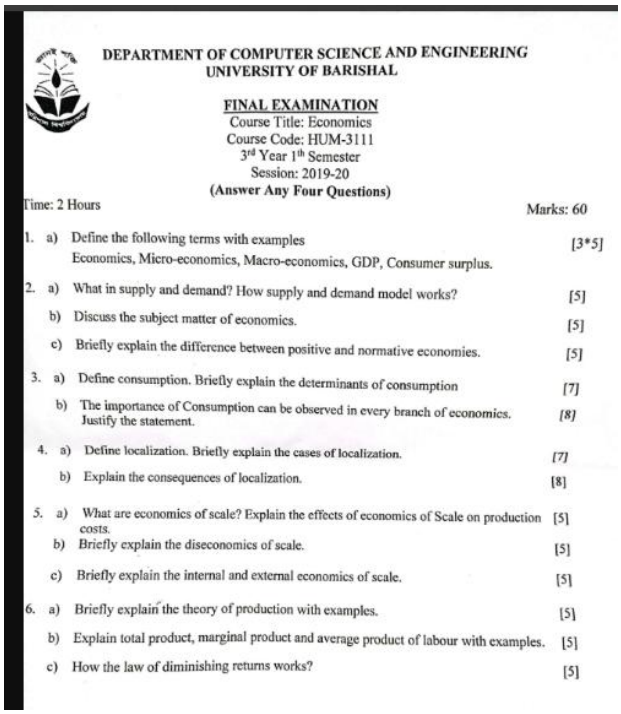


DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
UNIVERSITY OF BARISHAL

FINAL EXAMINATION
Course Title: Economics
Course Code: HUM-3111
3rd Year 1th Semester
Session: 2019-20
(Answer Any Four Questions)

Time: 2 Hours Marks: 60

1. a) Define the following terms with examples [3*5]
Economics, Micro-economics, Macro-economics, GDP, Consumer surplus.

2. a) What in supply and demand? How supply and demand model works? [5]
b) Discuss the subject matter of economics. [5]
c) Briefly explain the difference between positive and normative economies. [5]

3. a) Define consumption. Briefly explain the determinants of consumption [7]
b) The importance of Consumption can be observed in every branch of economics. Justify the statement. [8]

4. a) Define localization. Briefly explain the cases of localization. [7]
b) Explain the consequences of localization. [8]

5. a) What are economics of scale? Explain the effects of economics of Scale on production costs. [5]
b) Briefly explain the diseconomics of scale. [5]
c) Briefly explain the internal and external economics of scale. [5]

6. a) Briefly explain the theory of production with examples. [5]
b) Explain total product, marginal product and average product of labour with examples. [5]
c) How the law of diminishing returns works? [5]

###**Question 1**###

** **a) Define the following terms with examples: [3×5]**

1. Economics:

Economics is the subject that teaches us how people, companies, and governments use their limited money and resources to meet unlimited wants and needs. In simple words, economics helps us to decide what to buy, what to sell, and how to use things properly so that nothing is wasted.

Example:
A person has 500 taka. He wants to buy both a book and a pen, but the money is not enough. So, he has to decide which one is more important.

2. Micro-economics:

Microeconomics is the part of economics that deals with small things, like how one person, one family, or one company earns and spends money. It focuses on individual decisions and small markets.

Example:
How much tea is sold in a small shop or what price people are ready to pay for rice in a local market—these are microeconomics topics.

3. Macro-economics:

Macroeconomics looks at the big picture. It studies the whole country's economy, not small parts. It deals with topics like total income, total savings, total spending, unemployment, inflation (price increase), etc.

Example:
If the government wants to know how much all people in Bangladesh are earning in a year (called National Income), this is macroeconomics.

4. GDP (Gross Domestic Product):

GDP means the total value of all goods and services produced inside a country in one year. It shows how rich or poor a country is. If a country produces more things, its GDP will be high.

Example:
In 2023, Bangladesh's GDP was about $460 billion. This includes all things like clothes, food, buildings, and services made in the country.

