumption and investment independently.
3. *Level of Competition:* There exists stiff competition among different private firms.
4. *Profit Motive:* All the decisions are generally guided by the profit motive.
5. *Non-interference of government:* The government does not interfere in any economic activity.
6. *Price Mechanism guides all decisions:* A market economy works through price mechanism. It is a process where price is determined by market forces of demand and supply. It helps in solving central problems (i.e. what, how and for whom to produce) of economy.

Centrally Planned Economy

Centrally Planned Economy refers to an economy in which means of production are owned, controlled and operated by the government. This economy is also known as Socialist Economy.

The government organises all economic activities and distributes various goods among the consumers on the basis of its own decisions. In this economy, the basic problems are solved by *Central Planning Authority* (generally known as Planning Commission). The basic aim, while solving central problems, is to work for social welfare of people.

Features of Centrally Planned Economy

The important features of centrally planned economy are:

1. *State ownership over means of production:* All the means of production are owned by the government.

2. *Decision-making by government:* Government takes all the decision regarding consumption, production and investment.
3. *Level of Competition:* There does not exist any element of competition under centrally planned economy.
4. *Social welfare motive:* All decisions aim to maximize social welfare.
5. *Planning Mechanism guides all decisions:* All the decisions are taken and coordinated by the central planning authority. The central planning authority decides what, how and for whom to produce. *Production, allocation and distribution of resources take place through planning.* There is no role for market or price mechanism.

Market Economy Vs Centrally Planned Economy

Basis	Market Economy	Centrally Planned Economy
Meaning	It refers to an economy in which the means of production are owned, controlled and operated by the private sector.	It refers to an economy in which the means of production are owned, controlled and operated by the government.
Ownership	All the means of production (land, labour, capital and enterprise) are private property.	Means of production are owned by the government in case of centrally planned economy.
Decision Making	Decisions regarding production, consumption and investment are made independently in the market economy.	Decision making is done by the government only.
Competition	There exists stiff competition among the firms	There does not exist any element of competition under centrally planned economy.
Role of Government	Government does not play any role.	Government plays the complete role.
Problem-solving	Central problems (what, how, for whom to produce) are solved through Price Mechanism.	Central problems are solved by Central Planning Authority.

Mixed Economy

There is one more type of economy, known as 'Mixed Economy'. *Mixed Economy refers to a system in which public and private sector are allotted their respective roles for solving the central problems of the economy together.*

- It combines the features of both centrally planned and market economy.
- In this economy, private sector is given the freedom to choose its lines of production and fix prices on the basis of price mechanism. At the same time, the government keeps a close watch on its activities.
- In the present modern world, no economy is 100% centrally planned or market oriented as both the sectors play more or less equal roles in the functioning of the economy. So, modern economies are virtually mixed economies in which central problems are solved partly through central planning and partly through price mechanism.

2. PPF AND CENTRAL PROBLEMS

Production possibility curve (PPF) is an important tool of Modern Economics. It can be used to explain the various central problems of an economy.

What to Produce

This problem involves selection between different combinations of commodities, that can be produced with the help of available resources. This problem can be easily explained with the help of PPF.

In Fig. 1.15, if the economy is operating at point 'B', then 20 units of guns and 1 unit of butter is produced. On the other hand, if the economy is operating at point 'C, then 18 units of guns and 2 units of butter are produced. *Thus, different points of PPF show different ways of allocation of resources, between the two goods to be produced.* The point, at which the economy will operate, depends upon the demand of consumer for various goods.

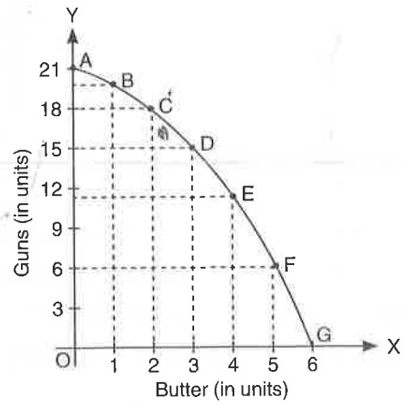


Fig. 1.15

How to Produce

This problem is related to technique to be used in production of goods and services. *PPF helps in explaining, whether the technology used is efficient or not.* All the points on PPF (Fig. 1.16) imply that the most efficient technology is used. As seen in the given diagram, point H show use of inefficient technique of production, whereas points A to G shows use of efficient techniques of production.

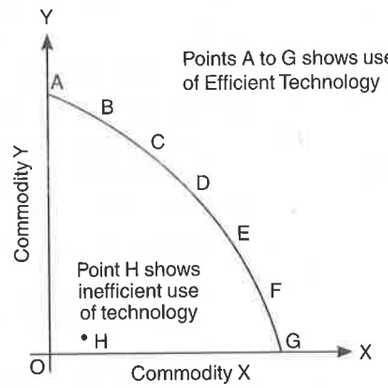


Fig. 1.16

For Whom to Produce

This problem basically involves determination of distribution of national product. *PPF only gives a rough idea about distribution of national product.* We may construct a PPF with luxuries on one axis and necessities on the other axis.

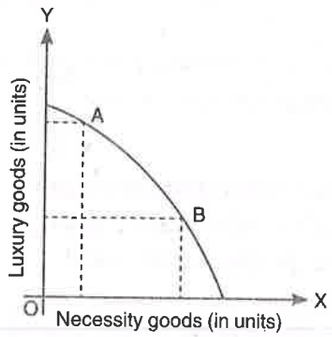


Fig. 1.17

As seen in Fig. 1.17, necessities are taken on the X-axis and luxuries on the Y-axis. Point A shows that more luxuries are produced and there exist considerable inequalities of income in the economy. However, point B shows that more necessities are produced and there is relatively almost equal distribution of income in the economy.

2

CONSUMER'S EQUILIBRIUM

LEARNING OBJECTIVES

2.1 INTRODUCTION

A consumer is the main decision-maker of consumption pattern. ***A consumer is one who buys goods and services for satisfaction of wants.*** He takes decisions with regard to the kind of goods to be purchased in order to satisfy his wants. The main objective is to get maximum satisfaction from spending his income on various goods and services.

The aim of this chapter is to make you understand: How does a consumer maximize his satisfaction from consumption of goods and services. As the resources are limited in relation to unlimited wants, a consumer has to follow some principles or laws in order to attain the highest satisfaction level. The two main approaches to study consumer's behaviour and consumer's equilibrium are:

1. **Cardinal Utility Approach** (or Marshall's Utility Analysis or Marginal Utility Analysis)
2. **Ordinal Utility Approach** (or Indifference Curve Analysis or Hicksian Analysis)

2.2 CARDINAL UTILITY APPROACH

People consume different goods and services in order to maximise the satisfaction level. However, to do this, it is necessary to determine quantum of satisfaction obtained from a particular commodity. Under the Cardinal Utility Approach, the concept of **"Utility"** is used to attain the Consumer's Equilibrium.

2.3 CONCEPT OF UTILITY

Although the concept of 'taste' and 'satisfaction' are familiar for all of us, it is much more difficult to express these concepts in concrete terms. *For example,* suppose you have just eaten