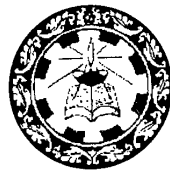


G. C. E. (Advance Level)

Economics

Grade 12

Teachers' Instructional Manual



**Department of Business Studies
Faculty of Science Technology
National Institute of Education
Maharagama.**

Economics

Grade12 - Teacher Instructional Manual

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**LEARNING OUTCOMES
AND
MODEL ACTIVITIES**

Competency 1 : Analyses ways of solving the key economic problem in an economic system

Competency Level 1.1 : Confirms that Economics is as a Social Science

Number of Periods : 05

Learning Outcomes :

- Develops a definition to Economics by comparatively studying the various definitions
- Reasons out to confirm Economics is as a science
- Confirms Economics as a social science by indicating how social sciences differ from natural sciences
- Discuss with examples how to find solutions for various problems by means of economic thinking

Guidelines for the explanation of subject matter:

- Various definitions to Economics have been presented by economists.
- Some definitions describe the scope of Economics whereas some definitions describe the methodology of Economics.
- Economics studies how people behave in an Economic way in society, and the methodology used.
- The Economics is a social science since it studies the economic behavior of the people in society
- Economics is considered a science because Economic theories and principles are based on scientific methods
- Economics differs from the natural sciences for the following factors
 - The theory of Economics examines the behaviour of people in the context of Economics.
 - Theories of Economics cannot be proved inside laboratories.
 - Theories of Economics change in terms of factors such as: time ,region and ethnic group.
- The way of thinking according to Economics is making decisions logically by comparing the marginal benefits and marginal cost.
- Economics is important for groups to take logical decisions
 - To producers • To votes
 - To employees • To employers.
 - To consumers
 - To government administrators

Competency Level 1.2 : Uses the theories and application of economics for decision making.

Number of Periods : 05

Learning outcomes :

- Explains micro and macro economics fields with examples
- Explains the differences between positive and normative statements through examples
- Confirms that, models ,hypothesis and theories are used as a methodology to analyze economic phenomena

Learning -Teaching Process:

Engagement

- Present the newspaper item below, to the class.

“Mr. Siripala, a tea planter in the Nuwaraeliya district says that, his tea harvest has increased by 25 % in this year, but the Central Bank Report of Sri Lanka indicates, tea production has increased by 5% this year compared to the previous year”.
- Inquire from students, about ideas related to the statement above.
- Conduct a discussion highlighting factors mentioned below.
 - Mr.Siripala as one individual among the tea producers.
 - Therefore, Mr.Siripala is one small unit in the economy.
 - The Central Bank report expresses the aggregate tea production of the country.
 - In this way Economics is the study of individual variables and aggregate variables.
 - Accordingly the study of only individual units in an economy in this way is called Micro economics.
 - Further, the study of an economy taken as a whole (aggregate level) is called Macroeconomics
- Group the students and get them involved in the activity on the proposed instructions for learning.

Paddy production

The price of rice increased rapidly during the last few years. The reason for this is the increase in the cost of production. Therefore, the government decided to provide fertilizer and seeds to the farmer as subsidies. In this way, the government expected to increase paddy production.

Under the paddy production scheme, the government expected to obtain a paddy production of 10,000 metric tons, 1,000 metric tons of fertilizer and seeds 1,000 metric tons for paddy production, on the assumption that all the paddy land in the country will be cultivated. But last year due to floods, cyclone and uncultivated paddy land the total paddy production decreased by 2,000 Metric tons. As such the actual situation of the paddy production was 8,000 Metric tons.

Due to the decrease paddy cultivation there was a decrease in paddy production.

Milk Production

The price of the imported milk powder was increased due to the increase in the price of the milk powder in the world market during the past. As a result of this, Government expected to limit the amount of imported milk powder and increase domestic milk production. In order to achieve the above objective, the government decided to provide milk cows and the necessary instruments for dairy farmers free of charge

The government expected a milk production of 500,000 liters by providing 50,000 cows and instruments, to dairy farmers, assuming that around 50,000 domestic dairy farmers in the country will be involved in this project.

But this year, the total milk production increased by 550,000 liters since additional 5,000 milk farmers were involved in milk production than the expected amount. The prices of the milk powder has gone down due to the increase in the domestic milk supply. As a result of this, the demand for domestic milk powder increased.

Proposed Instructions for Learning

- Focus on the production given you to on the two production mentioned below.
 - Paddy production
 - Milk production
- Study the case given to you properly.
- Show the input and output relationship of the relevant case by chart.
- What are the assumptions that case is based on?
- Indicate the existing relationship between the price of the good and the quantity demanded pertaining to your topic
- What are the expected outcomes of the relevant incident?
- Explain, what actually happened within the market.
- Prepare creatively and present your findings to the whole class

Guidelines for the explanation of subject matter:

- Positively analyze what is existing in the real world? , what is happening?, what is known as a positive statement.
- Positive statements have been analyzed based on various economic theories
- Express subjectively, what should exist in society?, What should happen? is called normative statements
- Various economic policies have been expressed in terms of normative statements
- Models are used as a methodology to simplify complex phenomena happening in the real world

Examples: input output relationship indicated by a chart

- In the process of developing models ,conditions are used as assumptions to present complex events simply and certainly.

Examples: Assume that only seeds and fertilizer affect increase in paddy production

- A theory is a scientific analysis which explains an existing real world phenomenon

Examples

- When price increases quantity demand decreases
- When price decreases quantity demand increases

Competency Level 1.3 : Demonstrates human needs and wants are satisfied by consumption of goods and services.

Number of periods : 06

Learning outcomes :

- Explains the differences between human needs and wants with examples.
- Lists out the various methods of fulfilling wants the human needs.
- Categorizes Goods and services as economic goods and free goods (non economic goods).
- Explains the differences between economic goods and free goods with examples.
- Point out, how free goods (non economic goods) become economic goods.

Learning Teaching Process:

Engagement:

- Write down on the board, the things needed to maintain human life by inquiring from the students.
- Considering the responses of students ,make a list while categorizing them as needs and wants.
- Explain the differences between needs and wants by providing examples.
- Divide the students into groups and provide the proposed learning instructions.

Proposed Instructions for Learning

- The following two categories of goods satisfy human needs out of them focus on the category of goods you have received.
 - Sunlight, air, rain water and breeze
 - Books, chocolates, buns and shoes
- Lists out the uses of goods you have received.
- How do you obtain each of these goods ?
- What types of your needs are satisfied by using these goods?
- Make an alternative list of goods and services which can be used to satisfy those needs.
- Point out the group of goods that differ from the ones you received the other group.
- Present your findings to class.

Guidelines for the explanation of subject matter:

- Explain the differences between needs and wants by giving examples.
- Conduct a discussion by highlighting the following factors.
- Food, clothes , houses ,education and health are the basic human needs.
- Various ways used to satisfy the basic needs are known as wants.
- Needs are limited and wants are unlimited.
- Needs are common and wants vary from person to person.
- Needs are biological and wants are related to social and cultural factors.
- As mentioned below ,there are two types of goods which can satisfy human needs.
 - Free goods (non economic goods)
 - Economic goods
- The following characteristics could be highlighted in non economics goods
 - There are no cost of resources and opportunity cost
 - Unlimited receipt from nature under zero price
- The following characteristics could be found in economic goods
 - Cost of resources and opportunity cost exist.
 - Produced by the man combining productions factors.
- Even if a non economic good is obtained by incurring factor cost, it becomes an economic good.

Competency Level 1.4: Classifies resources used to produce goods and services

Number of periods : 06

Learning outcomes :

- Present examples classifying resources as renewable and non renewable
- Classify the characteristics of the factors of production, which are used to produce goods and services

Learning Teaching Process:

Engagement

- Inquire from the students about the thing mentioned used for production in relation to a bakery.
- Natural resources
- Human Resources
- Man made resources
- Conducts a discussion highlighting the factors mentioned below.
- As natural resources, firewood and water are needed to produce bread
- As human resource; flour mixture's labour of the bakers are used for the production of bread
- As man made resources; bakery and the other instruments used for the production of bread
- Effective decisions are taken by the owner of the bakery by combining all these factors
- Accordingly, natural resources, human resources, man made resources and combination of factors of productions are needed to produce a good
- Divide the students into group and provide the proposed learning instructions.

Proposed Instructions for Learning

- Focus on the production opportunity received by your group among the opportunities given below :
 - Brick production
 - Mat production
 - Herbal Kanji production
- List out as natural resources, human resource, man made resources which can be used for the production opportunity relevant to you.
- Point out the parties involved in the decision making and risk taking in the production process
- Indicate separately the characteristics of the natural resources, human resources, and man made resources which are used for production process.
- Point out the importance of decision making and risk taking in the production process

Include the above resources in the table below.

Resources	Economic Resources	Non economic Resources	Renewable Resource	Non Renewable Resources

- Prepare and creatively present your findings to the class.

Guidelines for the explanation of subject matter:

- All inputs used for the production process are considered as resources.
- Scarce resources used to produce goods and services incurring costs are known as economic resources.
- The resources used to produce goods and services, freely available in nature, which do not incur opportunity cost and scarcity are called non economic resources.

- Factors of production can be categorized mainly into four, as given below
 - Land
 - Labor
 - Capital
 - Entrepreneurship
- All the resources gifted by nature, which can be used for production and have productivity are called land.
- A few characteristics of this can be summarized as follows;
 - It is a natural resource
 - Supply is inelastic
 - Limitations of mobility present
 - Productivity can be increased
 - Payment for land is rent.
- Physical and mental effort used for the production of goods and services are called labour
- A few characteristics of labor are mentioned below
 - Live factor of production
 - Movable
 - Heterogeneous
 - Labor productivity could be developed
 - Labor cannot be separated from the laborer
 - Wage is the payment for labor
 - The number of labor hours employed during a certain period for the production of goods and services are called supply of labor
- Labor supply is determined by the factors mentioned below
 - Labor force
 - Number of working hours
 - Wage level

- Human creations used in the production of goods and services are known as capital
 - A few characteristic of capital are mentioned below
 - Human created factor
 - Exists to ensure productivity
 - Repetitively used for production.
 - Depreciation a necessary factor
 - Payment for the capital is known as interest
- Capital can be categorize in the following way
 - Fixed /real capital
 - Circulation capital / working capital
 - Economic overhead capital
 - Natural capital
 - Social capital
- There is a relationship between the savings .investment and **capital stock**
- The process of taking production decisions, organizing production activities and monitoring while bearing a risk is known as entrepreneurship
- The role performed by an entrepreneur can be summarized as follows,
 - Taking policy decisions
 - Organizing production activities
 - Monitoring production activities
 - Innovations
 - Bearing risks
- The following characteristics exist in entrepreneurship
 - Human factor
 - Initiative ness
 - Leadership qualities
 - Ability to face challenges effectively
 - Futuristic
 - Self confidence
 - Can be trained

Competency level 1.5: Makes rational decisions to fulfill satisfy unlimited wants with limited resources alternative uses

Number of periods : 06

Learning outcomes :

- Defines the concept of scarcity while providing reasons for it
- Describes selection by considering alternative uses of resources.
- Analyzes the concept of opportunity cost using examples

Learning -Teaching Process:

Engagement:

- Select two students to present the dialogue given below

Son : “Mother my pair of shoes is badly damaged, please buy me a pair of shoes

Mother: “Lets see, aha, this can be used a few more days by mending. then the amount of money with me is also not sufficient for the next week and there is one week for dad’s salary

Son : The straps of my school bag are also loose, so it is difficult to carry books in it. At th same time my Mathematics book is also over now

Mother: The book is essential; therefore we will buy a book. Try to buy a bag next month.

- Inquire from the students; the facts that emerge from the dialogue
- Conduct a discussion by highlighting the facts mentioned below.
- Resources are limited and wants are unlimited
- Therefore, each and every person faces the problem of scarcity
- Scarcity is the comparative inadequacy of the resource availability in society
- Trying to satisfy our unlimited wants is a central problem in every society.
- Make the students engage in the activity by appropriately grouping and providing the proposed learning instructions.

Proposed instructions for learning

- Focus your attention on the resource you have received from the resources given below:
 - Bank deposited money
 - Piece of land of an acre
 - A building close to the main city
- Identify the main characteristics of the resource you have received. Lists out its alternative uses
- Arrange them in order while considering their alternative uses
- Out of above, present the best alternative opportunity that your group has selected
- Due to selection of this, point out the next best alternative opportunity that you have given up

Guidelines for the explanation of subject matter:

- Resources are limited and they have alternative uses
- Since scarce resources have alternative uses, there is need to choose one alternative.
- When a choice is made from among the alternatives the cost of next best alternative is identified as the opportunity cost
- Opportunity cost is a real concept (Explain with examples)

Competency Level 1.6: Presents different opportunity costs scenarios by using the Production Possibility Frontier.

Number of periods : 06

Learning Outcomes :

- Defines production possibility boundary.
- Indicates the factors that determine production possibility in an economy.
- Creates production possibility curves on constant and increasing opportunity costs.
- Explains the behavior of opportunity cost by using the production possibility boundary.
- Presents the factors affecting constant and increasing opportunity costs.
- Confirms that increasing opportunity cost is more reliable.

Learning –Teaching process:

Engagement

- Provide writing paper/ A4 photo copy paper to the class (Length 30cm Width21 cm)
- Ask them how many 1 cm squares could be cut from the paper.
- Inquire as to how many rectangles length 2cm, width 1cm could be cut from the paper.
- Inquire as to how many squares are forgone in the process of increasing one rectangle
- Conduct a discussion highlighting the factors mentioned below.
- From the given paper 630 squares of 1 cm by 1 cm or 2cm by 1cm could be cut.
- When increasing the number of rectangles, how many alternative are forgone?
- According to the above activity, when increasing the production of one good with the existing resources the production of the other good has to be sacrificed.
- Economic resources can be used to produce alternative output combinations. A production possibility frontier could be presented through a graph which produces two goods by assuming that all the resources in the economy are fully and efficiently employed.
- Divide the students into groups and provide them with the proposed learning instructions..

Proposed instructions for Learning

- Focus your attention on the production institution received by your group from the following institutions.

Institute of Ayesha Text

Ayesha Text Institute had a limited amount of resource such as: land, labor and capital .In a given situation they planned to produce shirts and trousers employing the above resources fully with maximum efficiency. If he employs all the available resources on shirt production he can produce only 50 shirts. If he shifts resources employed for shirt production to trouser production by reducing 10 units of shirts, 5 units of trousers can be increased. If all resources are employed for trouser production, 25 trousers could be produced

Institute of Vajirara Enterprise

Vajira produces either rice or cloth by employing a certain amount of available limited resources. He can produce only 45 units of clothes in a given situation by using the existing technology and employing the available resources fully with maximum efficiency. When increasing rice production by one unit cloth production should be reduced by 2, 3, 10, 14 and 16 respectively. When the cloth production is zero the maximum rice production is 05 units.

- Study the information with great care from the production received by you
- Prepare a table with the combination of the production of two goods through the above information
- Indicate in the chart itself the amount of units forgone in one production when one unit of the other product is increased.
- Using the above table, create a graph indicating the alternative combinations of the two goods
- Express your view on the shape of the graph
- Explain the nature of the opportunity cost by using the table and the graph developed by you.
- Prepare and creatively present your findings to the whole class.

Guidelines for the explanation of subject matter:

- Limitations exist on the maximum production possibility of limited resources in a given situation.
- Resources have alternative uses.
- The line drawn on combining the maximum combinations of outputs using the existing stock of resources fully utilizing with maximum efficiency is known as the production possibility frontier.
- The Production possibility frontier is identified by alternative names as: Production possibility line.
- Production possibility curve is developed using the assumptions mentioned below.
 - Produce only two goods
 - Stock of resources is fixed
 - Existing technology does not change in the given period of time
 - Resources are fully utilized with maximum efficiency
- The factors mentioned below determine the production possibility in a country
 - Stock of resources
 - Productivity of the resources
- Slope or the gradient of a production possibility curve can be identified as the ratio of movement along the production possibility curve, the forgone amount of the other goods when a fixed amount of a certain good increases.
- According to the behavior of the gradient of the production possibility curve or marginal opportunity cost, the production possibility curve exists in three shapes as given below.
 - Straight line
 - Concave to the origin
- When moving along the production possibility curve by increasing the fixed amount of a certain good the amount forgone from the other good is considered as the constant production possibility curve.

- Due to following reasons the opportunity cost becomes constant
 - Homogeneous Resources
 - Resources efficient for one industry and is the same for the other industry also
 - The production possibility curve that is concave to the origin is the increasing opportunity cost
 - If the forgone amount of the other good increases while increasing a fixed amount from a certain good when moving along a production possibility curve, is known as increasing opportunity cost
- The reasons mentioned below affect increase opportunity cost
 - Resources are non homogeneous
 - The resources efficient for one industry are not efficient for the other Industry in the same way.

Competency Level 1.7 Uses Production Possibility Curve to present usage of resources in an economy

Number of periods : 06

Learning Outcomes:

- Explains scarcity, utilization of resources fully, efficiently utilization of resources, under utilization, inefficient utilization of resources using the Production Possibility Curve.
- Explains the reasons for the shifting of the production possibility curve to the right side.
- Explains the reasons for the shifting of the production possibility curve to the left side.
- Defines the productivity of the factors of production
- Measures the productivity of the factors of production using numerical data

Guidelines for the explanation of subject matter

- When there is full and efficient utilization of resources production combination lies on the boundary of the Production Possibility Curve.
- When there is under and inefficient utilization of resources, production combination lies on the left side of the Production Possibility Curve.
- Scarcity can be shown by a point on the right hand side of the Production Possibility Curve.
- The point which moves from the left side to the Production Possibility Curve, can increase production of both goods without opportunity cost
- The point which moves from the Production Possibility Curve to the left, shows decrease utilization of resources and efficiently.
- Production Possibility Curve can be shifted to the right due to the increase in capacity of production
- The factors of increase in capacity of production are given below.
 - Increase in factor endowments.
 - Increase in productivity.
- Production Possibility Curve can be shifted to left side due to the decrease in the capacity of production

- The factors of decrease in capacity of production are given below.
 - Decrease in factor endowments.
 - Decrease in productivity.
- Outputs received from the inputs are known as normal productivity
- The following factors affect determination of productivity of the factors of production
 - Technology
 - Management
 - Human Capital
 - Division of labor and specialization
 - Factor productivity can be computed as follows :

$$\mathbf{Factors\ Productivity = Outputs / Inputs}$$

- Productivity of the various factors of production can be computed as follows:

$$\mathbf{Productivity\ of\ Land = Total\ output / Amount\ of\ land\ units}$$

Competency Level 1.8: Takes efficient decisions on the allocation of resources and outputs

Number of Periods : 06

Learning Outcomes :

- Names and describes the meaning of basic economic problem.
- Arranges the factors according to the allocation of resources, production and distribution.

Learning Teaching Process:

Engagement:

- Recite the poem below to the class

" Our Land is small
So many things can be done there
Grow flowers in the garden
Built tanks to develop the country
Built houses to live in
Such a number of things to be done
But everything cannot be done as we would like
To take the things that we want
In order to take new, new things "

- Ask students how they feel about the expressions implied in the above poem.
- Conduct a discussion highlighting the factors mentioned below.
- Human wants are unlimited and the available resources are limited to satisfy them
- Scarce resources in a society can be employed for various alternative uses
- Therefore, a problem arises on the allocation of scarce resources
- This problem is common to each and every society
- Divide the students into groups and provide the proposed learning instructions.