5. Consumer Surplus:

Consumer surplus happens when a person is ready to pay more for something, but they get it at a lower price. The difference between these two prices is the consumer surplus. It is like a bonus or extra benefit for the buyer.

Example:
You wanted to buy a shirt for 600 Taka, but you got the same shirt for 500 Taka. Your consumer surplus is 100 Taka.

Of course! Here's a **more detailed and very easy explanation** you can confidently write in your exam:

###**Question 2**###

**** a) What is Supply and Demand? How Supply and Demand Model Works? [5]**

What is Demand?

Demand means how many goods or services the buyers want to buy at different prices. When the price of something is low, people want to buy more. When the price is high, people usually buy less.

👉 **Example:**
If the price of oranges is 50 Taka per kg, many people will buy it. But if the price rises to 150 Taka, fewer people will buy.

What is Supply?

Supply means how many goods or services the sellers are ready to sell at different prices. When the price of something is high, sellers are happy to supply more because they can earn more profit. If the price is low, they may supply less.

👉 **Example:**
If the price of mangoes is 200 Taka per kg, farmers will bring more mangoes to sell in the market. But if the price is only 50 Taka, they may bring fewer mangoes.

How the Supply and Demand Model Works:

The **Supply and Demand Model** explains how the price of a product is set in the market.

The model has two curves:

1. **Demand Curve:** Shows that when price goes up, demand goes down.
2. **Supply Curve:** Shows that when price goes up, supply also goes up.

Equilibrium Point:

Where both the curves meet is called the **equilibrium price**.
At this point:

- The amount sellers want to sell = the amount buyers want to buy.
- The market is stable.
- There is no shortage or surplus of goods.

👉 **Example:**
If the price of eggs in the market is set at 10 Taka each, and both buyers and sellers are satisfied at this price, then this is the equilibrium price.

b) **Discuss the Subject Matter of Economics. [5]

Economics studies how people, businesses, and governments use limited resources to satisfy unlimited wants. The subject matter of economics can be divided into **two main parts**:

1. Theoretical Economics:

This part explains the basic ideas or principles of economics. It has two branches:

a) Microeconomics:

- Studies small units like a single person, family, or company.
- Explains how individual buyers and sellers make decisions.

👉 **Example:** How the price of sugar is fixed in the market.

b) Macroeconomics:

- Studies the economy of the whole country or world.
- Talks about things like inflation, unemployment, total income, etc.

👉 **Example:** Why the price of goods is rising in Bangladesh.

2. Applied Economics:

This part explains how economic theories are used in real life to solve problems. It includes:

a) Consumption:

How people use goods and services to satisfy their needs.

👉 **Example:** Buying food, clothes, books, etc.

b) Production:

How goods and services are made by using resources like labor, machines, and land.

👉 **Example:** Making clothes in a factory.

c) Exchange:

How goods and services are exchanged between people or countries through trade.

👉 **Example:** Selling rice in the market.

d) Distribution:

How income (money) is shared among people for their work—like wages, profit, rent, interest.

