- **Normal good** → যেসব পণ্যের ক্ষেত্রে মানুষের আয় বাড়লে তাদের চাহিদাও বাড়ে।
- **Complementary good** → যেসব পণ্য একে অপরের সাথে একসাথে ব্যবহার করতে হয়, অর্থাৎ একটির ব্যবহার অন্যটির উপর নির্ভরশীল।
- **Substitute good** → যেসব পণ্য একে অপরের বিকল্প হিসেবে ব্যবহার করা যায়, অর্থাৎ একটির দাম বেড়ে গেলে মানুষ অন্যটি বেশি ব্যবহার করে।
- **Ordinary good** → যেসব পণ্যের ক্ষেত্রে দাম বাড়লে চাহিদা কমে যায় এবং দাম কমলে চাহিদা বেড়ে যায়; অর্থাৎ চাহিদার সাধারণ নিয়ম মেনে চলে।
- **Inferior good** → যেসব পণ্যের চাহিদা মানুষের আয় বাড়লে উল্টো কমে যায়, কারণ তারা তখন উন্নত মানের পণ্য ব্যবহার শুরু করে।
- **Giffen good** → বিশেষ ধরনের পণ্য, যেগুলোর দাম বাড়লেও চাহিদা কমে না, বরং বেড়ে যায় (খুবই বিরল ঘটনা)।
- **Luxury good** → যেসব বিলাসবহুল পণ্যের চাহিদা মানুষের আয় বাড়লে আনুপাতিক হারে না বেড়ে অনেক বেশি হারে বেড়ে যায়।

i) Economics Definition and Scarcity

- **Economics Definition:** Economics is the social science that studies how individuals, governments, firms, and nations make choices about **allocating scarce resources** to satisfy their unlimited wants and needs. It's fundamentally about **choice** under conditions of **scarcity**.
- **Scarcity:** This is the basic and persistent problem in economics. It means that **human wants are virtually unlimited**, but the **resources** available to satisfy those wants **are finite** (limited). Scarcity forces us to make choices.
    - **Example:** You have $10 (a limited resource) and you want to buy a new book and a ticket to the movies (unlimited wants). Since $10 can't cover both, you must choose one, demonstrating the constraint of scarcity.

ii) Three Basic Economic Questions

Every society, regardless of its size or political system, must answer these three fundamental questions:

1. **What to Produce?** What goods and services will be produced, and in what quantities? (e.g., more healthcare or more national defense?)
2. **How to Produce?** How will the goods and services be produced? (e.g., using more labor-intensive or capital-intensive methods? Using renewable or fossil fuels?)
3. **For Whom to Produce?** Who will receive the goods and services? How will the total output be distributed among members of society? (e.g., distribution based on income, need, or merit?)

iii) Micro vs. Macro Economics

- **Microeconomics Definition:** Focuses on the **individual parts** of the economy—the decisions of individual households, firms, and markets. It looks at how prices are determined and how resources are allocated in specific markets.
    - **Micro Topic Example:** The effect of a cigarette tax on the price and consumption of cigarettes.
- **Macroeconomics Definition:** Deals with the **economy as a whole**—aggregate phenomena such as inflation, unemployment, and economic growth.
    - **Macro Topic Example:** The impact of a change in national interest rates on the overall rate of unemployment.

iv) Opportunity Cost

- **Opportunity Cost:** The **value of the next-best alternative** that must be forgone when a choice is made. It is the cost of what you give up to get what you want.
    - **Example:** If you spend an hour studying economics, the opportunity cost is the value of the next-best thing you could have done, like earning $15 at a part-time job or getting an hour of sleep. The **cost is not the money spent, but the value of the lost opportunity.**

v) Inflation

- **Inflation:** A sustained **increase in the general price level** of goods and services in an economy over a period of time. When the general price level rises, each unit of currency buys fewer goods and services; consequently, inflation reflects a reduction in the purchasing power of money.
    - **Types of Inflation:**
        - **Demand-Pull Inflation:** Caused by aggregate demand growing faster than the economy's productive capacity (too much money chasing too few goods).
        - **Cost-Push Inflation:** Caused by an increase in the costs of production (e.g., rising oil prices or wage rates), which firms pass on to consumers as higher prices.

vi) Trade-off vs. Opportunity Cost

- **Trade-off:** Simply means giving up one thing to get another. Every choice involves a trade-off.
- **Opportunity Cost:** The **specific value** of the *best* option given up in a trade-off.
  - **Relationship:** Every trade-off has an associated opportunity cost.

vii) Production Possibilities Frontier (PPF)