Proposed Instructions for Learning:

- Opportunity has been given to the students of your class to produce an item of food for the annual sports meet
 - For this the class has been divided into two groups as follows
 - Group A
 - Group B
 - Past pupils' association has decided to provide Rs 5,000 per group
 - One group should produce only one of item food
 - Work on the following problems by discussing with other groups.
 - List out the items of food that could be produced from the amount of money you received
 - Decide on the items of food to be produced by discussing with the other groups.
 - How much you are going to produce of the decided item of food?
 - What are the factors to decide on the quantity of food item and the amount?
 - What is the technology you are going to use to produce that food item?
 - What are the reasons for that technology to be used?
 - What do you expect, either profit or welfare, from producing this item of food ?
 - Prepare and creatively present your findings to class?

Guidelines for the explanation of subject matter

- A society faces the following common and basic economic problems. What is produced in what quantity? – Problem on resource allocation
- How to produce? -problem on technology use
- For whom to produce? – Problem on how to distribute production
- Basic economic problems arise due to limited resources, alternative uses of resources and unlimited human wants
- Basic economic problem of What to produce in what quantity, arises due to the following reasons
 - Available resources are limited
 - Resources have alternative uses
 - Human wants are unlimited
- Two types of main technology could be identified when we find solutions to the basic economic problem of How to produce?
 - Labor intensive technology
 - Capital intensive technology

- Basic economic problem of What to produce in what quantity arises due to the following reasons
 - Available resources are limited
 - Resources have alternative uses
 - Human wants are unlimited
- Two types of main technology could be identified when we find the solution to the basic economic problem of How to produce?
 - Labor intensive technology
 - Capital intensive technology
- The basic economic problem of How to produce? arises due to the following reasons
 - Alternative combinations of factors of production
 - Change in comparative cost
 - Limited resources
- The basic economic problem, “for whom to produce?” arises due to the following reasons
 - Limitation of the quantity of goods produced
 - Change of personal purchasing power
- Even though the basic economic problems are common for all the method used to solve the problem differs from society to society

Competency Level 1.9 : Demonstrates the behavior of the main actors in an economic system.

Number of periods : 06

Learning Outcomes :

- Defines economic system and explains its elements
- Names the decision making parties in an economic system and inquires about their roles
- Explains the coordinating mechanism and its role in an economic system
- By introducing price mechanism and planning mechanism, compares their basic characteristics
- Highlights the necessity of rules and regulations for the function of an economic system.

Learning Teaching Process :

Engagement

- Present the case given below to the class
- The Police Officer in the traffic branch stopped a private bus which was running on the road
- Inquire from the students, the reasons for the bus to be stopped.
- Inquire from the students about the parties involved in the incidents
- Conduct the discussion highlighting the fact mentioned below
 - In the above incident, passengers belong to households
 - The private bus owner belongs to the business sector
 - The police officer belongs to the Government
- As such, various parties exist in an economic system as : household sector , government sector, business sector and voluntary organizations
- Divide the students into groups and provide the proposed learning instructions.

Proposed Instructions for Learning

- Pay attention on the party received to your group from the parties mentioned below in an economic system
 - Household sector
 - Government sector
 - Business sector
- Reveal the following factors by properly studying the “Apegama/Our Village” that has been provided to your group
- Conduct a group discussion in order to identify the characters pertaining to the relevant parties of your group
- Explain the economic activities pertaining to the character
- Highlight the economic problems they face
- Identify the existing interrelationships between the relevant party and the other parties
- Present the traditions and the rules developed in order to make these relationships meaningful
- Prepare and creatively present your findings to the class.

Our Village

There are 200 families living in Udagama village and all of them buy their necessities from Charlis Mudalali's Soldora Kade. A large portion of goods are purchased by Mr. Frenando who works in the Regional Secretariat Office, Mr. Silva, a teacher and Mr. Piyasena a farmer. More than half of the money of the villagers flows to Mr. Charlis Mudalali's Soldorakade and he invests this money to start a new business.

Mr. Charlis Mudalali who employed six (06) women to grind chilies and curry powders and sold at the beginning, recently installed a sophisticated electric mill to grind chilies

Mr. Frenando who works in the regional secretariat is a very close friend of Mr. Charlis Mudalali's. He provides instruction to Charlis Mudalali for the registration of his business, paying taxes to the government and other legal instructions. Mr. Silva is involved in political activities in addition to teaching. He makes arrangements to provide roads, canals, and electricity and water facilities with the help of the chairman of the Local Government. His son serves as a Samurdhi Officer and make a arrangements to provide subsidies from the government

Mr. Piyasena has land and a few vegetable plots .He sells the harvest to Charllis Mudalali and purchases the necessary items. Mr.Piyasena spends the money earned from selling the harvest on day today consumption and always says his income is inadequate to teach his children and build a houses. But, Mr. Piyasens sends his children to the village school and educates them as far as possible to him with the help of free books and uniforms provided by the government.

Guidelines for the explanation of subject matter:

- The economic system consists of: consumers, producers, government and industrial organizations
- Each and every system purchases goods and services in order to satisfy human needs
- There is a coordination mechanism among these sectors
- It has developed various conventions, traditions, laws and regulations and norms for the function of the mechanism.
- Some sectors control the other sectors in order to maintain the sustainability of the mechanism
- A few shapes could be found in the coordinating mechanism as follows ;
 - Traditions
 - Price Mechanism
 - Command/ Planning mechanism
- When allocating scare resource answer the basic economic problems: what to produce in what quantity, how to produce and for whom to produce by the coordinating mechanism
- The price mechanism provides answers to the basic economic problems based on the profit and the price signal of the goods market and the factor market
- The planning mechanism provides answers to the basic economic problems concerning the common welfare in general
- The laws and regulations mentioned below exist in each and every economic system in order to strengthen the economic process
 - Legal framework
 - Here, freedom of property, freedom of entrepreneur, freedom of choice are specially important.
 - Process
 - Policies
- Here economic policies and social policies are important
- Norms and traditions
- Habits and culture

Competency Level 1.10 : Classifies the economic systems using different criteria.

Number of periods : 06

Learning Outcomes :

- Shows the criteria to be used to classify economic systems.
- Defines and explains the characteristics and functions of a Market economy.
- Defines the command economy and explains its characteristics and functions.
- Defines the mixed economy and explains its characteristics and functions.

Guidelines for the explanation of subject matter:

- Any society face basic economic problem generally.
- Different economic systems occur as the result of solving these basic economic problem.
- These economic systems can be categorized as Market economy, Command economy and Mixed economy.
- Market economy is termed as a Capitalist economic system or a Free enterprise economic system, alternatively.
- The main characteristics of a Market economy can be explained as follows;
 - Private ownership of property
 - Free enterprise and freedom of choice
 - Competition and free market
 - Function of a price mechanism
 - Self interest and profits
 - limited role of the government
- A price mechanism functions as the coordinating mechanism of solving basic economic problems in the market economy.
- The basic economic problems of what and how much to produce is solved in the Market economy by the price signals of the good market.
- The basic economic problem of how to produce is solved in the market economy by the signals of the factor market.
- In the market economy , individual income is decided by two factors such as , price of factors of production in the factor market and exchange of quantity for the price
- The price mechanism does the following functions in the market economy
 - Signaling function
 - Incentive function
 - Allocation function

- There are some disadvantage also in the market economy such as,
 - Inefficient allocation of resources.
 - Failure to provide public goods and merit goods.
 - Externalities.
 - Occurrence of economic disparities.
- Command economic system is explained as an economy where the basic economic questions are solved by the centrally planned authority.
- The main characteristics of a Command economic system can be explained as ;
 - Government owns all the factors of production except labour.
 - Basic economic problems are solved by a centrally planed authority under the guidance of the government.
 - Competition and free market
 - Function on social welfare
- A centrally planned authority decides on what and how much to produce and informs production units..
- A centrally planned authority decides on how to produce. production units are the government entrepreneurship and incentives are decides according to the orders of a centrally planed authority.
- For whom to produced is decided according to the price of factors of production
- Because of the disadvantages of Command economic systems, these economic systems have been transited to Market economy.

Examples: Russia, China and eastern European countries

- Most characteristics of Command economic system and Market economic systems are mixed up and mixed economies occur in most countries

Example: Sri Lanka, India and Pakistan

- The Following characteristics can be seen in a Mixed economic system.
 - Public ownership of property
 - Private freedom limited.
 - The decisions regarding allocating resources of society is taken by the government or is centrally planed by authority.

Competency 2 : Analyze rational behaviour of households and firms in the market.

Competency Level 2.1: Classifies the markets in term of economic analysis.

Number of periods : 05

Learning outcomes :

- Defines a market.
- Defines goods and services market
- Defines the factor market.
- Compares the difference between goods and services market and factor market.

Learning and teaching process:

Engagement

- Write down the student's reactions on market inquiries.
- Inquires about the market activities and write down the students' reactions on the board.
- Identify the basic characteristics of a market through student's reactions.
- Conduct a discussion highlighting the factors mentioned below.
 - Market consists of the following participants
 - Buyers
 - Sellers
 - Goods and services and factors of production are exchanged between these two parties
 - The market can exist in any situation where transactions take place between buyers and sellers and buyers with the intention of exchanging goods and services or factors of production.
 - According to economic analysis, there are two types of markets such as
 - Goods and services market – Transact goods and services.
 - Factor market- Transact factors of production / factor services
- Divide the students into groups and provide the proposed learning instructions.

- Pay attention to the market assigned to your group from among the following markets.
 - Factor market
 - Goods and services market
- Study the event given to you
- Define the market given to you
- List items sold in the market
- Define the main participants of that market
- Explain the economic interactions between these participants
- Explain how the market given to you interacts with other markets
- Be prepared to present your findings to the class creatively

Event

Pujitha is an entrepreneur in a garment industry. He purchases fabrics from Pamunuwa Market. He has employed five female workers as tailors. He has placed a paper advertisement since there are vacancies in his firm. He has a firm with five sewing machines in Dedigama and has planned to purchase another machine with new technology. He has several shops in the main cities in the island to sell his product.

He has obtained orders for special garments in addition to the orders received during festive seasons. He produces frocks and blouses in three sizes since there is a great demand for women's clothes. There is a large number of buyers who purchase goods daily from various parts of the island. He provides special discounts to attract sellers.

Guidelines for the explanation of subject matter

- The market which exchanges consumer goods is defined as the goods and services market
- The market which exchanges land, labour and capital is defined as the factor market
- Households demand goods and services and firms demand factors of production
- Firms supply goods and services for consumption and households supply factors of production
- Demand for factors of production exists, is due to the demand for goods and services
- There is a derived demand for factors of production while there is a direct demand for consumer goods
- Demand for goods and services for consumption depends on their marginal utility and the demand for factors of production depends on the marginal productivity of these factors.
- Factor earning will be determined by factor prices and the amount of factors exchanged factor market.
- Factor earnings consist of transfer earnings and economic rent.
- The minimum income expected by a particular factor remaining in current use is identified as transfer payments.
- Any earnings above transfer payments is the economic rent.
- Demand for factors of production exists, due to the demand for goods and services

(For further details see competency level 2.8)

Competency Level 2.2 Uses graphs and equations for market analysis.

Number of Periods : 06

Learning outcomes :

- Provides definitions with examples of independent variables and dependent variables
- Prepares schedules based on the relationship of independent and dependent variables
- Presents the relationship of the independent and dependent variables using graphs and equations
- Develops a straight line through an equation and an equation through a straight line
- Provides interpretations by computing the slope of a straight line

Learning Teaching Process:

Engagement

- Present the prepared flash cards to the class including those below.
 - Provision of subsidies for fertilizer in the budget
 - Bread price increases
- Elicit the views of students about the expressions above.
- Conduct a discussion by highlighting the factors mentioned below.
- Rice production increases due to fertilizer subsidy
- Quantity demand for bread decreases due to the increase in the price of bread
- Therefore, fertilizer subsidy is the independent variable whereas changes that have taken place in the rice production will be the dependent variable.
- Price of bread is the independent variable whereas changes taken place in the quantity demand will be the dependent variable.
- There is a positive relationship between the fertilizer subsidy and the production of rice.
- There is a negative relationship between the price of bread and the quantity demand for bread.
- These relationships could be presented through graphs and equations.
- Divide the students into group and provide the proposed learning instructions.

Proposed instructions for learning

- Focus your attention to the case provided to your group from through the cases mentioned below.

- X and Y

When the X is zero Y is unit 100. Where as when X increases by five each, Y will be increased by 100 units. When the X is .20 Y will be 500units

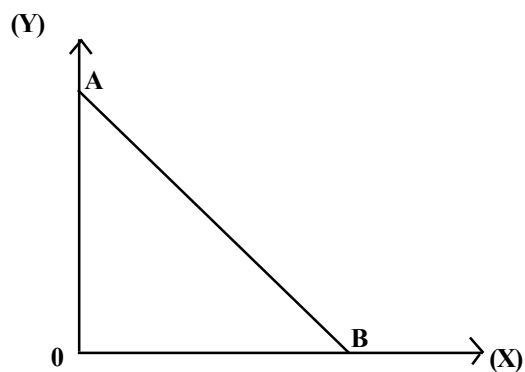
- X and Y

When the X is 12 Y will be zero(0) when X decreased by two, Y will increase by 10units. When the X is zero (0) quantity Y will be 60units.

- Tabulate the information in the case pertaining to you
- Identify the independent and dependent variable in the case
- Graph the relevant data with the independent variable in the vertical axis and dependent variable in the horizontal axis
- Identify the relationship between the two variables
- Calculate changes in the given variable when X changed by one.
- Indicate the production / consumption levels when the X is zero.
- Prepare and creatively present your findings to the whole class.

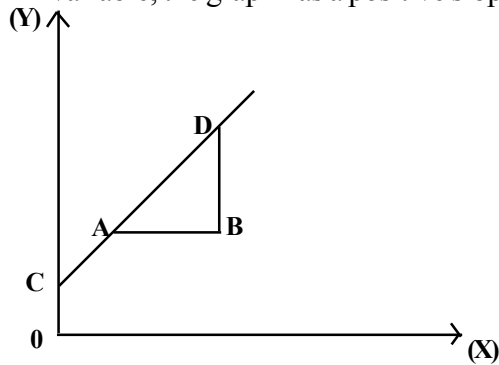
Guidelines for the explanation of subject matter

- Any dynamic phenomenon could be identified as a variable
- Economics studies the relationship of the economic variables
- Various relationships exist among the variables
- Any variable initiated to change the other variable is known as independent variable.
- Changes that have taken place due to the changes of the independent variable is called the dependent variable
- In accordance with the behavior of the independent variable, the quantity of production and consumption could be shown by using a schedule.
- If X is considered as the independent variable and Y as the dependent variable, changes of Y on X could be shown on a straight line in a graph as follows

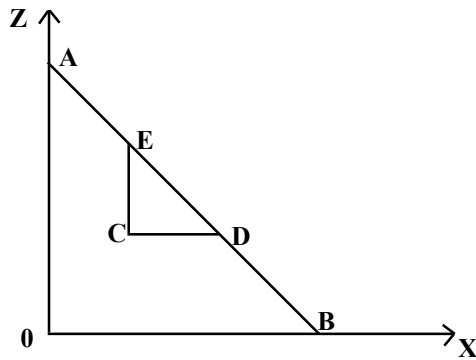


- By drawing the impact of the above variables in a diagram, AB straight line could be derived
- Relationship between the independent and dependent variables related to the straight line could be written as an equation such as: $Y = mx + c$
 $Y = mx + c$ in the equation, Y = dependent variable, X = independent variable
M = gradient/ slope, C = intercept

- When there is a positive relationship between the independent variable and the dependent variable, the graph has a positive slope and this can be shown as follows.



- When there is a negative relationship between independent variable and the dependent variable, the graph shows a negative slope as follows.



- The ratio of the differences in independent variable and the dependent variable is the slope or gradient of the line and it could be computed as follows

$\text{Gradient/slope}(b) = \frac{\text{Difference in the vertical axis}}{\text{Difference in the horizontal axis}}$
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- The equation of a straight line : $Y = a + bx$ is applied in economics in this equation:
 Y = dependent variable

a = Intercept

b = Gradient/ slope

x = Independent Variable

Slope of a straight line is constant

- When the independent variable is Zero (0) the value given to the dependent variable is called the intercept (a)
- If the independent and dependent variable of a straight-line, are given the above equation could be developed,
- When the simple equation has been given the graph can be developed from it.

Competency level 2.3 : Investigates factors determining the market demand.

Number of periods : 06

Learning outcomes :

- Identifies demand.
- Distinguishes between individual demand and market demand.
- Presents individual demand and market demand by a schedule.
- Explains the law of demand.
- Lists the determinants of demand and analyzes their impacts on the demand.
- Derives the demand function.
- Distinguishes the individual demand function and market demand function.

Learning and teaching process:

Engagement

- Name a commodity that is with a student possesses.
- Question about the factors that induced him or her to buy that good.
- Start the discussion highlighting the factors mentioned below.
- Discuss the factors below which are based on fulfilling the demand.
 - Necessity
 - Purchasing power
 - Readiness to buy
- Discuss that the demand based on those factors is the effective demand.
- Group the students and deploy them to the activity giving instructions.

Proposed instructions for learning :

- Concentrate on the topic received for your group, from the topics mentioned below.
- The demand of each individual.
- Demand of all individuals.
- Study properly the conversation which you received.
- List the factors of determining the demand relevant to your topic.
- Explain the factors that affect the demand.
- Represent the relationship between the demand and factors that affect for determination of demand.
- Prepare to present your findings to the class creatively.

Conversation

Uttara : Vishva and Thilini are friends working in the same office. A part of a conversation that happened among them at the lunch break is represented below.

Uttara : The rate at which the price of bread increases day by day is unbelievable. Therefore it is difficult to eat bread at night everyday like previously. Now we eat different things instead of bread.

Vishva : Now, very little bread is available. My husband told that there was a letter to the news paper explaining that the possibility of contracting diabetes is high among people who consume mostly bread. He buys bread rarely from that day. Our friends' consumption level of bread has also dropped now. However, a good thing has happened due to this. Now there is very little buying of things such as Jam, margarine, and butter. Jam and butter are not necessary without bread, are they?

Thilini : Actually, it is very difficult to eat bread according to our salary and the price of bread. But our son likes to eat bread a lot. Because of that I have to bring bread when I go home every day.

Uttara : Thilini, substitute a thing like as hoppers or string-hoppers for bread. Their prices have not increased that much.

Vishva : The people in the cities have not cut down on eating bread, yet.

Uttara : Why is that?

Vishva : The husband and wife of a family in the city, both work. So they do not try to prepare dinner. Because of this, eating bread for the night is very easy.

Thilini : Not only that, there are more wealthy people in the city than in the village. They like to have light foods for the breakfast and the dinner. Even though prices have increased, they like to eat bread.

Uttara : If others can reduce bread consumption like us, the demand for bread would decrease in the market.