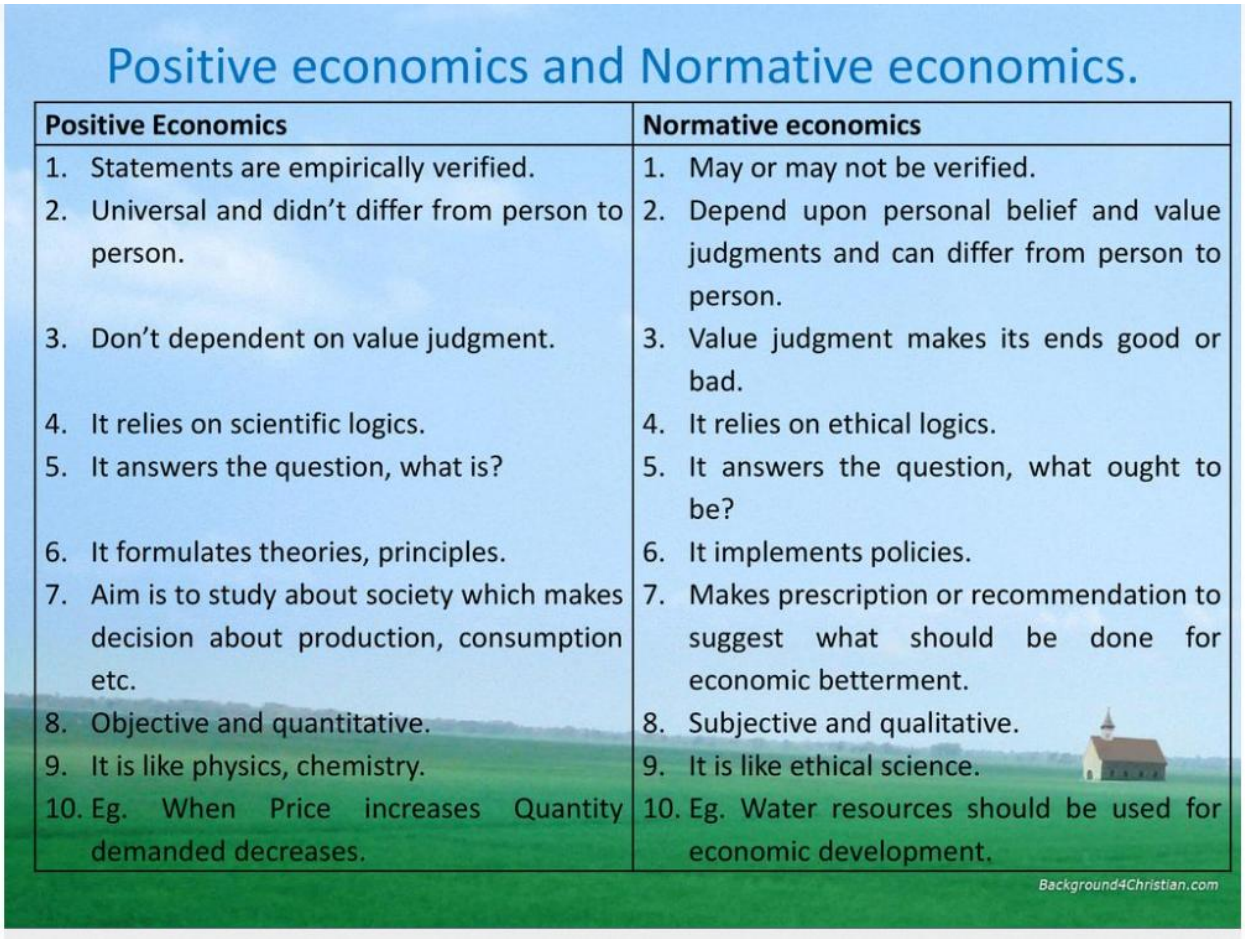
👉 **Example:** Paying salary to a factory worker.

e) Public Finance:

How the government earns and spends money.

👉 **Example:** Collection of tax and building roads, hospitals, etc.

**c) Briefly explain the difference between positive and normative economics.



###**Question 3**###

**a) Define consumption. Briefly explain the determinants of consumption.

1. Definition of Consumption:

Consumption means the process of **using goods and services** to satisfy human needs and wants.

✅ When people buy food, clothes, mobile phones, books, etc., and use them, this is called **consumption**.

Example:

- Eating rice 🍚
- Using a smartphone 📱
- Wearing shoes 👞

👉 **In simple words:**
Consumption = Using things to make life better or to fulfill needs.

2. Determinants of Consumption:

These are the main factors that **influence or affect how much people consume**:

a) Income of the Consumer:

- The **higher the income**, the **more the person can buy and consume**.
- Poor people consume less because their income is limited.

✔️ **Example:**
If your salary increases, you may buy a new dress or a better phone.

b) Propensity to Consume (MPC - Marginal Propensity to Consume):

- This is the tendency of a person to spend **extra money when their income increases**.
- Some people prefer to **save more** and spend less, while others spend most of their income.