- **PPF:** A curve illustrating the varying amounts of two products that can be produced **efficiently** with a fixed amount of resources and technology. * **Key Points:** * **Points ON the PPF: Efficient** production (all resources fully utilized). * **Points INSIDE the PPF: Inefficient** production (resources are underutilized or mismanaged). * **Points OUTSIDE the PPF: Unattainable** with current resources and technology.
  - **Law of Increasing Opportunity Cost:** As production of one good increases, the opportunity cost of producing an additional unit of that good rises. This is why the PPF is typically **bowed outward** (concave to the origin).

viii) Law of Demand

- **Law of Demand:** States that, **ceteris paribus** (all other factors being equal), as the **price of a good or service rises, the quantity demanded falls**, and conversely, as the price falls, the quantity demanded rises. This is an **inverse relationship**.

ix) Ceteris Paribus

- **Ceteris Paribus (CP):** A Latin phrase meaning "**all other things being equal.**" It is a fundamental assumption in economic analysis, allowing economists to isolate the effect of one variable on another.
  - **Example:** In the Law of Demand, we assume that while the price of coffee changes, factors like consumer income, the price of tea, and consumer tastes all remain constant (ceteris paribus).

x) Factors Affecting Demand

The **Demand Curve** itself shifts when factors *other than the price of the good* change. These factors include:

1. **Consumer Income:**
    - **Normal Goods:** Demand increases as income increases (e.g., steak, brand-new cars).
    - **Inferior Goods:** Demand decreases as income increases (e.g., instant noodles, used clothing).
2. **Prices of Related Goods:**
    - **Substitutes:** Goods used in place of one another. An increase in the price of a substitute increases the demand for the original good (e.g., if the price of Pepsi rises, the demand for Coke increases).
    - **Complements:** Goods consumed together. An increase in the price of a complement decreases the demand for the original good (e.g., if the price of hot dogs rises, the demand for hot dog buns decreases).
3. **Tastes and Preferences:** Changes in consumer preference.
4. **Expectations:** Expectations about future prices or income.
5. **Population:** Market size.

Part 2: Consumer Choice and Utility

xi) Consumption, Budget Constraint, and Utility Definition

- **Consumption:** The use of goods and services to satisfy human wants.
- **Utility:** The **satisfaction or pleasure** a consumer derives from consuming a good or service. It is a subjective measure.
- **Budget Constraint:** The **limit** on the consumption bundles that a consumer can afford. It shows the combinations of goods a consumer can purchase given their income and the prices of the goods.

xii) Diminishing Marginal Utility

- **Total Utility (TU):** The total satisfaction received from consuming a given total quantity of a good or service.
- **Marginal Utility (MU):** The **additional utility** gained from consuming **one more unit** of a good or service.
- **Law of Diminishing Marginal Utility:** States that as a person consumes more and more units of a specific good, the **additional satisfaction (MU) derived from each successive unit decreases**.
    - **Example:** The first slice of pizza on an empty stomach provides a lot of utility. The fifth slice provides very little *additional* utility, and the tenth might even provide negative utility (sickness).

xiii) Marginal Utility and Price (Consumer Equilibrium)

- The goal of the consumer is to maximize utility subject to their budget constraint. Consumers achieve **Consumer Equilibrium** when the **marginal utility per dollar spent** is equal for all goods consumed.

$$\frac{MU_A}{P_A} = \frac{MU_B}{P_B} = \dots$$

Where MU is Marginal Utility and P is Price. This rule means the consumer gets the same "bang for their buck" from the last dollar spent on every item.

xiv) Downward Sloping Demand

- The Law of Diminishing Marginal Utility helps explain the **downward-sloping nature of the Demand Curve**. Because each additional unit provides less satisfaction (MU), a consumer is only willing to purchase an additional unit if its **price is lower**.

xv) Indifference Curve (IC)

- **Indifference Curve:** A curve that shows all the consumption bundles (combinations of two goods) that give the consumer the **same level of total utility or satisfaction**. * **IC Properties and Intersection:**
    1. **Higher ICs are preferred to Lower ICs:** More is generally better.
    2. **ICs are Downward Sloping:** If you give up some of one good, you must gain some of the other to maintain the same satisfaction level.
    3. **ICs are Convex to the Origin:** This reflects the **Diminishing Marginal Rate of Substitution (MRS)**—you are less willing to give up a good you have little of.
    4. **ICs DO NOT Intersect:** If they intersected, it would violate the property that a higher IC represents a higher utility level (transitivity).

xvi) Income Effect / Substitution Effect

When the price of a good falls, the consumer's demand changes due to two effects:

1. **Substitution Effect (SE):** Consumers substitute the now relatively **cheaper** good for the relatively **more expensive** good. This always leads to an increase in the quantity demanded of the cheaper good.
2. **Income Effect (IE):** The drop in price increases the **purchasing power** (real income) of the consumer.
    - For **Normal Goods**, the increased purchasing power leads to an **increase** in quantity demanded.
    - For **Inferior Goods**, the increased purchasing power leads to a **decrease** in quantity demanded.

xvii) Cost-Benefit Analysis and Consumer Surplus

- **Cost-Benefit Analysis:** A systematic process used to calculate and compare the benefits and costs of a decision or investment. A decision is generally deemed sound if the **Benefits > Costs**.
- **Consumer Surplus (CS):** The **monetary gain** obtained by consumers because they are able to purchase a product for a price that is **less than the highest price** they would be willing to pay. It is the area below the demand curve and above the market price.

Part 3: Market Structure and Efficiency

xviii) Competition and Perfect Competition

- **Competition:** The rivalry among sellers trying to achieve such goals as increasing profits, market share, and sales volume by varying the elements of the marketing mix: price, product, distribution, and promotion.
- **Perfect Competition:** A market structure characterized by:
    1. **Many Buyers and Sellers:** No single participant can influence the market price (they are **price takers**).
    2. **Homogeneous (Identical) Products:** Goods are perfect substitutes.
    3. **Perfect Information:** All participants know the prices and quality.
    4. **Free Entry and Exit:** Firms can enter and leave the market easily in the long run.

xix) Absolute Advantage and Comparative Advantage

These concepts explain the basis for international trade.

- **Absolute Advantage:** A country/producer has an absolute advantage if it can produce **more** of a good or service than competitors, using the **same amount of resources**.
    - **Example:** The U.S. can produce 100 cars/day, while Mexico can produce 50 cars/day. The U.S. has an absolute advantage in car production.
- **Comparative Advantage:** A country/producer has a comparative advantage if it can produce a good or service at a **lower opportunity cost** than competitors. **Trade is based on comparative advantage**, leading to greater specialization and total output.
    - **Example:** Country A can produce Wheat at an opportunity cost of 2 tons of Steel, while Country B can produce Wheat at an opportunity cost of 3 tons of Steel. Country A has a comparative advantage in Wheat.

xx) Market Equilibrium

- **Market Equilibrium:** A state where the quantity demanded (Qd) is **exactly equal** to the quantity supplied (Qs). At this **Equilibrium Price** (P_e) and **Equilibrium Quantity** (Q_e), there is no pressure for the price to change. * **Changes in Equilibrium:**
  - **Shortage:** Occurs when $Qd > Qs$ (price is below equilibrium); this pressures the price **up**.
  - **Surplus:** Occurs when $Qs > Qd$ (price is above equilibrium); this pressures the price **down**.

xxi) Quantity Demanded vs. Demand

This is a critical distinction in economics:

- **Quantity Demanded (Qd):** The **specific amount** consumers are willing and able to buy at a **given price**. Changes in price cause a **movement along** the existing demand curve.
- **Demand:** The entire relationship between price and quantity demanded, represented by the **entire demand curve**. Changes in non-price factors (like income or tastes) cause the entire curve to **shift** (a **change in Demand**).

xxii) Law of Supply

- **Law of Supply:** States that, **ceteris paribus**, as the **price of a good or service rises, the quantity supplied rises**, and conversely, as the price falls, the quantity supplied falls. This is a **direct relationship**.

xxiii) Elasticity

- **Elasticity:** A measure of the **responsiveness** of one variable to a change in another. It indicates how much Qd or Qs changes when price or income changes.
  - **Elastic:** A large change in Qd or Qs due to a change in price (elasticity > 1).
  - **Inelastic:** A small change in Qd or Qs due to a change in price (elasticity < 1).
  - **Slope:** While related, elasticity is not the same as the slope of the curve. Elasticity is a **ratio of percentage changes**, making it unit-free, while slope is a ratio of absolute changes.

xxiv) Types of Elasticity

1. **Price Elasticity of Demand (E_d):** Measures the responsiveness of Qd to a change in price.

$$E_d = \frac{\% \text{ Change in Quantity Demanded}}{\% \text{ Change in Price}}$$

2. **Income Elasticity of Demand (E_I):** Measures the responsiveness of Qd to a change in consumer income.
   - If $E_I > 0$: **Normal Good.**
   - If $E_I < 0$: **Inferior Good.**
3. **Cross-Price Elasticity of Demand (E_{xy}):** Measures the responsiveness of the Qd of Good X to a change in the price of Good Y.
   - If $E_{xy} > 0$: **Substitutes** (e.g., price of Coke rises, Qd of Pepsi rises).
   - If $E_{xy} < 0$: **Complements** (e.g., price of Hot Dogs rises, Qd of Buns falls).