Guidelines for the explanation of subject matter:

- The demand is for various quantities of goods which are ready to be purchased at various prices when other factors affecting demand remain constant.
- Demand can be categorized as follows.
 - Individual demand
 - Market demand
- The individual demand is for various quantities of goods, buyers are ready to buy at various prices at a certain time period.
- The market demand is a sum of various quantities of goods which are ready to be bought at various prices by all buyers in a market for a certain good, at a certain time period.
- The theory of demand is analyze the changes of demand according to changes of the determinants of demand.
 - The key determinants of demand can be listed as below.
 - Price of the good concerned (P)
 - Prices of related goods (Substitutes and complementary goods) (Pn)
 - Consumer income (Y)
 - Consumer taste (T)
 - Future expectations (Ex)
 - Number of buyers and its composition. (N)
- The factors mentioned below affect determine the market demand.
- That, it is possible to show the relationship between the individual demand for any good and its determinants, as an equation given below.
 $Q_{dx} = F(P, P_n, Y, T, Ex)$
- The relationship shown by this is named “individual demand function”.
- That, it is possible to show the relationship between the market demand for any good and its determinants, as an equation given below.
 $Q_{dx} = F(P, P_n, Y, T, Ex, N)$
- That, the relationship shown by this is named “Market demand function”.

Competency level 2.4 : Analyzes relationship between price and quantity demanded.

Number of periods : 06

Learning outcomes :

- Analyzes the relationship between price and quantity demanded.
- Explains the three methods of expressing the law of demand.
- Develops the demand curve through the demand schedule.
- Derives the demand equation through the demand curve.
- Shows the law of demand by schedule, curve and equation.
- Analyzes the factors affecting the law of demand.

Guidelines for the explanation of subject matter

- Analyze the inverse relationship between price and quantity demanded when other factors remain constant at a certain time.
- Analyze the law of demand in the following ways.
 - Demand schedule
 - Demand curve
 - Demand equation
- When other factors remain constant and at a certain period of time the table which show the quantities demanded at various price is called demand schedule., the list of number are called demand schedule
- At a certain time when other factors remain constant, the curve which combined all the points of quantities demanded at various prices of the considering good is the demand curve.
- When other factors remain constant, the equation which explains the inverse relationship between the price of considered goods and the quantity demanded is the demand equation.
- When other factors remain constant, the demand curve has a negative slope due to the inverse relationship between price of the good and quantity demanded.
- The three determinants of the inverse relationship between the price of the good and quantity demanded, are;
 - Income effect
 - Substitution effect

- The change in real income of individuals as the change in the price of goods at a certain time, when other factors remain constant is known as income effect.
- The substitution effect could be explained as below.
 - Assume that the other factors except price of the good remain constant (including the price of substitution goods)
 - In this type of situation, the quantity demanded of that good would be increased or decreased on the change of comparative price that resulted from increase or decrease of the price of the considered good.
 - This is the substitution effect. (Explain with an example).
 - As the marginal utility decreases when consumption increases, the consumers are willing to consume more goods only if they are charged less. Therefore the demand increases when the price decreases.
- Contradictions of the law of demand.
 - Giffen goods
 - Prestigious consumption
 - Goods which represent the quality by price.

Competency level 2.5 : Distinguishes between change in quantity demanded and change in demand.

Number of periods : 06

Learning outcomes

- Presents the factors for changing the quantity demanded and the change in the demand.
- Analyzes the change in the quantity demanded due to change in the price by a demand curve.
- When a price of a good remains constant, analyzes how demand varies, by using the demand curve.

Learning –teaching process:

Engagement:

- Present the statement mentioned below, to the students.
“The demand for sea fish has decreased by 20% this year than the previous year”
- Ask students the reasons for the above event and write their reactions on the board.
- Conduct a discussion highlighting the following factors,
 - The reasons mentioned below would affect decrease in the demand for sea fish.
 - Increase in fish price
 - Decrease in consumer taste
 - Effects of substitute goods.
 - Decrease in consumer income.
 - When other factors remain constant, that the quantity demanded decreases as price increased, and the quantity demanded increases as the price decreased.
 - Demand is changes according to the prices of complimentary and substitution goods, Consumer income, consumer taste, and future price expectations
- Group the students, provide them the proposed instructions and engage them in activities.

Proposed instructions for learning:

- The following factors have affected the demand for bread. Pay attention to the factor given to you.
- Price of Rice
- Price of butter
- Wage
- Taste for bread
- Study properly the event given to you
- Prepare a demand schedule according to the change of the price by using information on the given event.
- Derive the demand curve.
- List how the demand for bread changes when the price changes.

Event

Mr. Piyadasa has written the following information on the sale of the bread in his bakery.

When other factors remain constant, the quantity demanded changed. If the price of bread is 25 rupees, the quantity demanded for bread is 500 units and when the price of bread is 50 rupees, the quantity demanded for bread is only 400 units. When the price of the bread increases by Rs. 25, the quantity demand will decrease by 100 units.

Even though, the price of bread remains unchanged, when the price of rice increased, the quantity demanded for bread increased by 100 units at each price level of the bread. When the price of rice is 25 rupees the quantity demanded for bread was 600 and when the price of rice was 50 rupees the quantity of bread was 500 units. But when the price of rice decreased, the quantity demanded for bread decreased by 100 units at each price level.

On the other hand, when the price of butter decreased, the quantity demanded for bread increased by 100 units for each price of bread, and when price of butter increased the prevailing demand for bread decreased by 100 units at each price.

The salaries of government employees were increased. The result of this was an increase in the demand for bread by 150 units at each price. Due to this, the quantity demanded increased and at the price 25 rupees the quantity was 650 and at 50 rupees the quantity demand of bread was 550 units. But since the government started to charge taxes from everybody, the disposable income of consumers decreased. Therefore, the prevailing demand for bread decreased by 50 units at each price.

Consumers' taste for bread has increased in this period. According to this, on behalf of 500 loaves of bread demanded at 25 rupees, 700 loaves of bread was demanded. 200 more loaves of bread was demanded than was demanded at each price level but this taste was reduced due to a review published on the consumption of bread.

Guidelines for the explanation of subject matter

- At a certain time, when other factors affected the demand remains constant, that is, quantity demanded decrease when price is increased, and quantity demanded increased when price decreased.
- Due to this inverse (negative) relationship between the price of the good and the quantity demanded, the point moves along the demand curve.
- When moving upwards along the curve, the demand is contracted and when moving downwards along the curve, the demand is expanded.
- When the price of the good remains constant, the demand curve is shifted right or left due to other factors: price of related goods, taste of the consumer and future price expectations.
- These are known as the decrease in the demand and increase in the demand.
- The change in quantity demanded and the change in demand are two concepts which are different from each other.

Competency Level 2.6 : Calculates the elasticity to identify types of price elasticity of demand

Time periods : 06

Learning outcome :

- Defines elasticity.
- Analyses price elasticity.
- Calculates point elasticity using data.
- Presents types of elasticity based on elasticity coefficient
- Analyses the relationship between the slope of the demand curve and price elasticity
- When the demand equation is given, shows how to calculate the elasticity at a given price level

Learning Teaching Process :

Engagement :

- Present the conversation to the class related to following event

Given below is the conversation between a fisherman and Siridasa who went to the market to buy fish

Fisherman : Come here Sir..... Today fish is cheap, Thora is Rs 600, Talapath is Rs 400 and Kelawalla is Rs 350

Siridasa : Is that for one K.g.?

Fisherman : 500g Sir. If it is expensive Atawalla is Rs.200 and Mullet Rs.300

Siridasa : I bought 500g of Talapath for Rs 300 last week

Fisherman : Even I don't get at that price

Siridasa : Then give 250g of Talapath

- Inquire from the students about the behavior of Siridasa according to the above conversation.
- Conduct a discussion highlighting the factors mentioned below.
- Siridasa has reduced the quantity purchased due to increase in the price of Talapath.
- Consumer responses are different for such price change.
- Change in quantity can be calculated for such these price changes.

Proposed instructions for learning:

- The following are three statements regarding three commodities in the market. Pay attention to the statements assigned to your group
 - When the price increased from Rs 10 to Rs 15, the quantity demanded decreased from 100 to 50 units
 - When the price increased from Rs 10 to Rs 15, the quantity demanded decreased from 100 to 0 units
- When the price increased from Rs 10 to Rs 15, the quantity demanded decreased from 100 to 80 units
- Prepare a demand schedule of price and quantity according to the statement given to you
- Express the price increase as a percentage of initial price when price is increased from Rs.10 to Rs.15.
- Express the quantity change as a percentage of initial quantity when price is increased from Rs.10 to Rs.15.
- Show the ratio of relative percentage change in quantity to percentage change in price
- Express the price decrease as a percentage of the initial price when the price is decreased from Rs.15 to Rs.10.
- Show the ratio of relative percentage change in quantity to percentage change in price when price decreased from Rs 15 to Rs 10.
- Pay attention to the answer when percentage change in quantity is divided by percentage change in price as the price increases and decreases.

Guidelines for the explanation of subject matter

- Elasticity is responsiveness of change in dependent variable relative to independent variable
- Price elasticity of demand is the responsiveness to change in quantity demanded relative to change in price
- Price elasticity can be calculated as follows

$$\text{Price elasticity} = \frac{\text{Percentage change in quantity demand}}{\text{Percentage change in price}} = \frac{\frac{\Delta Q}{Q} \times 100\%}{\frac{\Delta P}{P} \times 100\%}$$

- Elasticity can be calculated under point elasticity formula and arc elasticity formula
- Point elasticity formula estimates the elasticity of given point considering small change in price and quantity
- In point elasticity formula, percentage change of price and quantity are calculated relative to initial price and quantity
- Even though the slope is constant, quantity and price change from point to point. Elasticity of a linear demand curve that slopes from left to right changes from point to point. Elasticity varies from zero to infinity
- Following are three specific situations that have a constant elasticity coefficients throughout the demand curve,
 - Perfect elastic demand
 - Perfect inelastic demand
 - Unitary elastic demand
- Arc elasticity formula can be used to calculate the elasticity of a range
- Arc elasticity formula considers a big change in price and quantity
- In point elasticity formula, percentage change of price and quantity are calculated relative to mean or average value previously and now.
- Types of elasticity which derived according to the elasticity formula can be shown below
 - Zero(0)- Perfect inelastic
 - Less than one(<1)-inelastic
 - Equal to one (1)-unitary
 - More than one(>1)-elastic
 - Infinity perfect elastic
- There is a relationship between price elasticity and consumer outlay/ producer revenue
- Since demand function contains the inverse of the slope, elasticity also can be calculated through it.

Competency level 2.7 :Examines the rational decision making in a market based on price elasticity of demand.

Number of periods : 06

Learning outcomes • Explains the determinants of price elasticity of demand and analyses how affect each factors for elasticity.

- Determines the change of consumer outlay/ business revenue at the given price elasticity when the price of considered good is changed.
- Discusses the practical importance of price elasticity for various economic analysis.

Guideline to explain the subject matters::

- The consumer outlay can be calculated through multiplying the quantity demanded by the price.
- The producer revenue can be calculated through multiplying the quantity sold by the price.
- Due to quantity sold being equal to the quantity purchased, production revenue is equal to consumer outlay.
- When the price is changed, the consumer outlay is changed according to the type of price elasticity.
- There is a positive relationship between change in price of a inelastic good and change in consumer outlay
- When the price increases, the consumer outlay increases.
- When the price decreases, the consumer outlay decreases.
- If the demand of a commodity is unitary, the consumer outlay could not be changed when the price of the commodity is changed.
- It would be an inverse relationship between the change in price of a good and change in consumer outlay , if the demand for a commodity is elastic.
- When the price increases the consumer outlay decreases.
- When price decreases the consumer outlay is increases.
- Various reasons affect to determine price elasticity of demand.
- The reasons that affect change of price elasticity of demand is defined as determinants of price elasticity and these are mentioned below.
 - Availability of substitutes for a good
 - Income which is spent on the good
 - Definition of the good
 - Benefits of the good
 - Luxuries and Necessities
 - Time period needed to adjust to the price changes.

Competency level 2.8 :Examines rational decisions are taken in a market based on cross price elasticity of demand.

Number of periods : 06

Learning outcomes

- Defines cross elasticity of demand and explains how it is calculated.
- Calculates the cross elasticity of demand by using statistical data..
- Classifies the goods as substitutes and complements using cross elasticity of demand.
- Illustrates the practical importance of cross elasticity of demand.

Learning-teaching process:

Engagement

- Get a student to present the following incident..

"Jayanath went to the boutique to buy bread and butter for breakfast. But he realized the price of string hoppers was less than bread. Therefore he has decided to buy string hoppers instead of bread; and also he did not buy butter because he did not buy bread. Jayanath came home with string hoppers for breakfast."
- Inquire about this incident from students.
- Conduct the discussion by emerging the followings.
 - String hoppers is a substitute for bread
 - When buying goods, the increase in price of one good will affect the demand for another good.
- There are two types of related goods .
 - Substitute goods
 - Complementary goods
- Divide students into group and provide the proposed learning instructions.

Proposed instructions for learning:

- Draw your group's attention on the incident given to you.
 - Event 1- When the price of sugar is Rs. 50/= 50 units of jaggery are demanded. the price of sugar has been increased by Rs.5/= from Rs.50/=
 - Event 2- When the price of sugar is Rs. 50/= there was a demand for 300 units of tea leaves. The price of sugar has been increased by Rs. 5/= from Rs. 50/=
 - Event 3- When the price of sugar is Rs. 50/= there was a demand for 1000 units of cement. The price of sugar has been increased by Rs. 5/= from Rs. 50/=
- Study the event of your group thoroughly.
- Explain the relationship between the two goods given.
- Construct the schedule logically about how the price of sugar increases from Rs. 50/= to Rs. 55/= affect to change demand of other goods according to the above relationship.
- Show the assumptions of constructing the above schedule.
- Draw a graph of the above schedule, illustrating the price on the vertical axis and the quantity of the other good on the horizontal axis.
- Calculate the difference of quantity demand of the other good when the price of sugar increases from Rs. 50/= to Rs.55/=.
- Show the percentage change in the increase in price from Rs.50 to Rs55/=
- Show the percentage change in the increase in quantity demand of other good when the price of sugar changes from Rs50/= to Rs.55/=
- Show the percentage change in quantity demand if price of sugar increases by 1%; considering percentage change of price sugar and quantity demand of other good.
- Get ready to illustrate your calculations to the class creatively.

Guidelines for the explanation of subject matter:

- Responsiveness of a change in quantity demand of other good to a change in price of the good concerned is explained as cross elasticity of demand.
- Cross elasticity of demand can be computed as follows

$$\text{Cross elasticity of demand} = \frac{\text{Percentage change in quantity demand of good X}}{\text{Percentage change in price of good Y}}$$

$$E_{xy} = \frac{\frac{\Delta Q_{DX} \times 100}{Q_{DX}}}{\frac{\Delta P_Y \times 100}{P_Y}}$$

- When cross price elasticity is calculated , the answer is explained as coefficient of cross price elasticity of demand.
- Goods can be classified according to the coefficient of cross price elasticity of demand as;
 - Substitutes
 - Complementary goods
- If there is a positive slope of the demand curve which is drawn with substitute goods
- If there is a negative relation ship between the price of one good to the quantity of other good, then the goods are said to be complements.
- There is a negative slope of the demand curve which is drawn with complementary goods.
- If the cross elasticity of demand is zero that means there is no relationship between the two goods.(Unrelated goods)
 - Cross elasticity of demand can be used practically as follows,
 - To realize interrelationship between two goods.
 - To recognize the quantity of production function to compiling economic policies.

Competency level 2.9 :Examines rational decision making in a market based on income elasticity of demand.

Number of periods : 06

Learning outcomes

- Defines income elasticity of demand and presents how it is calculated.
- Computes income elasticity of demand with statistical data..
- Classifies the goods based on income elasticity of demand.
- Investigates how income elasticity of demand is used for economic analysis.

Learning-teaching process:

Engagement

- Get a student to present the following events to the class.

"Vishvanath investigates how external incidents affects the sales of his retail shop. About increase in salaries of government servants recently, he comments the following on his sales of the boutique"

- Because of increase in salaries, demand has increased for grapes, cosmetics, ice cream and etc. but demand for rice has not increased while the demand for margarine has decreased and people demand butter instead of margarine.
- Inquire about students' opinion of the incident.
- Construct important factors on the board
- Conduct a discussion by emphasizing the following factors.
 - Demand changes because of change in income.
 - Change in income does not effects demand in some goods.
 - There are some goods , for which demand has declined when income has increased.
- Divide the students into groups and provide proposed learning instructions.

Proposed instructions for learning:

- Draw the groups' attention to the incident which you have got.
 - Margarine
 - Rice
 - Jewellery
- Identify the nature of good in your group
- List some other goods which are similar to these of your group.
- Assume monthly income at your home. \Mention amount of income which is spent on good concerned.
- How much do you demand for good, if your income is doubled?
- Prepare a schedule to show how demand is changed with change in income.
- Illustrate graphically, the relationship between income and demand according to your data.
- Calculate relative /percentage change in quantity demand to relative percentage change in income
- Get ready to exhibit your discoveries to the class creatively.

Guidelines for the explanation of subject matter:

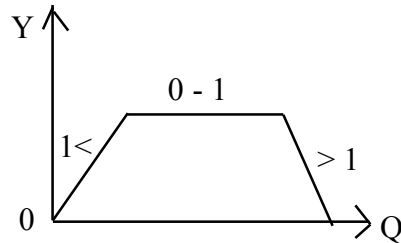
- Responsiveness of change in quantity demand to a change in income is explained as income elasticity of demand.
- Relationship between income and demand varies
- Responsiveness of change in quantity demand to a change in income can be calculated using the following formula

$$Y_{ed} = \frac{\text{Percentage in quantity demand of good}}{\text{Percentage change in income}}$$

$$Y_{ed} = \frac{\Delta Q}{\Delta Y} \times \frac{Y}{Q}$$

- Goods can be classified according to income elasticity of demand.
 - Normal goods Luxury goods
 - Essential goods
 - Inferior goods
- Income elasticity of demand is positive in normal goods, and less than one.
- Income elasticity of demand more than one is luxury goods.
- If income elasticity of demand is less than one, these goods are said to be essential goods.

- Demand for essential goods, sometimes does not change / remain constant ; if income is changed.
- When income increases , demand for inferior goods decreases and income elasticity is negative.
- This relationship can be illustrated with the following graph



- Determinants of income elasticity of demand can be explained as
 - Nature of goods, income group of consumer and etc.
- Practical importance of income elasticity of demand can be explained as, follows
 - Goods can be classified with income elasticity of demand.
 - Income gap of people can be identified.

Competency level 2.10 :Analyses the factors determining market supply.

Number of periods : 06

Learning outcomes

- Defines supply and compares the difference between institutional supply and market supply..
- Name the factors which determines supply and explains how these determinants will affects supply..
- Illustrates functional relationship between determinents of supply.

Guidelines for the explanation of subject matter:

- If a good or a service is supplied to the market, it implies the following facts.
 - Institutes owns technology and other resources for production
 - Institute can earn profits when producing goods
 - There is a plan to produce and market the good.
- Supply of a good to the market by one firm is said to be institutional supply and the total of all firms is market supply.
- The following factors determine a firm's supply
 - Price of goods concerned. (P)
 - Price of inputs (C)
 - Technology. (T)
 - Price of related goods (Pn)
 - Expectations of producers (En)
 - Government policies (G)
 - Other factors.(O)
- Except these factors the number of producers in the market also affects supply.(N)
- Supply function can be illustrated with all these factors as follows.

$$Q_s = f \{P, C, T, P_n, E_x, N, G, O\}$$

- Qs is dependent factors and all other factors are independent factors
- The relationship between all determinents and supply is explained as the theory of supply.

Competency level 2.10 :Examines relationship between price and quantity supplied.