✔ **Example:**
If someone earns an extra 1000 Taka but spends 800 Taka, their propensity to consume is high.

c) Wealth:

- A person who already has a lot of **assets or property (like land, gold, savings)** may feel richer and spend more.

✔ **Example:**
A rich landlord may buy a new car easily without worrying about monthly income.

d) Interest Rate:

- If **interest rates are high**, people may **save more** instead of spending because they can earn more from savings.
- If interest rates are **low**, people may **borrow and spend more**.

✔ **Example:**
If banks offer 10% interest on savings, people will save; if only 2%, they may spend the money instead.

e) Expectations about Future:

- If people think they will earn more in the future, they may spend more now.
- If they fear losing their job or income, they will spend less and save more.

✔ **Example:**
During a recession (economic problem time), people reduce their consumption because they fear losing income.

f) Consumer Credit Facility:

- If banks or shops offer **easy loans or installment plans**, people tend to buy more.

✔ **Example:**
Buying a TV on EMI (monthly payment system) increases consumption.

g) Distribution of Income:

- If income is **equally distributed** in society, overall consumption will be higher because poor people will also have money to spend.
- If income is **unequal**, rich people may save more instead of spending, leading to lower total consumption.

h) Social and Cultural Factors:

- People sometimes spend because of **tradition, festivals, or social status**.

✔ **Example:**
In Bangladesh, during **Eid festivals**, people consume more clothes, food, and gifts.

i) Government Policies:

- Government taxes, subsidies, and welfare schemes also affect consumption.

✔ **Example:**
If the government gives **cash allowances** to poor people, they will spend more on food and clothes.

Summary in Short:

Determinants of Consumption	Explanation
1. Income	More income = More consumption
2. Propensity to Consume	Tendency to spend extra income
3. Wealth	More wealth = More spending confidence
4. Interest Rate	High rate = More saving, Low rate = More spending
5. Expectations	Positive future = More spending now
6. Credit Facility	Easy loan = More consumption
7. Income Distribution	Equal distribution = Higher consumption
8. Social/Cultural Factors	Festivals/traditions increase spending
9. Government Policy	Tax relief, subsidies affect consumption

**b) The importance of consumption can be observed in every branch of economics. Justify the statement.

Importance of Consumption in Every Branch of Economics

1. Consumption and Microeconomics:

- Microeconomics studies the behavior of **individual consumers and firms**.
- Consumption decisions of individuals **determine demand** for goods and services.
- Firms produce goods based on this demand.
- **Example:** If people consume more tea, tea sellers will produce and sell more.

2. Consumption and Macroeconomics:

- Macroeconomics looks at the economy as a whole.
- Consumption is a **major part of a country's total economic activity (GDP)**.
- Changes in consumption affect **national income, economic growth, inflation, and employment**.
- If people consume more, production increases, leading to economic growth.
- **Example:** During festivals, increased consumption boosts the entire economy.

3. Consumption and Economic Development:

- In developing countries, consumption patterns **show improvement in living standards**.
- More consumption of essential goods (food, clothes, healthcare) means better quality of life.
- Consumption also drives demand for better infrastructure and services.

4. Consumption and Public Finance:

- Government earns revenue through taxes on consumption (like VAT, sales tax).
- Consumption influences **government policy decisions** about taxation and subsidies.
- Increased consumption means more tax revenue for public services.

5. Consumption and International Trade:

- Consumption preferences affect what goods a country imports or exports.

- A country consumes goods that are not produced domestically, which shapes trade patterns.
- **Example:** Bangladesh imports electronics because local consumption demand is high.

6. Consumption and Environmental Economics:

- Consumption patterns affect natural resource use and environmental impact.
- High consumption can lead to resource depletion and pollution.
- Understanding consumption helps design policies for **sustainable development**.