Part 4: Macroeconomics (Aggregate Economy)

xxv) Gross Domestic Product (GDP)

- **GDP:** The **total market value of all final goods and services** produced **within a country's borders** in a specific period, usually one year.
    - **"Final Goods and Services":** Goods and services sold to the final user, not those used as inputs for other goods (intermediate goods).

xxvi) Ways to Measure GDP

GDP can be measured using three equivalent methods:

1. **Expenditure Approach:** Summing up the spending on final goods and services.

$$GDP = C + I + G + (X - M)$$

    - **C:** Consumption (Household spending).
    - **I:** Investment (Business spending on capital, inventories, etc.).
    - **G:** Government Purchases (Spending on goods and services).
    - $(X - M)$**:** Net Exports (Exports minus Imports).
2. **Income Approach:** Summing up all income earned by factors of production (Wages, Rent, Interest, Profits).
3. **Value-Added Approach:** Summing the market value added at each stage of production.

xxvii) GDP Growth Rate and Economic Growth

- **GDP Growth Rate:** The percentage change in a country's GDP from one period to another. It is the primary indicator of **economic growth**.

$$\text{Growth Rate} = \frac{\text{GDP}_t - \text{GDP}_{t-1}}{\text{GDP}_{t-1}} \times 100$$

- **Economic Growth:** An increase in the amount of goods and services produced per head of the population over a period of time. Sustained economic growth is the main goal of most macroeconomic policies.

xxviii) GNP and GDP Deflator

- **Gross National Product (GNP):** The total market value of all final goods and services produced by a country's **residents** (citizens and firms), regardless of where the production takes place.
    - **Difference:** GDP focuses on **location** (within borders); GNP focuses on **ownership** (by residents).
- **GDP Deflator:** A measure of the overall price level (inflation) in the economy. It is the ratio of **Nominal GDP** (GDP valued at current prices) to **Real GDP** (GDP valued at base year prices).

$$\text{GDP Deflator} = \frac{\text{Nominal GDP}}{\text{Real GDP}} \times 100$$

xxix) GDP vs. CPI

Both are measures of the price level, but they differ in scope:

- **GDP Deflator:** Measures the prices of **all** goods and services **produced domestically**.
- **Consumer Price Index (CPI):** Measures the overall cost of the goods and services **bought by a typical consumer** (a **fixed basket** of goods).
    - **Difference Example:** An increase in the price of an imported car affects the CPI but not the GDP Deflator. An increase in the price of a military tank affects the GDP Deflator but not the CPI (as it's not in the typical consumer basket).

xxx) Unemployment and Unemployment Rate

- **Unemployment:** Occurs when people are actively seeking work but are unable to find a job.
- **Unemployment Rate:** The percentage of the total **labor force** that is unemployed.

$$\text{Unemployment Rate} = \frac{\text{Number of Unemployed}}{\text{Labor Force}} \times 100$$

    - **Labor Force:** Employed + Unemployed.

xxxi) Disposable Income

- **Disposable Income (DI):** The amount of money that households have available for **spending and saving** after all taxes have been paid and all transfers (like social security payments) have been received. It is the key determinant of consumption.

$$DI = \text{Personal Income} - \text{Personal Taxes}$$

xxxii) Fiscal Policy and Monetary Policy

These are the two main tools for managing the macroeconomy:

- **Fiscal Policy:** Refers to the use of **government spending (G)** and **taxation (T)** to influence the economy. It is controlled by the government and legislature.
  - **Expansionary FP:** Increase G or Decrease T (to stimulate the economy).
  - **Contractionary FP:** Decrease G or Increase T (to cool down the economy).
- **Monetary Policy:** Refers to the actions undertaken by the **central bank** (e.g., the Federal Reserve or Bangladesh Bank) to influence the availability and cost of money and credit to help promote national economic goals.
  - **Tools:** Open Market Operations, Reserve Requirement, Discount Rate.

xxxiii) Cash Reserve Ratio (CRR)

- **Cash Reserve Ratio (CRR):** The **minimum fraction of a commercial bank's deposits** that the central bank requires them to hold as cash reserves.
  - **Impact:** A **higher CRR** means banks have less money to lend, which **decreases the money supply** (a contractionary policy). A **lower CRR** increases the money supply (an expansionary policy).