Number of periods : 05

Learning outcomes

- Defines law of supply.
- Lists methods to analyze positive relationship between price and quantity supply.
- Constructs supply curve and supply equation with the help of statistical data.

Learning-teaching process:

Engagement

- Get a student, who volunteers, to present the following events to the class.

Some of girls have inquired about food made out of wheat flour; from the canteen owner. He gave the following answers about supply.

" Quantity supplied of food made out of wheat flour has increased because of the increase in price . Then our profit also will increase. The prices of goods made out of rice flour, do not change. If the price of goods made out of wheat flour decreases, then the supply also decreases. The quantity of production is decided on price only"

- Present the following factors to conduct discussion.
- Supply is explained as, different quantities of supply to the market which producers are willing and able to supply at alternative prices to the market in a given period of time.
- There is a positive relationship between price and quantity of goods, and this is the law of supply.
- Divide the students into groups and provide the proposed learning instructions.

Proposed instructions for learning:

- Pay attention to the topic your group has got; out of following topics
 - Upuli's supply
 - Vajirani's supply
 - Lasanthi's supply
 - Total market supply
- Pay attention to the case study given to you
- Present the following according to your topic
 - Supply curve
 - Supply equation
 - Reasons to supply more when price rises.
- Get ready to present your findings creatively to the class room.

Case Study

There are only three supplies for X goods , in the market. Namely Upuli, Vajirani and lasanthi Quantity supply of these suppliers at different prices are as follows. In this situation, other factors other than price of the good concerned remain constant.

price of X good	Upuli's supply	Vajirani's supply	Lasanthi's supply	Total market supply
10	100	300	150	550
15	150	400	300	850

Guide line to explain the subject matters:

- Positive relationship between price and quantity supply is the law of supply.
- law of supply can be expressed in three ways.
- Supply schedule
- Supply curve
- Supply equation
- The supply curve has a positive slope according to the law of supply.
- The supply equation has a positive relationship
- The positive slope of the supply equation can be illustrated with following equation

$$Q_s = a + \frac{\Delta Q}{\Delta P} P$$

- The reason for the positive relationship between the price quantity supply or the law of supply is the law of increasing opportunity cost.
- The total of each individual suppliers in the market is explained as market supply.

Competency level 2.12 :Distinguishes between change in quantity supplied and change in supply.

Number of periods : 05

Learning outcomes

- Presents reasons for a change in quantity supply of a good and a change in the supply. of a good individually..
- Explains change in quantity supply to change in price by using a supply curve.
- Explains change in supply with changes of other factors while the price is unchanged, by using the supply curve.

Guidelines for the explanation of subject matter:

- Quantity supply is changed with the change in price of good concerned when all other factors which determine demand remain constant.
- If all other factors which determine supply, are constant, increase in price causes the quantity supply to decrease, then a point on the supply curve moves downwards along the supply curve.
- When all other factors which determine supply, the increase in price causes an increase in quantity supply and a point on the supply curve moves upwards along the supply curve.
- Decrease in supply or increase in supply happens if all other factors change while the price of the good concerned is constant.
- Increase in supply causes the supply curve to shift to the right.
- The following reasons cause the supply curve to shift to the right..
 - Decrease in price of related good
 - Decrease in price of production inputs
 - Improvements of technology
 - Expecting a price increase of a good concerned in the future.
 - Increase in the number of producers in a market.
 - Providing subsidies to producer by the government.
 - The supply curve will shift to the left when the supply decreases.
- The following reasons cause the supply curve to shift to the left.
 - Increase in the price of related good.
 - Increase in the price of production inputs
 - Deterioration of technology
 - Expecting a price decrease of good concerned in the future.
 - Decrease in the number of producers in the market.
 - Imposition of taxes on goods and services by the government.

Competency level 2.13 Investigates rational decision making process in a market according to price elasticity of supply.

Number of periods : 05

Learning outcomes

- Defines elasticity of supply and explains how to calculate it.
- Calculates price elasticity of supply by using given data.
- Illustrates how price elasticity of supply is calculated at a certain price of the given supply equation.
- Lists various situations of elasticity of supply based on the coefficient of price elasticity of supply.
- Explains relationship between elasticity of supply and the slope of the supply curve.
- Explains determinants of elasticity of supply.
- Explains how elasticity of supply is used to illustrate various economic analyses with examples.

Guideline to explain the subject matters:

- Calculations of elasticity of supply on a point of a supply curve is explained as point of elasticity.
- The point elasticity of supply can be illustrated by the following formula / equations

$$E_s = \frac{\Delta Q_s}{\Delta P} \times \frac{P}{Q_s}$$

- Axe elasticity of supply is explained as elasticity between two points of a supply curve in given period of time.
- Arc elasticity of supply is calculated using the following formula.

$$E_s = \frac{\Delta Q_s}{\Delta P} \times \frac{P_1 + P_2}{Q_{s1} + Q_{s2}}$$

- Five range of price elasticity of supply can be illustrated as follows.
 - Perfect inelastic supply
 - Inelastic supply
 - Unitary elastic supply
 - Elastic supply
 - Perfect elastic supply
- The supply curve with a positive intercept illustrates elastic supply.
- The supply curve with a negative intercept illustrates inelastic supply
- The supply curve passing through the origin illustrates unitary elasticity of supply.
- In addition to the above situations there is perfect inelastic supply and perfect elastic supply also.

- If the supply curve is parallel to the vertical axis or the price axis price elasticity of supply is perfectly inelastic, the coefficient of elasticity of supply is zero(0).
- If the supply curve is parallel to the horizontal axis or quantity axis , then the price elasticity is perfectly elastic or infinity.
- Quantity supply is changed variously to a change in price because of different factors are effective.
- The following are determinants of price elasticity of supply.
 - Mobility of factors of production.
 - Time period to supply goods
 - Ability to keep stocks and production capacity
 - Nature of good.
- When implementing economic policies supply elasticity is very important.
- Change in price to a change in the nature of a good is decided according to supply elasticity.
- Supply elasticity affects to divide tax incidence between consumer and producer when implementing taxes.
- If price elasticity of supply is more elastic more benefits of a subsidy are enjoyed by the consumer
 - When supply of factors get perfectly elastic the total factor earnings will consist of transfer earnings.
 - When supply of factors get perfectly inelastic the total factor earnings will consist of economic rent.
 - When supply of factors get unitary elastic the total factor earnings will consist of both transfer earnings and economic rent equally.
- Transfer earning and economic rent can be shown by the digams below.

Competency level 2.14 :Investigates the determination of price in a market.

Number of periods : 05

Learning outcomes

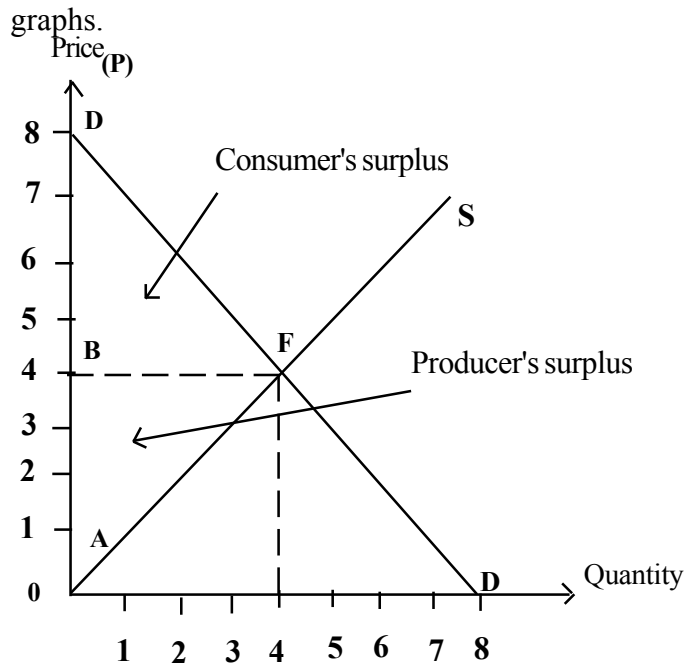
- Defines market equilibrium
 - Names alternative methods of illustrating market equilibrium
 - Illustrates market equilibrium with demand and supply schedules.
 - Illustrates market equilibrium by graphical presentation.
 - Calculates and shows market equilibrium using demand and supply equations
 - Defines excess demand price and excess supply price and illustrates them with graphs.
 - Defines consumer's surplus and producer's surplus and illustrates them graphically.
 - Calculates consumer's surplus and producer's surplus and illustrates them.

Guidelines for the explanation of subject matter::

- Market equilibrium is decided on demand and supply forces.
- Market equilibrium can be explained in three ways
 - By demand and supply schedules.
 - By graphs.
 - By equations.
- Concepts which are related to market equilibrium can be shown as follows
 - Excess demand.
 - Excess supply
 - Excess demand price
 - Excess supply price
 - Consumer's surplus
 - Producer's surplus
- Demand exceeds supply at a given price is termed excess demand.
- Supply exceeds demand at a given price is termed excess supply.

- Excess supply price occurs below the market equilibrium price, .
- Excess supply price occurs above the market equilibrium price .
- The difference between the price which the consumers are willing to pay for equilibrium quantity and actual price which they pay is explained as consumer's surplus.
- The difference between the producers minimum expected price and the actual price which they get is termed, producer's surplus.

• Consumer's surplus and producer's surplus can be illustrated with following graphs.



- According to the above graph the surface area of BDF shows consumer's surplus. The consumer's surplus can be computed using the following formula.

$\text{Consumer's surplus} = \frac{(\text{Maximum price} - \text{equilibrium price}) \times \text{equilibrium Quantity}}{2}$
--

- According to the above graph the surface area of ADF shows producer's surplus.
- Producers surplus can be computed using following formula.

$\text{Producer's surplus} = \frac{(\text{Equilibrium price} - \text{minimum price}) \times \text{equilibrium Quantity}}{2}$
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Competency level 2.15 :Investigates changes equilibrium according demand and supply changes.

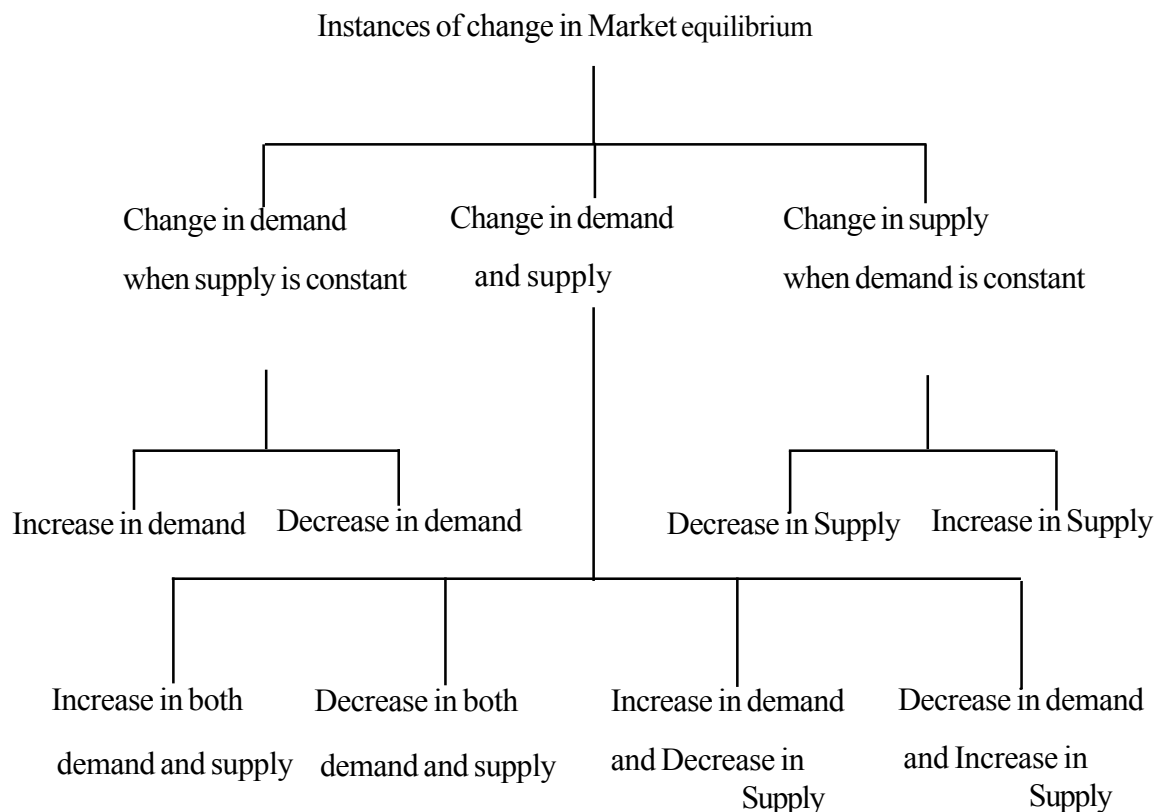
Number of periods : 05

Learning outcomes

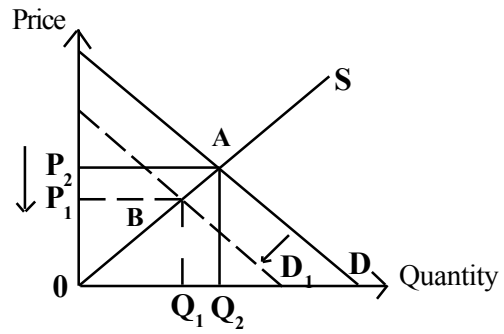
- Explains how the market equilibrium is changed.
- Explains through graphical presentation, how the market equilibrium is changed.

Guidelines for the explanation of subject matter:

- Market equilibrium can be changed with the changes of either demand or supply of the market or changes of supply of the market or changes of both demand and supply
- This can be illustrated through the following chart
- Instances of changes in market equilibrium



- Changes of equilibrium with market forces can be explained through graphical presentation
- Examples of changes in equilibrium with decrease in demand while supply is constant



E- equilibrium before change in demand.
 E1 - equilibrium after change in demand

Competency level 2.16 :Investigates impact of producer taxes on market operations. .

Number of periods : 05

Learning outcomes

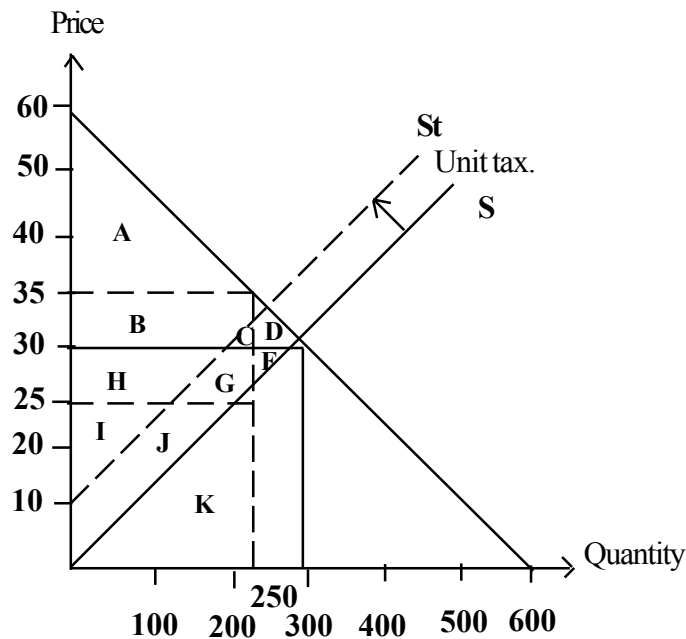
- Explains effects of implementing unit/ specific tax on producer.
- Illustrates influence over market equilibrium when unit tax is implemented on producer, with a schedule or with a graph or with equations
- Explains how unit tax affects consumer expenditure, entrepreneur's income, consumer surplus producer's surplus, government revenue and social welfare by using graphs and equations.

Guidelines for the explanation of subject matter:

- Taxes can be implemented on producer in two ways
 - Specific tax or unit tax.
 - Advalorem tax
- Unit tax is a specific rate on a production unit which is sold.
- Implementation of a unit tax can be illustrated using the following example.

Price before tax	Unit tax	Price after tax	Quantity of supply	Quantity of demand
10	10	20	100	500
50	10	60	500	100

·After implementing Rs.10/= tax on a unit, the influence on market equilibrium can be shown with the diagram.



- The following consequences occur when implementing a unit tax.
 - Increase in consumer's paid price from Rs 30/= to Rs35/=.
 - Decrease in producer's receiving price from Rs. 35/= to Rs.25/=
 - Decrease in equilibrium quantity from 300 units to 250units.
 - Change in consumers expenditure from 30×300 to 35×250 .
 - Change in producers gross income from 30×300 to 25×250
 - Decrease in consumers surplus from ABCD to the area of A.
 - Decrease in producers surplus from HGFIJ to I+J
 - Both consumers and producers surplus will be decreased by an amount of $B+C+D+F+G+H$
 - Government will get a revenue of $B+C+G+H$
 - Decrease in social welfare with $D+F$
 - Consumer has to bear an amount of $B+C$ as a tax burden
 - Producer has to bear an amount of $G+H$ as a tax burden
- Implementing a unit tax can be examined with following equation.
 - Supply equation before tax $Q_s = a + bp$
 - Supply equation after tax $Q_s = a + bp(p-t)$
 - $t =$ unit tax
 Example:
 Demand and supply equations of a particular good are given below.
 $Q_d = 600 - 10p$
 $Q_s = 10p$

- Rs 10/= unit tax is imposed over a unit of a good Supply equation after tax is

$$Q_{st} = 10(p-t)$$

$$Q_{st} = 10(p-10)$$

$$Q_{st} = 10p-100$$

- Equilibrium price and quantity before tax

$$Q_d = Q_s \quad Q_d = 600 - 10P$$

$$600 - 10P = 10P \quad Q_d = 600 - 10 \times 30$$

$$600 = 20P \quad Q_d = 300$$

$$30 = P$$

- Equilibrium price Rs. 30/= equilibrium quantity 300 units.
- Equilibrium price and quantity after tax

$$Q_d = Q_{st}$$

$$600 - 10P = 10P - 100 \quad Q_d = 600 - 10P$$

$$700 = 20P \quad Q_d = 600 - 10 \times 35$$

$$35 = P \quad Q_d = 250$$

$$\begin{aligned}
 \cdot \text{Consumer surplus before tax} &= \frac{(\text{Maximum demand price} - \text{Consumers price}) \times \text{Equilibrium quantity}}{2} \\
 &= \frac{(60-30) 300}{2} \\
 &= 4500
 \end{aligned}$$

$$\begin{aligned}
 \cdot \text{Consumer surplus after tax} &= \frac{(\text{Maximum demand price} - \text{Consumers price}) \times \text{Equilibrium quantity}}{2} \\
 &= \frac{(60-35) 250}{2} \\
 &= 3125
 \end{aligned}$$

$$\begin{aligned}
 \text{Decrease in consumer surplus after tax} &= 4500 - 3125 = 1375
 \end{aligned}$$

$$\begin{aligned}
 \cdot \text{Producer surplus before tax} &= \frac{(\text{Producers price} - \text{Minimum price}) \times \text{Equilibrium quantity}}{2} \\
 &= \frac{(30-0) 300}{2} \\
 &= 4500
 \end{aligned}$$

Calculating Minimum price

$$Q_s = 10p$$

$$0 = 10p$$

$$p = 0$$

$$\begin{aligned}
 \cdot \text{Producer surplus after tax} &= \frac{(\text{Producers price after the tax} - \text{Minimum price}) \times \text{Equilibrium quantity}}{2} \\
 &= \frac{(25-10) 250}{2} \\
 &= 1875
 \end{aligned}$$

- Decrease in producer's surplus after tax = $4500 - 1875 = 1620$
- Decrease in both producer's surplus and consumer surplus after the tax = $1375 + 1375 = 4000$
- Government tax revenue = $10 \times 250 = 2500$
- Unit tax = $32 - 25 = 10$
- Loss of social welfare after tax = $4000 - 2500 = 1500$
- Consumers total tax burden = $5 \times 250 = 1250$
- Producers total tax burden = $5 \times 250 = 1250$

Competency level 2.17: Investigates the distribution tax incidence according to demand and supply elasticities.