*__**SO JAIGAI SUMMARY EASY HOBAR JONNO RAKSI .JUST FOR REVISION**__*

Summary:

Branch of Economics	**Role of Consumption**
Microeconomics	Determines demand and production decisions
Macroeconomics	Drives GDP, growth, employment, and inflation
Economic Development	Indicates living standards and development progress
Public Finance	Source of tax revenue and influences fiscal policy
International Trade	Affects import-export balance based on consumption needs
Environmental Economics	Influences resource use and sustainability policies

###**Question 4**###

**a) Define localization. Briefly explain the causes of localization.

Definition of Localization:

Localization means the tendency of economic activities or industries to **concentrate in a particular area or region** rather than spreading out evenly.

👉 In other words, many factories, businesses, or services gather together in one place because it becomes more efficient or profitable.

Causes of Localization:

1. Economies of Scale:

- When many similar businesses are located together, they **share resources, reduce costs, and increase efficiency**.
- For example, nearby industries can share transportation, suppliers, or workers.

2. Availability of Raw Materials:

- Industries often locate near the source of raw materials to reduce transportation costs.
- **Example:** A sugar mill near sugarcane farms.

3. Market Proximity:

- Businesses locate near large markets where many consumers are, to save delivery time and cost.
- **Example:** Shops and factories near big cities.

4. Labor Supply:

- Areas with a large supply of skilled or cheap labor attract industries.
- For example, textile factories locate where many trained workers are available.

5. Transport and Communication Facilities:

- Good roads, ports, railways, and communication help industries to operate smoothly.
- Industrial areas develop where such facilities are better.

6. Government Policies:

- Sometimes, governments create special zones or provide incentives in certain areas to encourage industries.
- This causes localization in those regions.

7. Social and Cultural Factors:

- People tend to locate businesses where their community or culture is strong, helping cooperation and trust.
- Also, availability of social amenities attracts people and industries.

Summary Table:

Cause	Explanation
Economies of Scale	Sharing resources reduces cost
Availability of Raw Materials	Nearness to raw materials reduces transport cost
Market Proximity	Close to customers to reduce delivery time
Labor Supply	Access to skilled or cheap workers
Transport & Communication	Better infrastructure attracts industries
Government Policies	Incentives or special zones encourage clustering
Social & Cultural Factors	Community and amenities attract businesses

**b) Explain the consequences of localization.

Consequences of Localization

When industries or economic activities concentrate in one area (localization), it leads to both **positive** and **negative** effects:

1. Positive Consequences:

a) Economic Growth and Development:

- Concentration of industries creates job opportunities for local people.
- It boosts income and improves the standard of living in that region.

b) Better Infrastructure:

- Localization encourages development of roads, transport, electricity, and communication in that area.
- This benefits both industries and local people.

c) Specialization and Efficiency:

- Industries in one area can specialize in certain products, improving quality and reducing costs.

- Sharing resources like suppliers and workers leads to higher efficiency.

d) Creation of Markets:

- Concentrated industries create a large local market for goods and services.
- This supports related businesses like shops, banks, and services.

2. Negative Consequences:

a) Regional Imbalance:

- Localization leads to economic development in certain regions but leaves other areas underdeveloped.
- This causes inequality between regions.

b) Overcrowding and Pollution:

- Concentrated industries cause overcrowding, traffic congestion, and strain on housing.
- Pollution from factories affects air, water, and soil quality.

c) Increase in Land and Labor Costs:

- High demand for land and workers in localized areas increases their prices.
- This can raise production costs.

d) Risk of Economic Dependency:

- If too many industries depend on one area, any problem (like natural disaster) can disrupt the entire regional economy.

Summary Table:

Positive Consequences	**Negative Consequences**
Economic growth and employment	Regional imbalance and unequal development
Improved infrastructure and facilities	Overcrowding, traffic, and pollution
Higher specialization and efficiency	Increased land and labor costs

Positive Consequences	Negative Consequences
Creation of strong local markets	Risk of dependency and vulnerability

###**Question 5**###

**a) What are economies of scale? Explain the effects of economies of scale on production costs.

What are Economies of Scale?