Number of periods : 05

Learning outcomes

- Explains how the tax burden is distributed among consumer and producer according to the nature of demand and supply elasticity.
- Presents how tax incidence is divided with use of graphs.

Guidelines for the explanation of subject matter:

- Taxes can be implemented on the producer in two ways
- Tax incidence is divided according to the demand and supply elasticity can be explained graphically.
- The consumer bears the total tax incidence in perfect inelastic demand.
- The producer bears the total tax incidence in perfect elastic demand.
- Tax burden is divided equally between the consumer and producer in a unitary elastic demand.
- Inelastic demand more tax burden should be borne by the consumer, and the producer bears less tax burden.
- Inelastic demand more tax burden should be borne by the producer, and the consumer bears less tax burden.
- The producer bears total tax incidence in perfect inelastic supply.
- The consumer bears total tax incidence in perfect elastic supply.
- Tax incidence is divided equally between consumer and producer in unity elastic demand.
- The producer has to bear more tax incidence in inelastic supply.
- The consumer has to bear more tax incidence in elastic supply.

Competency level 2.18 :Investigates the effects of subsidies on market operations.

Number of periods : 06

Learning outcomes

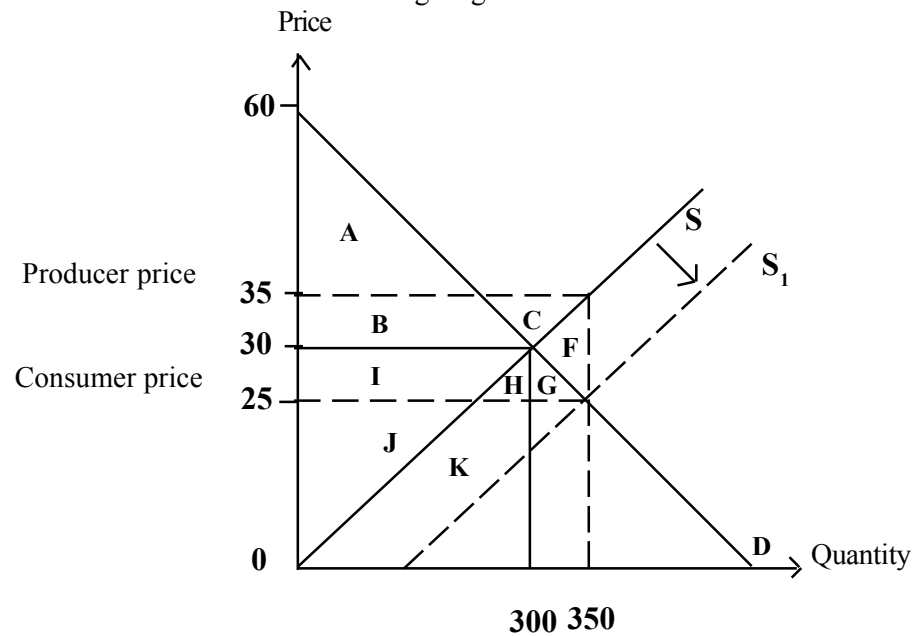
- Names methods of providing subsidies to producers and explains the difference between them.
- Analyses the effects of a unit subsidies over market equilibrium with schedules, graph and equations.
- Analyses the effects of consumers expenditure, entrepreneurs revenue, consumer surplus, producer surplus, government revenue and government expenditure with graphs and equations, when subsidies are given to producers.

Guidelines for the explanation of subject matter:

- Subsidies can be implemented on the producer in two ways
 - Unit or specific subsidy
 - Ad Valorem subsidy
- Providing a specific amount on one unit of production is explained as a unit subsidy.
- Providing a unit subsidy can be illustrated using an example.

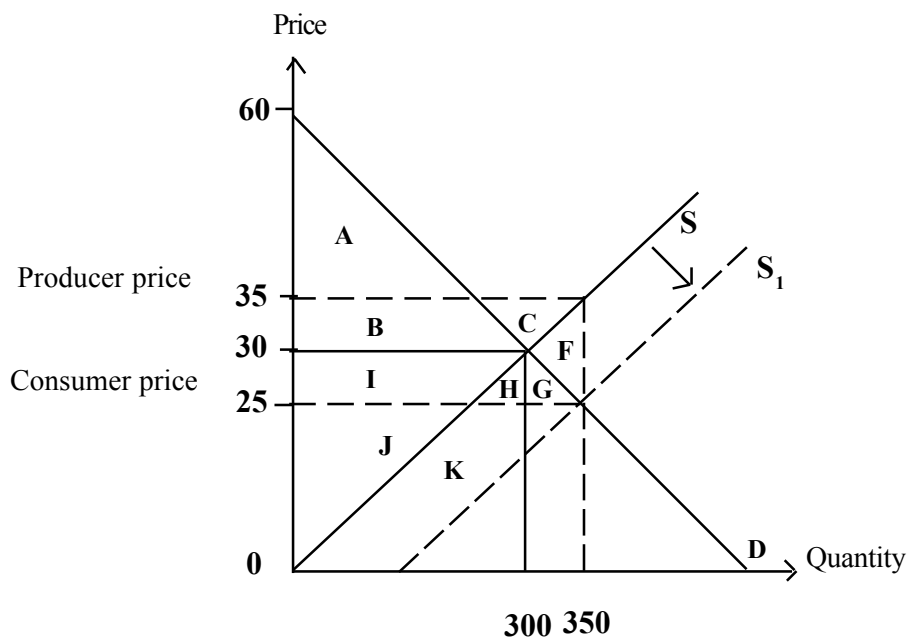
Price before subdy	Unit subsidy	Price after subdy	Quantity supply	Quantity demand
10	10	0	100	500
50	10	40	500	100

- Rs. 10/= subsidy is given per unit. the effects of market equilibrium after subsidy can be illustrated with the following diagram.



- The following consequences will occur when providing a unit subsidy to the producer.
- Consumers have to pay lower price. Price will decrease from 30/= to 25/=.
- Equilibrium quantity is increased from 300 to 350 units.
- The Producer's gross revenue is changed from 30×300 to 25×300 .
- The consumer's surplus is increased from $A+B$ to $A+B+I+G+H$.
- The Producer's surplus is increased from $I+J$ to $I+J+B+C$
- Both consumer and producer surplus are increased by $B+C+I+H+G$.
- Government cost of subsidy is $B+C+F+G+H+I$.
- This is more than the amount both consumer surplus and producer surplus.
- Therefore' social welfare is reduced by an amount of "F".
- Consumer's benefit of subsidy is $I+H+G$.
- Providing a unit tax , can be analyzed with equations too.
- Supply equation before subsidy : $Q_s = a+bp$
- Supply equation after subsidy : $Q_{st} = a+b(p+s)$
- $S = \text{Subsidy } S = 10/=$
- Examples:
- Demand and supply equation of a good are given below.
- $Q_d = 600-10p$
- $Q_s = 10p$

•Rs. 10/= subsidy is given per unit. the effects of market equilibrium after subsidy can be illustrated with the following diagram.



•The following consequences will occur when providing a unit subsidy to the producer.

- Consumers have to pay a lower price. Price will decrease from 30/= to 25/=.
- Equilibrium quantity is increased from 300 to 350 units.
- The Producer's gross revenue is changed from 30×300 to 25×300 .
- Consumer's surplus is increased from $A+B$ to $A+B+I+G+H$.
- The Producer's surplus is increased from $I+J$ to $I+J+B+C$
- Both consumer and producer surplus are increased by $B+C+I+H+G$.
- Government cost of subsidy is $B+C+F+G+H+I$.
- This is more than the amount of both consumer surplus and producer surplus.
- Therefore, social welfare is reduced by an amount of "F".
- Consumer's benefit of subsidy is $I+H+G$.
- Providing a unit tax , can be analyzed with equations too.
- Supply equation before subsidy : $Q_s = a+bp$
- Supply equation after subsidy : $Q_{st} = a+b(p+s)$
- $S = \text{Subsidy } S = 10/=$

•Examples:

Demand and supply equation of a good are given below.

$$Q_d = 600 - 10p$$

$$Q_s = 10p$$

- Providing 10/= subsidy will change the supply equation as follows:

$$Q_{s1} = 10 (P+S)$$

$$S = 10$$

$$Q_{s1} = 10 (P+10)$$

$$Q_{s1} = 10P+100$$

- Equilibrium price and quantity after subsidy

$$Q_{s1} = Q_d \quad Q_d = 600 - 10P$$

$$10P+100 = 600 - 10P \quad Q_d = 600 - 10 \times 25$$

$$20P = 500 \quad Q_d = 600 - 250$$

$$P = 25 \quad Q_d = 350$$

- Consumer pays Rs. 25/= after subsidy
- Producer price after subsidy = 25+10 = 35/=
- Both consumer and producer surplus are increased by B+C+G+H+I.
- Government has to bear the cost of B+C+E+F+G+H+I for subsidy
- After subsidy, consumer is benefited with I+G+H+F.
- Producer is benefited with B+C+E after subsidy.

- Consumer surplus before the subsidy

- Producer surplus before subsidy = $\frac{(\text{Price of producers} - \text{Minimum price}) \times \text{Equilibrium quantity}}{2}$

- Finding minimum price = $\frac{(30-0) 300}{2}$
= 4500

$$Q_s = 10p$$

$$0 = 10p$$

$$0 = p$$

- Producer surplus after subsidy = $\frac{(\text{Price of producers after subsidy} - \text{Minimum price}) \times \text{Equilibrium quantity}}{2}$

- Consumer surplus after subsidy = $\frac{(35-0) 350}{2}$
= 11125

- Producers and consumer surplus before subsidy = 4500+4500 = 9000

•Producers' and consumers' surplus after subsidy = $1125+1125 = 22250$

•Increase in producers' and consumers' surplus of subsidy = $22250-9000 = 12350$

•Government cost of the subsidy = $10 \times 350 = 3500$

•Social welfare loss on subsidy = $8000-7000$
= 1000

•Total benefit to the consumer subsidy = $10 \times 400 = 4000$

•Total benefit to the producer subsidy = $10 \times 400 = 4000$

Competency level 2.19 :Investigates the effects of price on market operations.

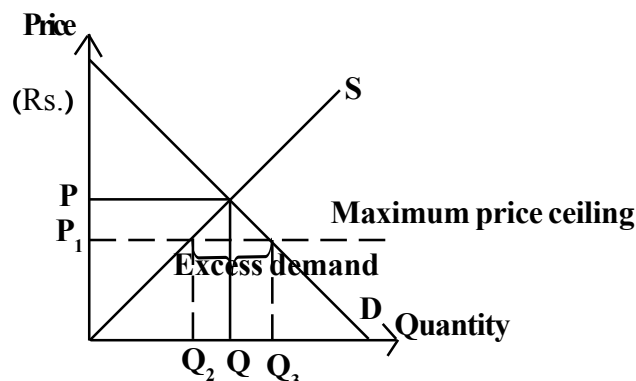
Number of periods : 06

Learning outcomes

- Defines price control.
- Defines maximum price policy and illustrates same graphically..
- Presents the consequences of maximum price policy.
- Explains the procedures used for a meaningful maximum price policy.
- Describes minimum price policy and illustrates it graphically.
- Presents consequences of minimum price policy.
- Explains procedure to clarify minimum price policy.
- Describes guaranteed price policy and illustrates same graphically.
- Presents the consequences of guaranteed price policy

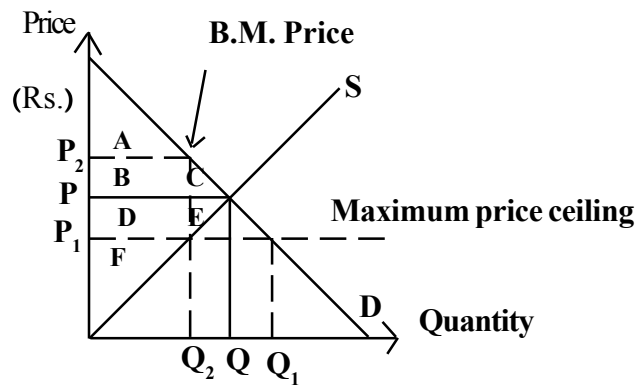
Guidelines for the explanation of subject matter:

- Government intervenes, when market equilibrium which is decided by market forces of demand and supply, are unfavourable to society, to introduce control price, which is explained as price control policy.
- Implementing a maximum price legally is termed maximum price ceiling.
- If the maximum price is to be effective it should be lower than equilibrium price.
- Implementing a maximum price ceiling can be illustrated using a following diagram.



- The following consequences can result from with maximum price policy.
 - Shortage of goods.
 - Non price rationing
 - Creation of a black market price
 - Creation of a economic inefficiencies

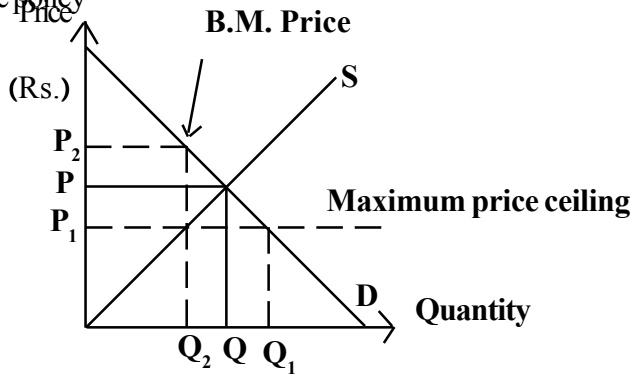
- The following diagram illustrates a how black market occurs with maximum price policy.



• $C+E = \text{Loss of economic surplus}$

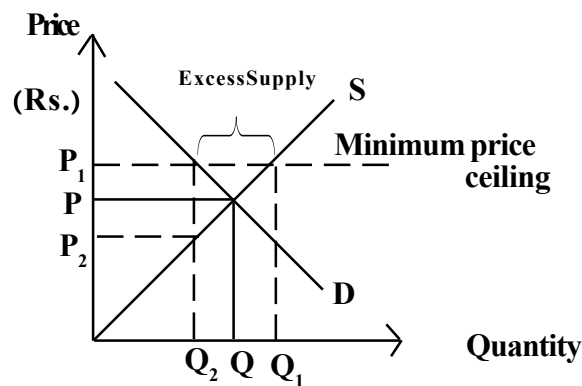
$P_2 = \text{Black market price}$

- The following diagram illustrates how economic inefficiencies occur with maximum price policy

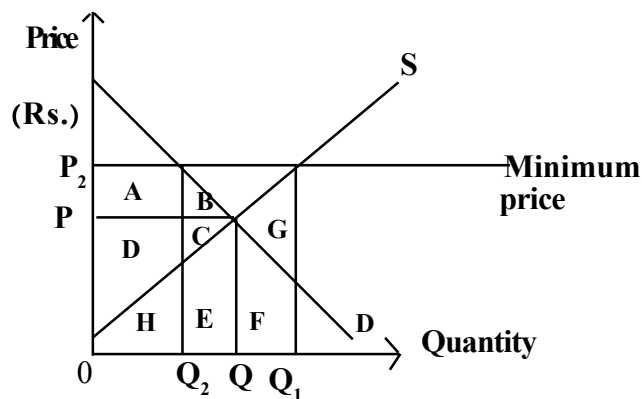


- Economic surplus before price ceiling $A+B+C+D+E+F$.
- After price ceiling policy consumer surplus is only A. and producers surplus is only F.
- After implementing maximum price ceiling policy economic, surplus of $C+E$ is a loss to society.
- If consumer does not have to pay an extra amount to purchase scarce goods except A, B and D will be added to consumer surplus.
- The following methods can be shown to clarify maximum price.
 - Rationing
 - Imports
 - Incentives for the production.

- Non price rationing measures can be illustrated as follows
 - Queues
 - Use of ration cards
 - Rationing with bribes
 - Distribution is connected with other goods.
- Goods can be imported as a solution for the shortage created in market as the result of a price control policy.
- Minimum price is explained as the price which is implemented higher than equilibrium price to give a better price for producer and factor owners.
- If minimum price is implemented lower than equilibrium price, the objectives of minimum price policy cannot be obtained.
- Minimum price implementation can be illustrated with the following diagram.



- The following consequences can occur in the market with minimum price policy.
 - Excess supply or surplus of supply.
 - Unemployment can occur when minimum price is implemented in the labour market.
 - Excess investment situation can occur.
 - Goods can be supplied to consumers at discounted rates by keeping minimum price as nominal price.
- Welfare effects of minimum price policy can be illustrated with the following diagram



- When implementing minimum price consumer surplus, producer surplus will be changed.
- The following steps can be taken to clarify minimum price.
 - Hoarding excess supply
 - By products
 - Promoting demand.
 - Exports
- Government can implement a price support policy with minimum price to give a higher income to producers
- after implementing minimum price policy, if market supply is limited to Q_2 , the welfare loss to society will be B and C
- If the producer decides to expand the market supply up to Q_1 after implementing minimum price policy the welfare loss the society cannot be assured.
- If the producer decides to expand market supply to Q_1 after implementing minimum price policy and if the government purchases the excess supply the welfare loss to society will be $B+C+E+F+G$

Competency 3: Explores the rational behaviour of production units in the market

Competency Level 3.1: Analyses the nature of the production process

Number of period: 08

Learning Outcomes:

- Examines a production process.
- Shows the relationship between inputs and outputs as a function.
- Distinguishes between short run and long run in production.
- Verifies the law of diminishing (marginal) returns with the use of production schedules.
- Examines the law of returns to scale.
- Shows the relationship between short run production curves.

Guidelines for the explanation of subject matter:

- Firm is a unit that produces products using economic resources
- Technological relationship between inputs and outputs is described by the production function
- Production function is summarized by the following equation

$$Q = F (L, K)$$

Q = output

F = Function

L = Labour (Variable factor inputs)

K = Capital (Fixed factor inputs)

- Variable factor inputs and fixed factor inputs exist in the short run production

- All factor inputs are variable in the long run.
- Short run and long run are determined by the nature of production
- Short run production behaviour is characterized by the law of diminishing marginal returns
- Short run production is governed by the law of diminishing marginal returns
- Diminishing marginal returns states that when production is increased by increasing variable factor input for a given amount of fixed factor input, the average and marginal product of the variable factor will diminish after a point
- The table below illustrates the law of diminishing marginal returns

Inputs		Output		
Labour	Capital	Total product TP (quantity)	Average product AP (quantity)	Marginal product MP (quantity)
0	20.0	0	-	
1	20.0	7.5	7.5	7.5
2	20.0	25.0	12.5	17.5
3	20.0	60.0	20.0	35.0
4	20.0	90.0	22.5	30.0
5	20.0	100.0	20.0	10.0
6	20.0	105.0	17.5	5.0
7	20.0	105.0	15.0	0
8	20.0	100.0	12.5	-5.0

- Marginal product is zero when the total product is maximized
 - Marginal product curve slopes downward through the maximum point of the average product curve
 - Returns to scale explains long run production behaviour when all factors are variable
 - There are three types of returns to scale
 - Increasing returns to scale
 - Decreasing returns to scale
 - Constant returns to scale
 - Increasing returns to scale prevails when output is increased by a greater percentage than the increase in all inputs in the long run production
 - Decreasing returns to scale exists when output is increased by a less percentage than the increase in all inputs in the long run production
 - Constant returns to scale exists when output is increased by the same percentage to the increase in all inputs in the long run production
 - Increasing returns are the result of economies of scale
 - Increasing returns are caused by the geometric nature of certain inputs, indivisibility of factors of production, use of machinery, division of labour and specialization of labour, and one time payment
 - Diseconomies of scale causes decreasing returns to scale
 - Decreasing returns to scale are caused by depletion of resources, stress and, problems of management and coordination

Competency Level 3.2:Calculates production cost using various approaches.

Number of period: 08

Learning Outcomes:

- Defines production costs and difference between direct costs and indirect costs with examples.
- Examines the difference between economic costs of production and accounting costs, with examples.
- Defines normal profits and give reasons for including it to the production cost.

Guidelines for the explanation of subject matter::

- The opportunity cost of all economic resources forgone for a particular production process can be identified as production cost.
- In economics, opportunity cost is considered as production cost which it includes both direct and indirect costs.
- In accounting, only direct costs will be considered.
- Indirect cost/ assumed cost means, earnings of factors forgone to employ the production resources of a production firm for their production process.

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- In accounting, only direct costs will be considered.
- Indirect cost/ assumed cost means, earnings of factors forgone to empty the production resources of a production firm for their production process.

- The minimum benefit expected by an entrepreneur to remain in the production process is considered as normal profits. Also it is considered as the opportunity cost of the production factor of the entrepreneur.
- Expenditure borne by a production personally for the inputs of the production process is identified as private costs and expenditure borne by independent external parties as a result of the production process is identified as external costs.

Competency Level 3.3: Analyses behaviour of costs in the production process.

Number of period: 06

Learning Outcomes:

- Defines and calculates principles of short run costs of production
- Presents principles of short run costs of production using schedules and graphs

Learning Teaching Process ::

Engagement:

- Inquire from students about the expenses to be incurred by an individual who intends to sell milk coffee by using a milk coffee maker
- Conduct a discussion highlighting the following facts
 - Expenditure includes cost of the milk coffee maker, costs of milk powder, cost of coffee, cost of sugar, costs of plastic cups, expenses on electricity etc
 - Cost of the milk coffee maker is a fixed cost
 - Other expenditures are variable costs
 - Likewise, there are two types of costs a production firm will incur
 - Fixed costs
 - Variable costs

Proposes Instructions for Learning:

- The fixed cost of producing commodity X is Rs. 60. the quantity of output and variable cost of production of the commodity is given below.

Q	TVC
1	30
2	40
3	45
4	55
5	75
6	120

- The fixed cost of producing the commodity Y is Rs. 120. the quantity of output and variable cost of production of the commodity are given below

Q	TVC
1	60
2	80
3	90
4	110
5	150
6	240

- Prepare a schedule to show the total fixed cost at each level of output.
 - Calculate the total cost at each level of output and enter them into the same schedule.
 - Graph the information given in the schedule you prepared showing the cost along the vertical axis and the quantity of output along the horizontal axis.
 - Prepare a schedule showing the increase in total cost (marginal cost MC) as the quantity of output is increased by one unit.
 - Construct a new graph using the information presented in the above schedule. (show the cost along the vertical axis and the quantity of output along the horizontal axis)

- Calculate the average total cost of output (ATC) and show it in the same schedule
 - Graph the average total cost of output
 - Calculate the average variable cost of output, show it in the same schedule and then graph
 - Comment on MC, ATC, AVC curves
 - Prepare to present your findings to the entire class in an innovative manner

Guidelines for the explanation of subject matter:

- Components of the short run costs of production can be stated as below
 - Total fixed cost
 - Total variable cost
 - Total costs
 - Marginal cost
 - Average cost
 - Average fixed cost
 - Average variable cost
- Fixed costs are expenditure on fixed factors such as Machinery, plants and management
- Fixed costs exist even if zero output is produced
- Total variable costs are expenditure on variable factors such as raw materials and labour used in the production
- Total cost is all expenditure incurred in the production of a commodity
- Total variable cost is zero when the output is zero. As output is increased total variable costs increase first less rapidly and then more rapidly. The reason is the law of diminishing returns.
- Total cost consists of fixed costs and variable costs.
- Marginal cost is the change in total costs as one more unit of output is produced.
- It is calculated as follows

$$\text{Marginal cost} = \frac{\text{change in total cost}}{\text{change in quantity of output}} = \text{MC} = \frac{\Delta \text{TC}}{\Delta Q}$$

- Average total cost (ATC) is the total cost per unit of output
- Average total cost is calculated as follows
- Various forms of short run costs of production can be calculated
- Average total fixed cost (AFC) is the total fixed cost per unit of output
- It is calculated as follows

$$\text{Average Fixed cost} = \frac{\text{Total Fixed cost}}{\text{Quantity of output}} = \text{AFC} = \frac{\text{TFC}}{Q}$$

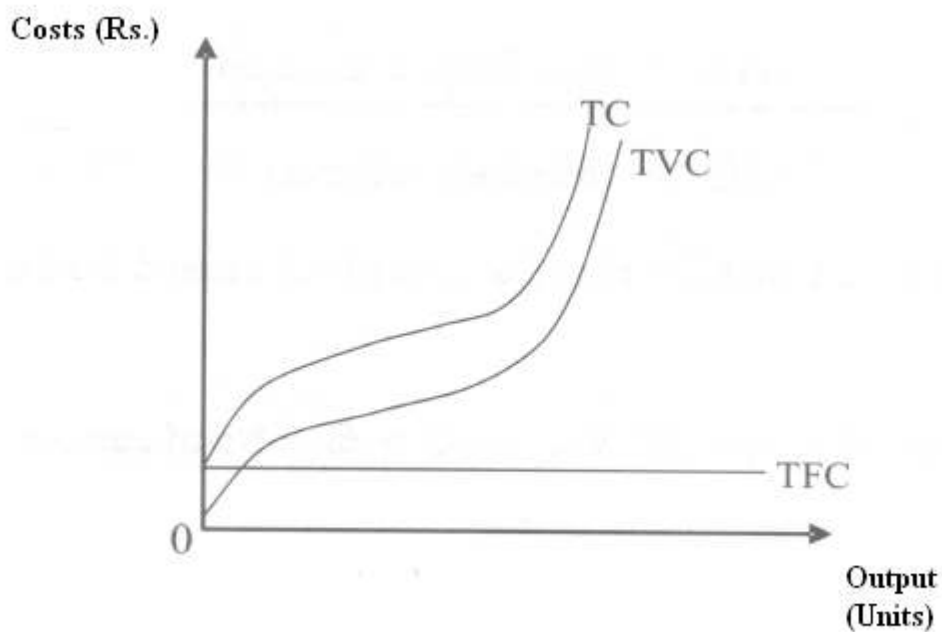
- Average variable cost (AVC) is the total variable cost per unit of output
- It is calculated as follows

$$\text{Average Variable cost} = \frac{\text{Total Variable cost}}{\text{Quantity of output}} = \text{AVC} = \frac{\text{TVC}}{Q}$$

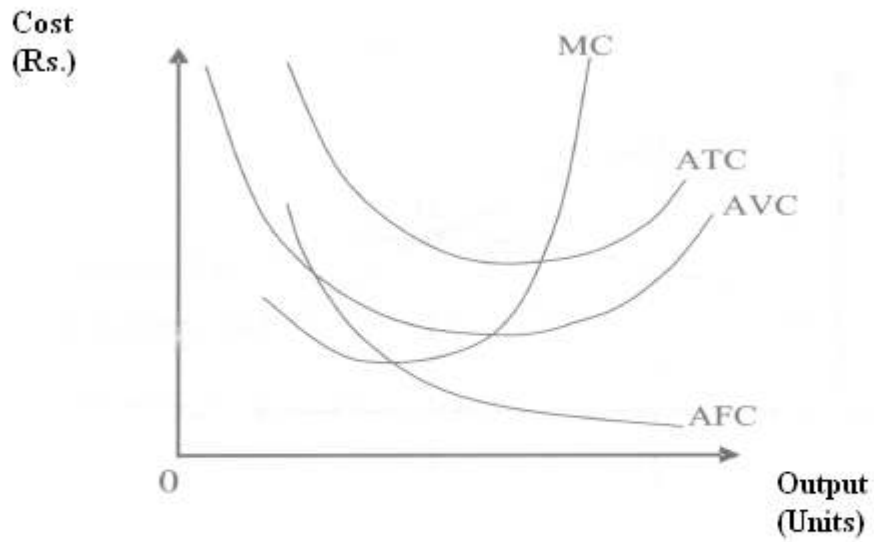
- The above cost components can be presented in a schedule as below

	TFC	TVC	TC	AFC	AVC	ATC	MC
0	40.00		40.00	-	-	-	-
1	40.00	40.00	80.00	40.00	40.00	80.00	>40
2	40.00	70.00	110.00	20.00	35.00	55.00	>30
3	40.00	92.00	132.00	13.33	30.67	44.00	>22
4	40.00	107.00	147.00	10.00	26.75	36.75	>15
5	40.00	117.00	157.00	8.00	23.40	31.4	>10
6	40.00	127.00	167.00	6.67	21.16	27.83	>10
7	40.00	142.00	182.00	5.71	20.29	26.00	>15
8	40.00	164.00	204.00	5.00	20.50	25.50	>22
9	40.00	194.00	234.00	4.44	21.56	26.00	>30
10	40.00	234.00	274.00	4.00	23.40	27.40	>40

- Total cost, total fixed cost and total variable cost given in the schedule can be illustrated graphically as below



- Marginal cost, average cost, average fixed cost and average variable cost given in the schedule can be illustrated graphically as below



Competency Level : 3.4 Analyses Market structure through basic characteristics.

Number of period: 05

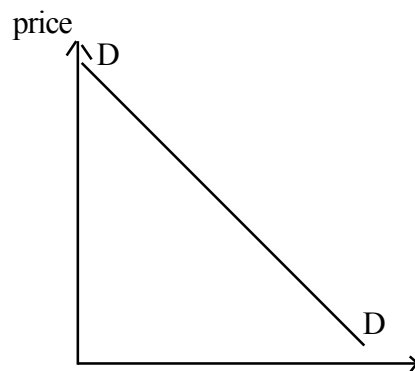
Learning Outcomes:• Presents Market model with examples and explanations

- Illustrates basic characteristics of a market model with charts / schedules

Guidelines for the explanation of subject matter:

- Market and industry are concepts with similar meanings.
- The sum of all firms which produce homogeneous goods is termed an industry.
- Goods and services produced by firms are sold in various market situations.
- These market situations can be termed market structures.
- The following criteria can be used to classify a market structure.
- Number of firms in the market.
 - Nature of goods and services produced.
 - Entry to and exit from market.
 - Nature of competition among firms.
- According to the changes of market features the nature of market structure varies / differs
- Four market structures can be classified based on the above criteria.
 - Perfect competition
 - Monopoly
 - Monopolistic competition
 - Oligopoly
- Market situations with ease of entry, a large number of firms which produce homogeneous products, is termed, Perfect competition
- Perfect competition market has the following characteristics.
 - Products are homogeneous
 - A large number of buyers and sellers are present in the market
 - Ease of entry to the market
 - Perfect information can be taken about a market.
- Close characteristics of Perfect competition could be seen in the agriculture, fishing, industry and mining industry
- Market situations with one industry and one firm and barriers to entry is termed monopoly.

- A Monopolistic market has the following characteristics.
 - Only one firm is involved in production
 - Specialty in production
 - Barriers to entry to the industry
 - Imperfect information on the market
- Because one firm is in a monopolistic market, it can influence market price
- Demand curve of monopoly is a downward sloping curve.
- It can be illustrated as follows.



- Supplier of monopolistic firms acts as a price maker.
- Examples of a monopolistic market are, water supply, electricity, railway etc.
- The following factors determine entry to the monopolistic market.
 - Ownership of basic inputs -> To avoid entry of other firms to produce the good.
 - Government legislator obstructions -> Goods should be produced under government licences..
 - Returns to scale -> Producing goods by institutions which are involved in the market (Natural Monopoly).
- Both characteristics of Perfect competition and Monopoly can be seen in a market situation which is called Monopolistic competition
 - The following characteristics can be illustrated in a Monopolistic competition market
 - A large number of sellers.
 - Differentiated goods.
 - Ease of entry.

- Most exceptional characteristics of Monopolistic competition is differentiation of goods.
- Goods differentiation means, that every firm will differentiate his good with other supplies and provide it to the market.
- Because of differentiation of goods, one good of a firm is not a perfect substitute to another good of another firm

Examples - different soaps, Tooth paste and Shoes

- Because of differentiation of goods, production firms have to compete with each other, and this ability will strengthen them with the following factors.
 - Quality of these good
 - Price of good
 - Marketing
- The demand curve of a monopolistic competitive market slopes downwards.
- Oligopoly is defined by a limited number of firms in the market.
 - The following characteristics can be seen in Oligopoly
 - These is a artificial or natural barriers to limit new firms entering the industry.
 - There is a small number of firms competing in industry.
 - Market imperious. (Imperious attitude in market)
- The following are the barriers to limit new firms entering the industry
 - Returns to scale.
 - Goodwill.
- Because of a small number of firms in market the portion of market for each firm is relatively high.
- Therefore firms in the market are interdependent.
 - Examples of Oligopolistic industries are newspapers, broadcasting services, soap, soft drinks commercial bank, Gas etc.

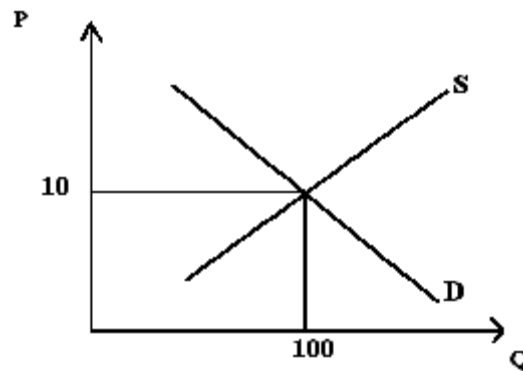
Competency Level : 3.5 Analyses short run behaviour of a firm in Perfect Competition..

Number of periods: 08

- Learning Outcomes:**
- Constructs graphs to illustrates the relationship between market demand and firm's demand.
 - Constructs schedules to Illustrate the relationship between average revenue and marginal revenue.
 - Names short term profit maximization approaches of perfect competitive firm.
 - Illustrates maximization of profit with graphs and schedules according to each approach.
 - Presents short term equilibrium of a Perfect Competitive market with graphs.

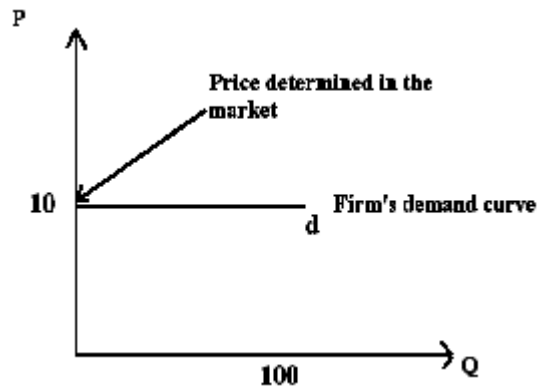
Guidelines for the explanation of subject matter:

- Price is determined by demand and supply in a Perfect Competitive industry.
- It can be illustrated by the following diagram.



- Price which is determined as above, cannot be changed by one firm, therefore activities of a firm will be inactive.
- A firm can produce any amount of at the market determined price.
- Therefore a production in a Perfect Competitive firm is a price taker.
- A firm can supply any amount of goods at the prevailing price.
- Any amount of goods can be demanded at that price.
- The demand curve of a Perfect Competitive firm is perfectly elastic.

- This can be illustrated with following diagram.



- The production in short term is governed by technology and capacity of the firm.
- Output and cost is divided on these components.
- To obtain maximum loans in a short run, two important decisions should be taken. They are normally,
 - Whether production should continue; or close down?
 - If production is to be continued, what is the amount of production?
- When deciding on output level according to maximization of profits, firms have to follow two alternative of profits, the firm has to follow two alternatives namely,
- Deciding on output level of maximum economic profits based on revenue and cost.
- Deciding on output level of maximum economic profits based on marginal revenue and total cost
- The total amount of money which a firm earns by selling its output to the market is termed as Total revenue.
- Total revenue can be calculated by multiplying quantity and price of good.
 $TR = Q \times P$
 Total Revenue = Output x Price.
- Average revenue can be calculated by dividing Total revenue with quantity of goods

$$AR = \frac{TR}{Q}$$

Average Revenue = Total Revenue/ Output

- Change in total income, when producing one more extra unit is termed as marginal revenue,

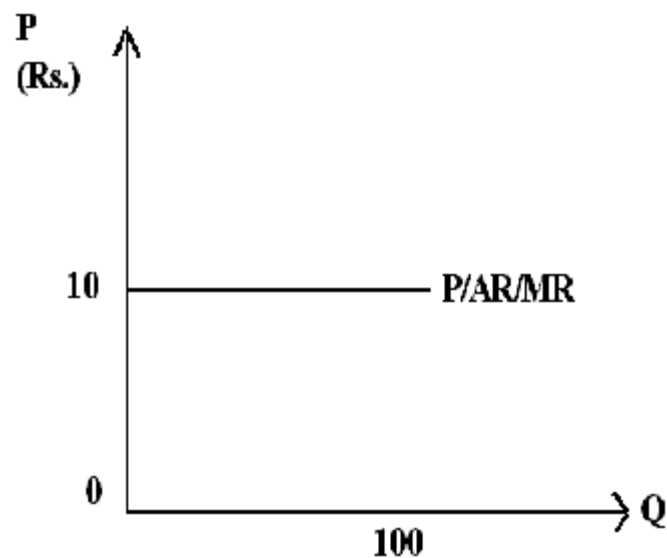
- Change in total revenue should be divided by change in output to reach marginal revenue.

$$\text{MR} = \frac{\Delta \text{TR}}{\Delta \text{Q}}$$

Marginal Revenue = Change in Total Revenue / Change in output

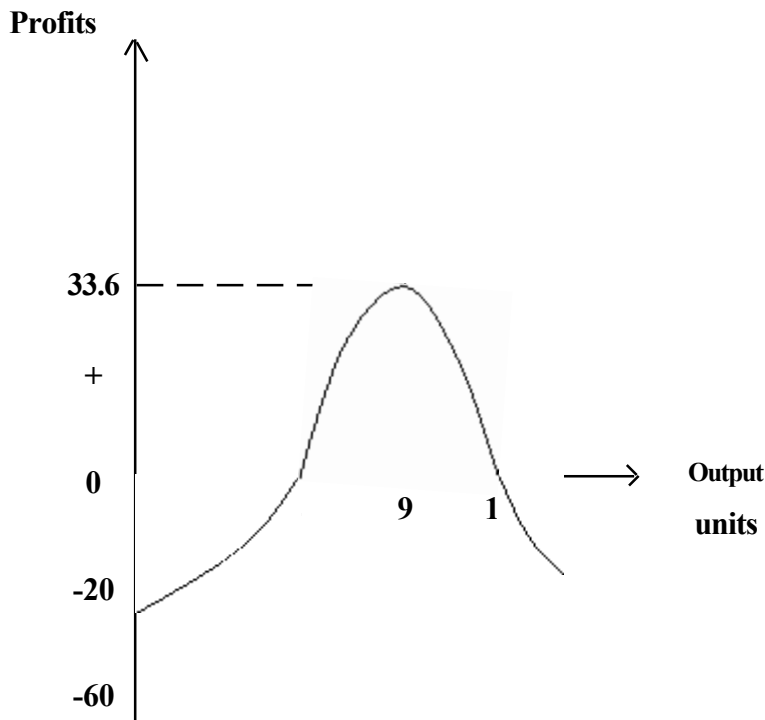
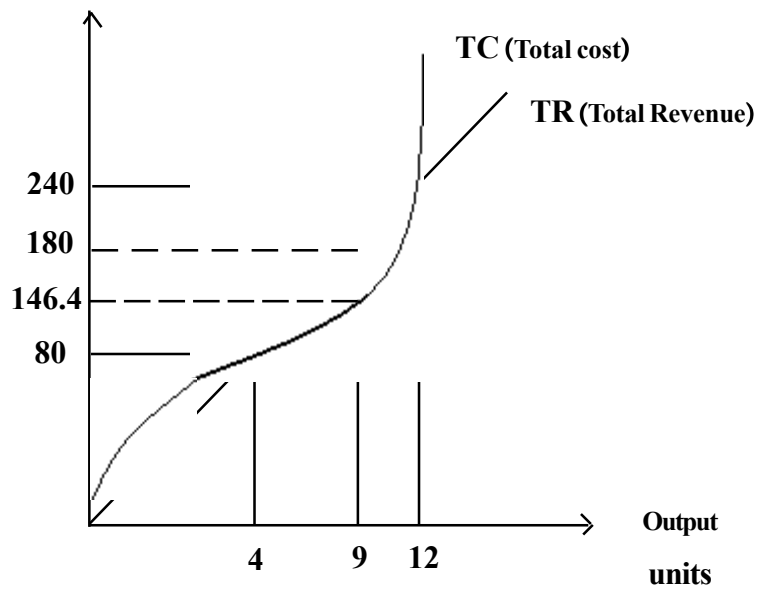
- Determined price can be seen in a perfect competitive firms, therefore price of good, average revenue marginal revenue are equal to each other.
- Then P=AR=MR Concept is fulfilled.
- To illustrate relationship between Total Revenue average revenue and Marginal Revenue,
- Following schedule and graph can be constructed.