Economies of Scale refer to the **cost advantages that a business gains as it increases its production size**. In other words, when a company produces more goods, the **cost per unit (cost of making one product) goes down**.

Why does this happen?

- Bigger production means the business can **buy raw materials in bulk** at cheaper prices.
- They can use **special machines and technology** that work more efficiently.
- The **fixed costs** (like rent, machinery) are spread over many products.
- They can hire **specialized workers** and improve management.

Types of Economies of Scale:

1. **Internal Economies of Scale:**
   Cost savings from **within the company** (better machines, management, bulk buying).
2. **External Economies of Scale:**
   Cost benefits from the **growth of the entire industry or area**, like better infrastructure, supplier networks.

Effects of Economies of Scale on Production Costs:

Effect	Explanation
Reduction in Average Cost	As production increases, the cost to make each unit decreases. This means products become cheaper to produce.
Increased Efficiency	With more resources and better technology, production becomes faster and uses fewer resources.
Competitive Advantage	Lower costs allow the company to sell products at lower prices or earn higher profits.
Ability to Invest and Grow	Savings on costs can be used to invest in new technology, research, or expand production.

Example:

- A factory making 100 toys might spend 5000 Taka in total, so the cost per toy is 50 Taka.
- If the factory makes 1000 toys, the total cost might increase to 30,000 Taka, but the cost per toy becomes only 30 Taka.
- The cost per toy **decreases as production increases** — this is economies of scale.

**b) Briefly explain the diseconomies of scale.

Diseconomies of Scale

When a company or industry grows beyond an optimal size, the **cost per unit of output increases instead of decreasing**. This is called **Diseconomies of Scale**.

It means the firm becomes **less efficient and more expensive to operate** as it becomes too large.

Causes of Diseconomies of Scale:

1. Management Problems:

- In very large firms, it becomes difficult for managers to supervise and control all departments.
- Communication problems arise, causing delays and mistakes.

- Decision-making slows down due to many layers of management.

2. Labor Problems:

- Workers may feel **alienated or less motivated** in big organizations.
- Lack of personal attention can lead to poor discipline and lower productivity.
- Increased chances of labor disputes or strikes.

3. Coordination Difficulties:

- More complex operations require better coordination.
- Lack of coordination causes inefficiency and waste.

4. Overcrowding of Resources:

- Too many machines or workers in a limited space can lead to congestion.
- This slows down production and increases costs.

5. Higher Bureaucracy:

- Large firms often have many rules, procedures, and paperwork.
- This bureaucratic system can slow down work and increase administrative costs.

6. Motivation and Communication Breakdown:

- Personal relationships break down in large firms.
- Workers may feel less responsible for the final product.

Effects of Diseconomies of Scale:

- Increase in **average cost per unit**.
- Decrease in **profit margins**.
- Reduced **competitiveness** in the market.
- Possible loss of market share to more efficient smaller firms.

Example:

- A factory producing 10,000 items efficiently grows to 100,000 items but starts facing delays, communication problems, and employee dissatisfaction.

- Instead of costs falling, the cost per item goes up because of these inefficiencies.

In simple words:

When a company grows too big, it can become harder to manage, workers may become less motivated, and operations get complicated. Because of these problems, the cost to make each product **starts increasing** instead of decreasing. This problem is called **Diseconomies of Scale**.

**c) Briefly explain the internal and external economies of scale.

🔍 **1. Internal Economies of Scale (Within the Firm)**

These are the **benefits that a single firm enjoys** when it grows larger. It can reduce its **average cost per unit** because of improvements happening inside the firm itself.

Types of Internal Economies of Scale:

Type	Explanation	Example
Technical Economies	Big firms can use **modern machines and technology** to produce more efficiently.	A large textile mill uses automatic sewing machines.
Managerial Economies	Large firms can hire **specialized managers** for different departments.	A big company has separate HR, Finance, and Production managers.
Financial Economies	Big firms can get **loans at lower interest rates** because they are more trusted by banks.	A large corporation borrows at 6% interest, small firms at 10%.
Marketing Economies	Large firms can **buy raw materials in bulk** at a discount and spend less on advertising per unit.	Buying 1000 tons of steel is cheaper per ton than buying 100 tons.
Labor Economies	Large firms can hire **skilled and experienced workers**, leading to higher productivity.	A big software firm hires expert programmers.