Q	P	TR	AR	MR
1	10	10	10	10
2	10	20	10	10
3	10	30	10	10
4	10	40	10	10
5	10	50	10	10



- Economic profits can be gained by deducting total cost from total revenue.
- Relationship between total cost, Total revenue and economic profits can be illustrated by a schedule and a graph.

Q	Total Revenue (TR)	Total cost (TC)	Economic profit (TR-TC)
0	0	20.0	-20.0
1	20.0	36.8	-16.8
2	40.0	52.8	-12.8
3	60.0	68.0	-8.0
4	80.0	80.0	0
5	100.0	90.4	9.6
6	120.0	101.6	18.4
7	140.0	114.4	25.6
8	160.0	128.0	32.0
9	180.0	146.4	33.6
10	200.0	168.0	32.0
11	220.0	196.0	24.0
12	240.0	240.0	0
13	260.0	288.0	-28.0
14	280.0	340.0	-60.0



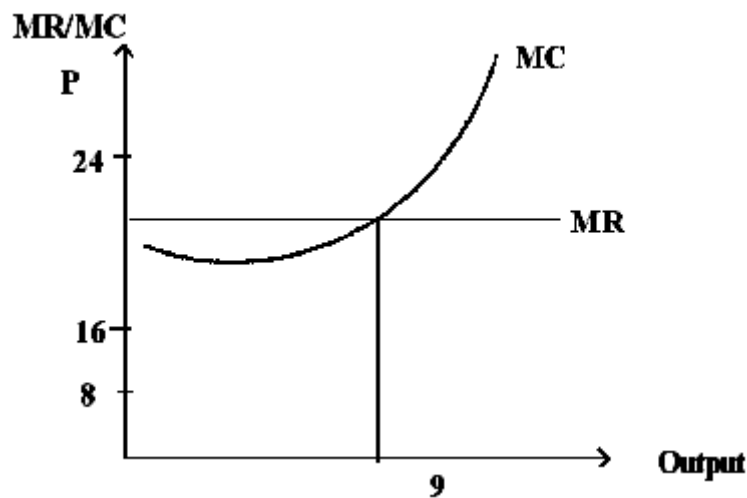
- According to the above schedule and the diagram the following factors can be concluded.
- Revenue curve will commence through the origin and slope upwards as the revenue is increased with increase in output.
- Cost curve slopes upwards, as cost is increased with increase in output..
- Economic profit will be zero when the total cost and revenue curve intercept each other.
- If the total cost curve is higher than the revenue curve, economic losses can occur or zero economic profits.
- If the total revenue curve is higher than the total cost curve, economic profit occur.
- Economic profits will be maximize at mid point where the highest difference between the total cost curve and the total revenue curve.

- Marginal costs (MC) and marginal revenue (MR) analysis also can be used to illustrate profit maximization.
- If marginal cost is less than marginal revenue ($MR > MC$) it means the firms will make extra profits by selling more units.
- If marginal revenue is less than marginal cost ($MC > MR$) firms will take losses by producing extra units.
- To maximize their profits, firms should produce where marginal revenue and marginal cost are equal ($MR = MC$).
- According to marginal analysis, the output level of profit maximization should be according to the condition of $MR = MC$.
- Maximization of profit under marginal analysis, can be illustrated using the following schedule.

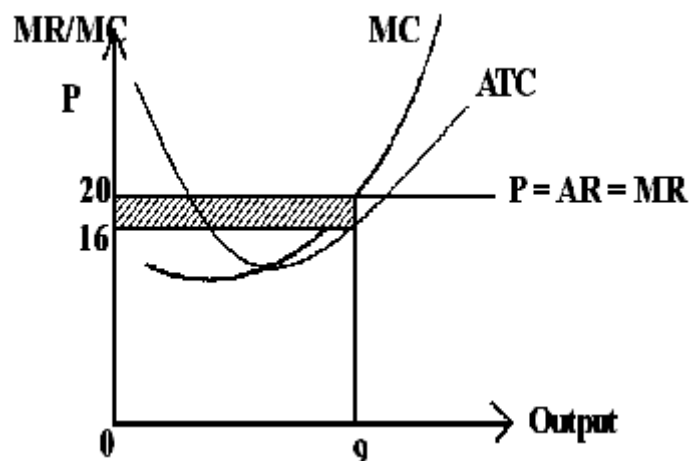
Q	(TR)	(TC)	MR	MC	Economic profit (TR - TC)
6	120.0	101.6	20.0	12.8	18.4
7	140.0	114.4	20.0	13.6	25.6
8	160.0	128.0	20.0	18.4	32.0
9	180.0	146.4	20.0	21.6	33.6
10			20.0		

- The following factors can be gained from the above schedule.
- Economic profits will remain between 8th and 9th units of production.
- Firms leave to reduce profits between 9th and 10th units of production.
- At the 9th units of production there is no increase or decrease in profits. Profits are maximized.

- Profit maximization of a perfectly competitive firm can be illustrated through the following diagram.

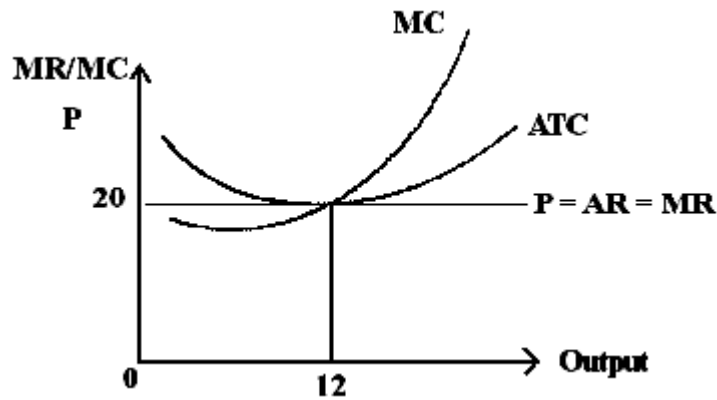


- According to the above graph,
 - If the output is less than 9 units profits can be increased by increasing the output.
 - At the 9th unit economic profits are maximized.
 - If the output is more than 9 units economic profits will decrease.
 - Economic profits will remain between 8th and 9th units of production.
- Short run behaviour of a perfectly competitive firm, can be explained through three alternative situations. Such as,
 - Producing earnings with economic profits
 - Producing earnings with zero economic profits
 - Producing earnings with economic losses
- When economic profits are earning, the selling price of a unit is more than the average total cost (ATC/AC).
- This can be illustrated through the following graph.

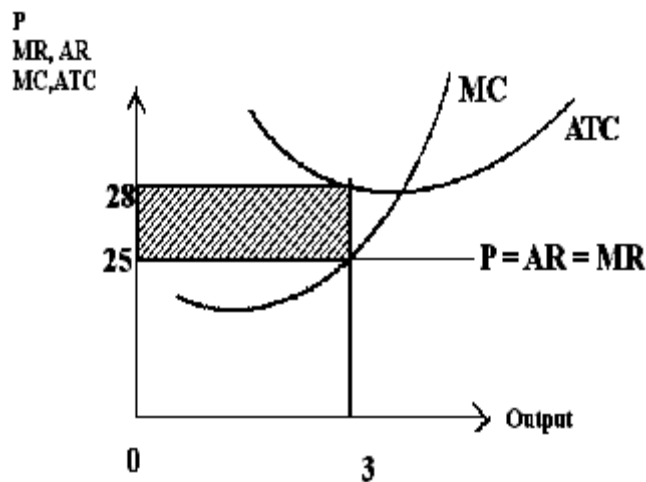


- According to the above graph, profits are maximized at the 9th unit, the total economic profits are illustrated by the shaded area.

- When economic profits are zero, the selling price of a unit equals average revenue.
- This is illustrated by the following graph.



- Under this condition, firm will remain in the industry, because they get an income which is equal to average cost.
- If the selling price of the product is less than the average cost, that is with economic losses even a firm will produce in the short run process.
- If the losses by closing down the firm is less than that while producing, the firm will remain in the industry.
- This situation can be illustrated through the following graph.



- The shaded area illustrates the total losses of a firm which is producing with losses in the short run.
- Perfect competition is a hypothetical market.
- A production firm can avoid variable cost in the short run but not the fixed cost.
- If the firm cannot cover up the total cost with its revenue production will be discontinued.
- If the price is less than the average variable cost, losses will increase with greater production.

Competency 4 : Demonstrates preparedness to compile National Accounts within macro economic framework.

Competency level 4.1: Investigates macro economic objectives.

Number of periods: 06

Learning Outcomes:

- Names Macro economic objectives.
- Defines full employment and explain the importance of the concept.
- Defines and explains importance of equity.
- Defines macro economic stability, exhibiting the relationship between external and internal stability.
- Shows the difference between economic growth and sustainable development.

Guidelines for the explanation of subject matter:

- Various objectives which society wants to fulfill are explained as macro economic objectives.
- Expected targets to direct macro economic variables are named macro economic objectives
- Macro economic objectives are as follows;
 - Full employment
 - Economic Stability
 - Equity
 - Economic growth
 - Sustainable development
- Full employment means all resources of the economy which are used in maximum efficiency to produce goods and services.
- Equity means to minimize the unequal distribution of income.
- Equity does not mean equal distribution of income among house holds.
- Earnings can be varied with quality of human resources and productivity but it is not contradictory with equity.
- Macro economic stability is explained as maintaining the internal and external stability in the economy.
- Price stability and full employment are important in internal stability.
- To maintain fixed foreign exchange rate and a balance B.O.P is important in external stability
- The reason for economic growth is increase in real National Production for a period of time and production possibilities curve will shift to the right in economic growth.
- Standard of living will increase if the increased real income is divided among people fairly.
- Sustainable development is explained as a balanced development of economic, social and environmental sectors.

Competency level 4.2: Investigates key macro economic variables.

Number of periods: 06

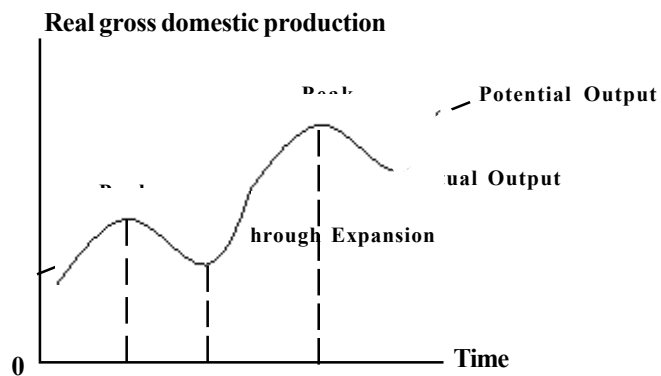
Learning Outcomes:

- Names the Macro economic variables and defines them separately.
- Analyses the relationship between short term and long term behaviour of macro economy with a graph
- Explains the difference between potential output and actual output and analyses recession and expansion.

Guidelines for the explanation of subject matter:

- The main variables which decide the economic activities are known as macro economic variables.
- Macro economic variables can be shown as follows;
 - National output
 - Employment
 - Price level
 - Balance of payment
 - Foreign exchange rate.
- When the activities of the main economic variables change, the aggregate production of the economy also changes.
- Business cycles are explained as the cyclical behaviour of real gross domestic production which changes with time.
- Business cycles can be used to understand the relationship of short term and long term behaviour of a macro economy.
- Can understand the four periods of a business cycles.
 - Recession
 - Trough
 - Expansion
 - Peak

- This can be illustrated with a graph.



- The point where the actual output is at its minimum, is trough; and maximum point of the actual output is peak.
- The period from trough to peak, is the period in which the actual production is expanded.
- The period from peak to trough is the periods in which the actual production is contracted; and this the recession.
- Time periods of expansion are longer than recession .
- Time from one peak to another peak is the length of a business cycle and these lengths vary in a business cycle and lengths vary with each other.
- The long term trend of a business cycle can be explained as either economic growth or economic decline.

Competency level 4.3: Analyses alternative approaches to National Accounting using the circular flow of national income

Number of periods: 05

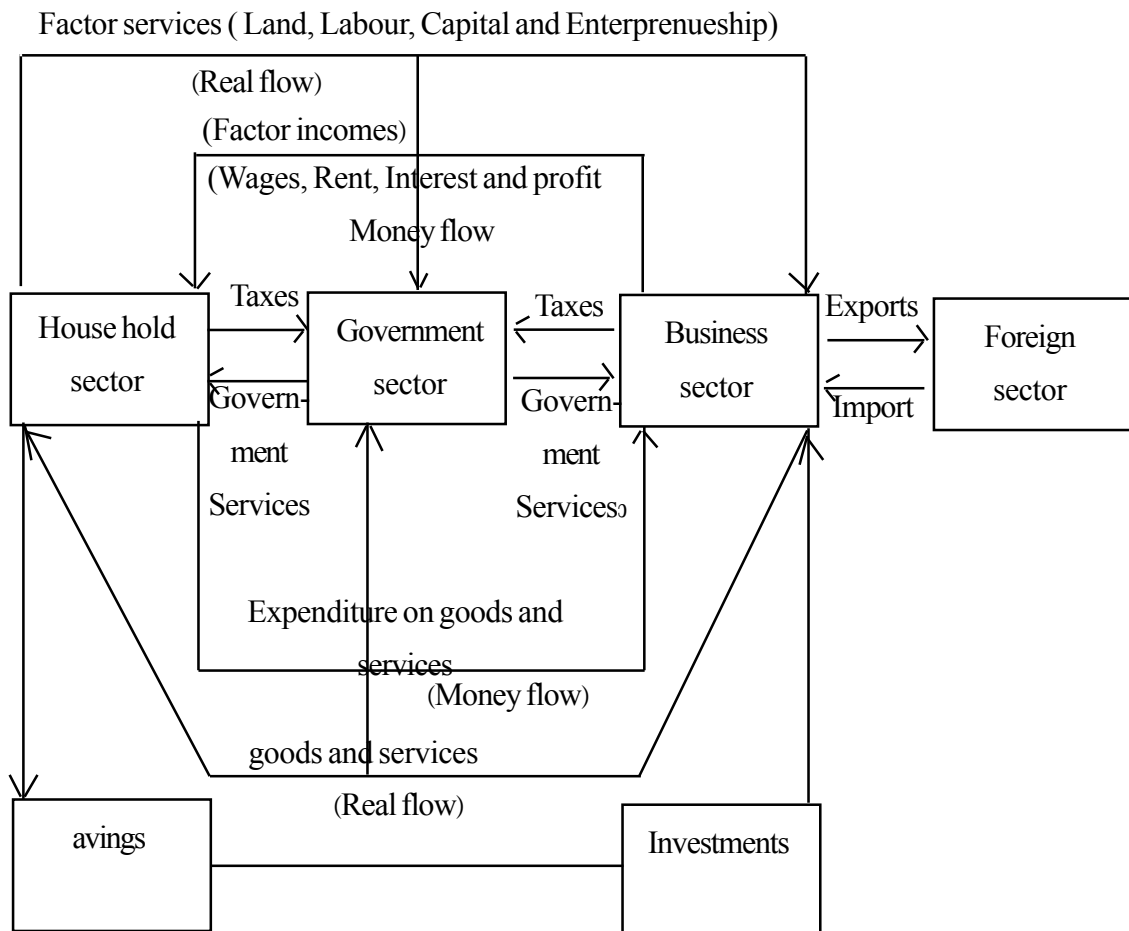
Learning Outcome:

- Names the economic sector that contributes to macro economic activity.
- Illustrates the transactions between these economic sectors / agents with a circular flow of income.
- Proves that the value of production flow equals the value of income flow..
- Declares that National output can be calculated with three approaches, such as Production, Income and Expenditure.
- Presents the excluded items with reasons preparing National accounts.

Guidelines for the explanation of subject matter:

- There are four main economic agents/ sectors that contribute to macro economic activity
 - Households
 - Business sector / Enterprises
 - Government
 - Foreign sector
- Macro economic is implemented with the transaction flows of economic sectors.
- These transactions flows can be illustrated with a simple diagram.
- This diagram is named, circular flows of income and expenditure.
- The economy which is implemented in households and the business sector is treated as a simple economy.
- In this simple economy savings is a withdrawal / leakage and investments is an injection.
- Aggregate income and aggregate expenditure are equal in a simple economy if savings and investments are equal.
- The functions of a simple economy can be illustrated with an income and expenditure flow, as savings that is either no savings and investments or there is savings and investments in the economy.

- The functions of a closed economy with government intervention to a simple economy can also be illustrated with income and expenditure flow and can be illustrated with income and expenditure
- In a closed economy, total of savings and taxes are the withdrawals and the total of government purchases and investments are the injections.
- When taxes and savings are equal to the investments and government purchases, then the aggregate income and aggregate expenditure are equal. That is $Y=E$.
- If all four sectors function in the economy it is explained as illustrated by the following income and expenditure flow.
- Income and expenditure flow of an open economy can be illustrated as follows;



- In an open economy, withdrawals are savings, taxes and imports while investments, government purchases and exports are the injections
- When all withdrawals and injections are equal in the open economy, then the aggregate income and expenditure are also equal.
- Income and expenditure flow explains, that production flow is equal to income flow, and income flow is equal to expenditure flow.
- National income accounting estimates the value of production, income and expenditure flows.
- Some items should be exchanged in national income accounting.
- The following items should be exchanged from National accounting
 - Transactions in the money market.
 - Exchanged of intermediate goods

Competency level 4.4.: Demonstrates preparedness to compile National Accounts using the output approach.