🔍 2. External Economies of Scale (Outside the Firm)

These are the benefits that a firm gets because of the **growth of the entire industry or region**, not just their own growth.

Types of External Economies of Scale:

Type	Explanation	Example
Economies of Concentration	When many firms of the same industry are located in one area, they share resources.	Garment industries in Dhaka benefit from nearby cloth suppliers.
Economies of Information	Research centers, universities, or government agencies share new information or technology useful to all firms.	Tech companies in Silicon Valley share latest innovations.
Economies of Disintegration	Specialized supporting industries (like packaging, transport) develop nearby.	Car companies in Japan have nearby suppliers for tires, glass, etc.
Improvement in Infrastructure	When the industry grows, the government improves roads, power supply, etc.	An industrial zone gets a new highway or power plant.

✅ Key Differences Between Internal and External Economies:

Points	Internal Economies	External Economies
Origin	Inside the firm	Outside the firm (industry-wide)
Control	Under the firm's control	Not directly under the firm's control
Examples	Use of modern machines, expert managers	Skilled labor pool, improved infrastructure

###**Question 6**###

**a) Briefly explain the theory of production with examples.

🌾 **Theory of Production:**

The **Theory of Production** explains how a firm **converts inputs (resources)** like land, labor, capital, and entrepreneurship into **outputs (goods or services)**.

In simple words:

It tells us **how products are made by using different resources efficiently** to get the maximum output.

🔍 **Key Elements of Production:**

1. **Inputs (Factors of Production):**
    - **Land** (natural resources)
    - **Labor** (human effort)
    - **Capital** (machines, tools, money)
    - **Entrepreneurship** (the person who organizes these resources)
2. **Outputs:**
    - Goods and services produced by using inputs.

🔄 **Production Function:**

The production process can be written as:

$Q=f(L,K,N)$ $Q = f(L, K, N)$

Where:

- **Q = Quantity of output**
- **L = Labor used**

- **K = Capital used**
- **N = Land used**

This shows that output depends on how much labor, capital, and land is used.

🎯 **Two Main Laws Under Theory of Production:**

1. Law of Variable Proportion (Short-Run):

- When you increase only one input (like labor) while keeping others (like land, machines) fixed, the extra output you get will **first increase**, then **decrease**.

✔️ **Example:**
In a small shop with 1 sewing machine (fixed), adding more workers will at first increase production, but after some point, the machine becomes overcrowded and extra workers will reduce efficiency.

2. Law of Returns to Scale (Long-Run):

- When you increase **all inputs together** (labor, land, capital), the total output may increase at a **faster, slower, or equal rate**.

✔️ **Example:**
If a factory doubles its machines, workers, and raw materials, the output may:

- **More than double** (Increasing returns to scale)
- **Exactly double** (Constant returns to scale)
- **Less than double** (Decreasing returns to scale)

✅ **Example of Production:**

✔️ **Bakery Example:**

- **Inputs:** Flour, sugar, oven (capital), baker (labor), shop space (land).
- **Process:** Baker mixes flour and sugar, bakes cakes in the oven.
- **Output:** Fresh cakes ready for sale.

Summary:

Concept	Explanation
Theory of Production	How inputs are converted into outputs efficiently.
Inputs	Land, Labor, Capital, Entrepreneurship.
Outputs	Goods or services produced.
Laws	Law of Variable Proportion, Law of Returns to Scale.

**b) Explain total product, marginal product and average product of labour with examples.

🌾 **1. Total Product (TP):**

➡️ **Definition:**

Total Product refers to the **total quantity of output produced** by employing a given number of labor units, keeping other inputs constant (like land, machines).

✔️ **Example:**

If a farmer employs:

- 1 worker → Produces 5 kg rice
- 2 workers → Produces 15 kg rice
- 3 workers → Produces 25 kg rice

Then the Total Product for:

- 1 worker = **5 kg**
- 2 workers = **15 kg**
- 3 workers = **25 kg**

👉 **Total Product keeps adding up as more labor is used.**

🔍 2. Marginal Product (MP):

➡️ Definition:

Marginal Product means the **extra output produced when one more unit of labor is added**.

✔️ Formula:

$MP = TP_n - TP_{n-1}$

Where:

- TP_n = Total Product at **current labor**
- TP_{n-1} = Total Product at **previous labor**

✔️ Example from above:

- When going from 1 to 2 workers:

$MP = 15 - 5 = 10 \text{ kg rice}$

- When going from 2 to 3 workers:

$MP = 25 - 15 = 10 \text{ kg rice}$

👉 At first, MP rises, then falls as more labor is used.

📊 3. Average Product (AP):

➡️ Definition:

Average Product means the **output produced per unit of labor**.

✔️ Formula:

$AP = \frac{TP}{L}$

Where:

- **TP = Total Product**
- **L = Number of workers**

✔️ Example:

For 3 workers producing 25 kg rice:

$AP = \frac{25}{3} = 8.33 \, \text{kg per worker}$

👉 **AP first increases, then decreases after a point as labor increases.**

🎯 **Numerical Table Example:**

Number of Workers (L)	Total Product (TP)	Marginal Product (MP)	Average Product (AP)
1	5	5	5.00
2	15	10	7.50
3	25	10	8.33
4	30	5	7.50
5	32	2	6.40

📝 **Important Notes:**

1. **At First:**
    - **MP increases** because adding workers makes production more efficient.
2. **Then:**
    - **MP starts to fall** when too many workers are added (due to limited machines/space) — this is called **diminishing returns**.
3. **When MP is zero or negative:**
    - Adding more labor **reduces total output** (overcrowding problem).

🎨 **Diagram Description (Optional for Exam):**

- **X-axis:** Labor Units (L)
- **Y-axis:** Output (TP, MP, AP)
- **TP Curve:** Rises, then flattens.
- **MP Curve:** Rises, peaks, then falls (may become negative).

- **AP Curve:** Rises, peaks after MP peak, then falls.

**c) How the law of diminishing returns works?

🌾 **Law of Diminishing Returns (also called the Law of Variable Proportions)**

Definition:

The **Law of Diminishing Returns** states that:

If one input (like labor) is increased while keeping other inputs (like land or machines) fixed, there will come a point when the extra output (Marginal Product) from each new unit of the variable input will start to decrease.

🔍 **How it Works (Step by Step):**

1. Increasing Returns Stage:

- At first, when you add more labor to fixed land/machines, production increases **rapidly**.
- Workers can help each other, divide tasks, and work more efficiently.

✔️ **Example:**
Adding the second or third worker to a small farm increases output greatly.

2. Diminishing Returns Stage:

- After a certain point, adding more workers leads to **smaller increases in output** because there is **not enough land, machines, or tools** for everyone to work efficiently.

✔️ **Example:**
A 4th or 5th worker in a small kitchen cannot cook faster because the space is limited.

3. Negative Returns Stage:

- If you keep adding too many workers, **total output may even decrease** because of overcrowding, confusion, and disturbances.

✔️ **Example:**
10 workers trying to bake in a tiny kitchen may reduce production because they get in each other's way.

🎯 **Real-Life Example: Farming**

- A farmer has 1 acre of land (fixed).
- He hires workers one by one:

Number of Workers	Total Product (TP)	Marginal Product (MP)
1	5 kg	5 kg
2	15 kg	10 kg
3	25 kg	10 kg
4	30 kg	5 kg
5	32 kg	2 kg

👉 Notice that **MP is falling after the 3rd worker**, showing diminishing returns.

✅ **Why Does This Happen?**

- **Fixed factors** (like land or machines) cannot be increased easily.
- More labor has to **share the same limited resources**.
- After a point, workers cannot be fully productive.