Number of periods: 05

Learning outcomes:

- Estimates the value of National productions with output approach, using given data.
- Confirms reliability of National accounts is reduced because of multiple counting .
- Explains value added method and final product method to avoid multiple counting.

Guidelines for the explanation of subject matter:

- Estimating National production based on Output flow, is named output approach.
- When calculating national accounts with output approach, multiple counting can occur.
- To avoid multiple counting, two methods can be used.
 - Final product method.
 - Value added method.
- Final product method includes only the final values of consumer goods , Investment goods and services.
- The total of value added of all sectors as agriculture, industry and services is termed Gross Domestic Production.
- Value added can be calculated with the difference between total value and inputs.
- Value added is explained as all new values which are added to the production process at different times.
- It includes, the payments for factor services, net indirect taxes and depreciation

Competency level 4.5.: Investigates various concepts of output approach on a comparative base.

Number of periods: 05

Learning outcomes:

- Explains concepts such as Domestic / Gross National, Net Domestic / Net National Products under output approach.
- Computes the national production under the above concepts with given data.
- Explains the calculation of national production at factors cost price and market price with statistical examples.
- Explains and calculates the difference between gross domestic production at current price and gross domestic production at constant price.
- Computes the implicit price index of gross domestic production, comparing gross domestic production at current prices and gross domestic productions at a constant price.
- State changes of all prices of goods and services in National Productions.

Guidelines for the explanation of subject matter:

- Gross Domestic Production is the value of final productions, produced in a geographical region in a certain year.
- The total of value added in agriculture, Industrial sector and services is Gross Domestic Production.
- The total value of output which is manufactured by the national resources, in a given period of time is Gross National Production.
- Gross National Production can be calculated by adjusting receipts and payments of foreign factor income to Gross Domestic Production.
- The difference between receipts and payments of foreign factor incomes is named net foreign factor income.
- Net Domestic Production is the difference between gross domestic production and capital consumption (Depreciation)
- Net National Productions is derived by deducting capital consumption from gross national production
- Exceptional characteristic of Net National Production is that it includes only the income of factors services.
- National income is calculated by adjusting net indirect taxes to net National Production.
- Value of the productions is based on payments of all factors or cost of production is explained as factor cost price.
- When net indirect taxes are adjusted to factor cost price, Gross Domestic Production at market price occurs.
- Gross National Production at market price is explained as the current price or present price of gross National production.
- Gross National Production at current price does not show the real increase of the economy.

- To understand the changes of real production the Gross Production should be adjusted for the price inflation.
- If the value of production at current prices is deflated by a price index, the value of the production at constant price is derived.
- Gross Domestic Production at constant price is termed real Gross Domestic Productions
- By comparing the Gross Domestic / National Production at the current price with Gross Domestic / National Production at constant price, implicit price index occurs.
- Implicit price index or deflator of national production can be computed as follows.

$$\text{Implicit price index} = \frac{\text{G.D.P. at current price}}{\text{G.D.P. at constant price}} \times 100$$

Competency level 5.6.: Demonstrates preparedness to compile National Accounts using the income approach.

Number of periods: 05

Learning outcomes:

- Illustrates how national production is calculated with expenditure approach..
- Shows that the value of gross National productions equals expenditure on Gross National Production with examples..
- Explains the difference between Gross Domestic Production and illustrates how to calculate these concepts.
- Explains how expenditure on Gross Domestic Production becomes expenditure on Gross National production.
- Names the expenditure which are excluded to avoid multiple counting in expenditure method.
- Explains the composition of total resources and utilization.

Guidelines for the explanation of subject matter:

- Expenditure on final consumer goods like food, clothes etc and services by households is explained as private consumption expenditure.
- Gross investment can be classified as
 - Gross domestic fixed capital formation
 - Change in stocks (Inventories)
- Government purchases are the expenditures on goods and services by the government.
- Net exports is the difference between exports and imports.
- value of gross domestic expenditure comprises private consumption, gross investment and government purchases.
- Expenditure on gross domestic production can be calculated by adjusting net exports to gross domestic expenditure.
- Expenditure on Gross National Production can be calculated by adjusting Net Foreign Factor Income to Expenditure on Gross Domestic Productions
- The following types of expenditure are excluded by considering only effective economic activities
 - Transfer payments
 - Transactions of resale of goods
 - Expenditure on intermediate goods
 - Expenditure on financial papers.

- Structure of resources can be explained as;

Total resources =	Gross domestic production + goods and non factor services imports.
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- Utilization of resources can be explained as:

Utilization resources =	Private consumption + Government consumption + Gross domestic capital formation + Goods and Non factors services exports.
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(Explain using related data in Sri Lanka)

Competency level 4.7.: Demonstrates preparedness to compile National Accounts using the income approach

Number of periods: 05

Learning Outcomes:

- Explains the value of production and estimates with all production factor incomes which have contributed to production process...
- Classifies the factor income, and explains them separately with examples.
- Exhibits the calculations of gross domestic production at factor cost price and at market price using the given data..
- Explains the excluded transaction with examples when computing National accounting in Income approach.
- Computes personnel income and disposable personal income by computing the differences .
- Computes disposable gross national income with the given information ..
- Exhibits the calculation of real National income with the given information.
- Illustrates the calculation of domestic savings and National Savings.

Guidelines for the explanation of subject matter:

- National income can be computed in income approach by adding all factor of income in production process.
- Factor incomes in production process.
- Factor incomes can be classified under five categories.
 - Income of employment
 - Real income
 - Net interest
 - Profit and entrepreneur's income
 - Self employment and professional income.
- Employed income is based on three factors
 - Salaries and wages
 - Employers' payments for social security contributions.
 - Insurance services, health facilities, labour compensations and disaster payments to employees.

- Rent income is based on the following
 - Rent income earned from fixed property and rent from internal resources which are given on lease or rent.
 - Rent from houses and implicit rent
 - Income on intellectual property
- Only net interest of the business sector is included in National income estimates
- Profit and entrepreneurs' income are based on the following sources.
 - Corporate income taxes
 - Dividends given to owners.
 - Undivided profits
- Self employed and professional income include the following.
 - Sole enterprises which are not registered as companies.
 - Partnerships and cooperatives .
 - Farmers'
 - Various professionals employed in other jobs
 - Professionals (Doctors, Lawyers)
 - Private incomes
- Household income can be calculated as follows;

Gross National production (At factor cost)		XXX
Add		
Net foreign private transfers	XX	
Pensions	XX	
Household interest from government loans	XX	
Other transfers for households	XX	
		XX
		XXX
Deduct		
Capital depreciation	XX	
Undivided profit of companies and corporate taxes	XX	
Government property income	XX	
Social security contributions		XX
		XX
Personal income		XX

- Disposable personal income occurs when direct taxes are deducted from personal income.

• The following schedule illustrates how foreign accounts are related to National accounts

Expenditure on gross = domestic production	=	Gross domestic expenditure + Balance of trade+ Balance of services accounts
---	---	--

Expenditure on gross = National production	=	Gross domestic expenditure + Balance of trade+Balance of services accounts+balance of income account
---	---	--

Disposible gross = National Income	=	Gross domestic expenditure + Balance of current account of Balance of payment
---------------------------------------	---	---

- Net domestic income at factor cost can be calculated as follows.

Net domestic income = at factor cost	=	Employed income+ Rent income net interest+ Corporate profits+ self employed and professional income
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- Gross domestic income at factor cost is computed using the following.

Gross domestic income = Factor cost	=	Gross domestic income (factor cost) + Capital depreciation
--	---	---

- Gross domestic Income at market price is computed using the following equation

Gross Domestic income= (market price)	=	Gross domestic income (Factor cost) + Net indirect taxes
--	---	---

- Gross National income at market price is calculated with the following

Gross National Income = at market price	=	Gross domestic income at market price + Net foreign factor income
--	---	--

- National income can be computed in two ways

National Income	=	Gross National product at factor price - Capital depreciation
National Income	=	Gross National product at market price - (capital depreations + Net indirect taxex)

- Real National income can be computed through the following method

Real National income	=	Gross National product at factor cost + Effects of terms of trade
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- Domestic savings is calculated with as follows

Domestic savings	=	Gross domestic capital formation + net exports
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- National savings is calculated as follows.

National savings	=	Domestic savings + Net foreign factor income + Net foreign private current transfers
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(Explain using related data in Sri Lanka)

Competency level 4.8.: Investigates the application of National Accounts

Number of periods: 06

Learning Outcome:

- Computes per capita output..
- Computes personnel income and disposable personal income by computing the differences .
- Names the limitations in preparing National accounts...
- Explains the under estimation of National production as the non-inclusion of transactions which are not come through the market..
- Illustrates the under estimation of National production by excluding illegal economic activities from National accounts...
- Expresses that national production is over estimated by excluding the unfavorable influence of environmental decoration..
- Explains the importance of green National accounting .

Guidelines for the explanation of subject matter:

- Data on National accounts are essential for economic management.
- Gross Domestic production comprises three sectors agriculture, Industry and services.
- The importance of economic structural changes with relative contribution of economic sector to gross domestic production, can be analyzed..
- Considering the structure of gross domestic production, economic policies can be implemented to uplift the relevant economic sectors.
- National income accounts can be used to illustrate the distribution of income among factors of production.
- This shows the percentages of incomes distributed to labour and property assures.
- National accounts can be used to evaluate the economic condition of a country and international comparison.
- Per capita income is computed with the ratio between National income / production and mid year population of the country.

$$\text{Per-capita Income} = \frac{\text{National Income / production}}{\text{Midyear population}}$$

- Economic growth is explained as the continuous increase in real national output.
- Economic growth can be measured with the gross National production at constant prices .
- The following limitations can be seen when preparing the National income accounting data.
 - Transaction of non market activities
 - Illegal economic activities
 - Informal economic activities
 - Increase in quality of production
 - Non-consideration of the influence of the environment.
 - Excluding the interest payments on government debt.
- Transaction of non market activities are
 - Household services in a household.
 - Services of self employment.
 - Subsistence economic activities
- National production is under estimated as non-inclusion of the above effective economic activities.
- Examples of illegal economic activities are
- Illegal production and sales of liquor, prostitution, bribery and corruption military and insurgent activities.
- Through income and expenditure flows occur in all these activities, the value of National production is underestimated because they are not included.

- Informal economic activities are explained as the activities performed by poor people and are not recognized by the government
- characteristics of informal economic activities areas are as follows.
 - Informal documentation
 - Depends on family labour.
 - Failure to count for tax payments and social security contributions.
 - Failure to conform to various government rules and regulations
- Production values derived from the above economic activities are not officially reported, therefore, National accounts are under estimated.
- When calculating National accounts only quantity is considered but not increase in quality.
- Unfavorable influence on the environment when the production process is explained as environmental deviation.
- Because of these unfavorable influences to welfare are not included, National income is overestimated.
- Considering these effects of environment national accounts are adjusted are called green national accounts.

Competency 05 : Investigates determining of macro economic equilibrium.

Competency Level 5.1: Investigates the components of aggregate expenditure.

Number of periods: 06

Learning outcome:

- Explains the concept of aggregate expenditure.
- Names the components of aggregate expenditure.
- Explains the relationship between private consumption expenditure and disposable income.
- Describes the components of aggregate expenditure one by one.
- Names and explains the determinants of private consumption.
- Names and explains the determinants of investment expenditure.
- Names and explains the determinants of government expenditure.

Guidelines for the explanation of subject matter:

- Income is generated through the production process and that income will be spent to purchase goods and services.
- The components of aggregate expenditure are as follows:
 - Private consumption
 - Government consumption expenditure
 - Investment expenditure
 - Net export
- The consumption expenditure depends on the disposable income.

$$C = f(Y_d)$$

- Private consumption expenditure comprises
 - Buying durable consumer goods
 - Buying non durable consumer goods
 - Buying services
- The expenditure on capital goods is, investment expenditure
Example: Machinery, tools, housing and etc..

- Government expenditure spent to purchase goods and services from private sector to provide various economic activities.
 - Example:
 - Provide public goods
 - Provide merit goods
 - National security
 - Government administrative cost
- The difference between export revenue and import expenditure is net exports
- This net export can be either negative or positive.
- The determinants of private consumption can be shown as follows.
 - Disposable income
 - The wealth of households
 - Levy of taxes by the government
 - Loans of households
- The determinants of investment expenditure are; as follows
 - Demand for goods produced through new investments.
- Changes of interest rates and corporate taxes.
 - Business expectations
- The factors of determining the government consumptions expenditure are as follows
 - Usage of public goods
 - The expenditure on welfare goods
 - The expenditure on public administration

Competency Level 5.2: Investigates way of determinates equilibrium in a two sector model.

Number of periods: 06

Learning outcome:

- Defines macroeconomic equilibrium
- Presents the equilibrium conditions in a simple economy.
- Explains the basic factors of consumption functions in a simple economy.
- Analyses of the basic factors of saving function in a simple economy.
- Presents the consumption function and saving function with equations, graphs and schedules.
- Computes the equilibrium of a simple economy with schedules, graphs and equations.

Guidelines for the explanation of subject matter:

- Aggregate income (Y) and aggregate expenditure (E) are equal in macroeconomic equilibrium.
- This can be illustrated through two approaches.
 - Income and expenditure approach
 - Withdrawers and injection approach
- Income and expenditure approach illustrates the equilibrium in a simple economy as, Aggregate income= Aggregate expenditure

$$Y = E$$

- In a simple economy the determinants of aggregate expenditure (E) are Private consumption expenditure and investment expenditure
- It can be illustrated with the following equation

$$E = C + I$$

- Aggregate income is utilized for consumption expenditure and savings in a simple economy
- It can be illustrated with the following equation.

$$Y = C + S$$

- With withdrawers and injections approach, the equilibrium in a simple economy can be illustrated as follows

$$Y = C+S$$

$$E = C+I$$

$$Y = E$$

$$C+S = C+I$$

$$S = I$$

- Savings are withdrawers (W) and investments as the injections (J). Therefore withdrawals and injections are equal in the equilibrium.

- The consumption function can be illustrated as follows.

$$C = a+by_d$$

C = Consumption

a = autonomous consumption

b = Marginal propensity to consume

y = Disposable income

- Autonomous consumption is determinants independent of current income.
- Marginal propensity to consume shows the fraction of change income which is consumed.
- It can be calculated as follows

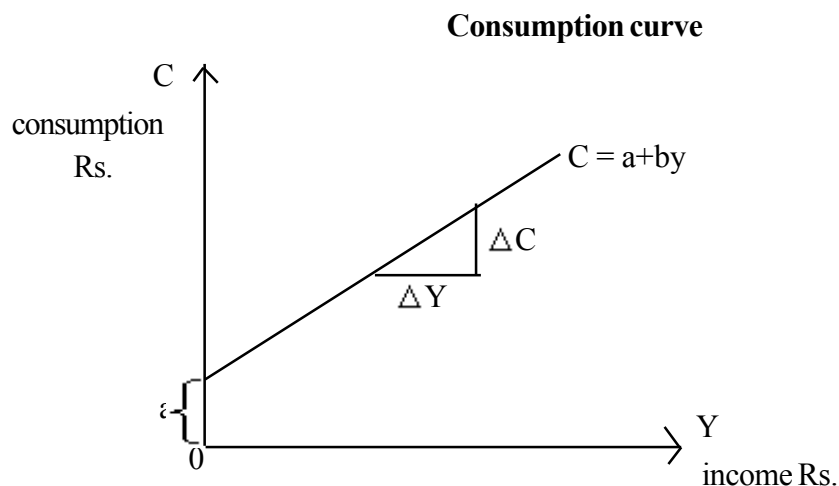
$$\text{MPC} = \frac{\Delta C}{\Delta Y}$$

b = Marginal propensity to consume (MPC)

Δc = Change in consumption

Δy = Change in income

- The consumption function can be illustrated with a graph.



- Saving function also can be illustrated as

$$S = -a + (1-b) yd$$

S = Savings

-a = autonomous savings

(1-b) = Marginal propensity to save (MPS)

- Marginal propensity to save shows that a fraction of change in income which is saved.
- It can be calculated as

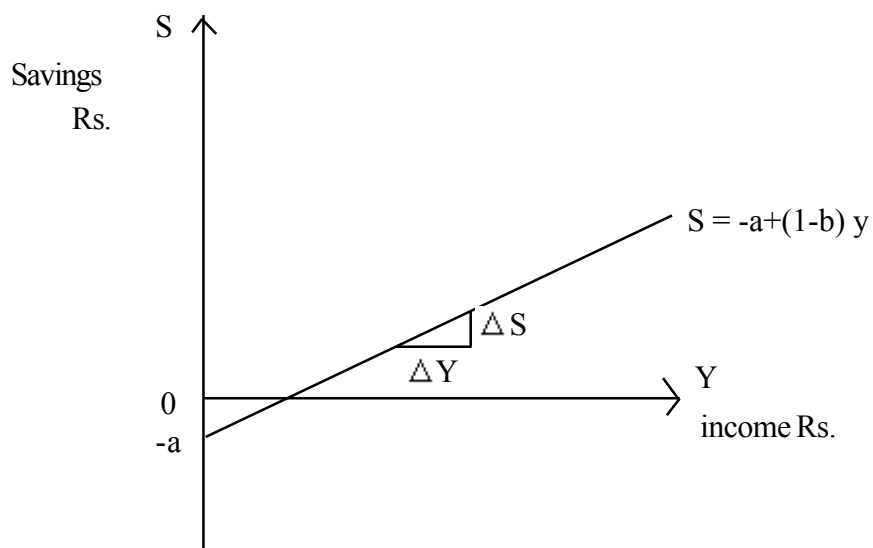
$$\text{MPS} = \frac{\Delta S}{\Delta Y}$$

ΔS = Change in savings

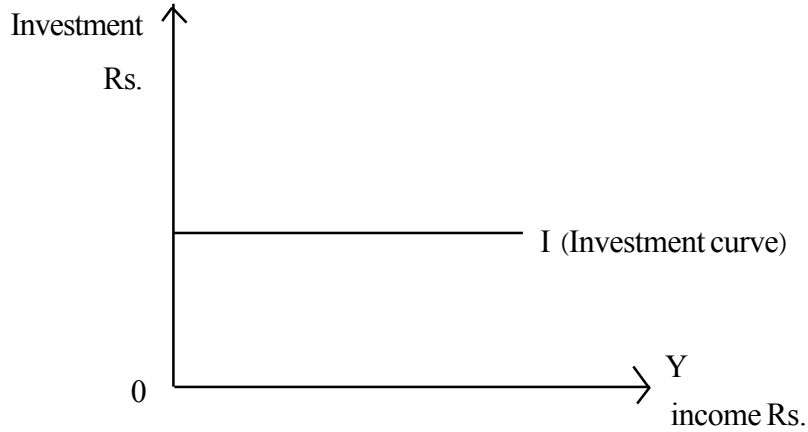
ΔY = Change in income

MPS = Marginal propensity to save

- Saving function also can be illustrated graphically.



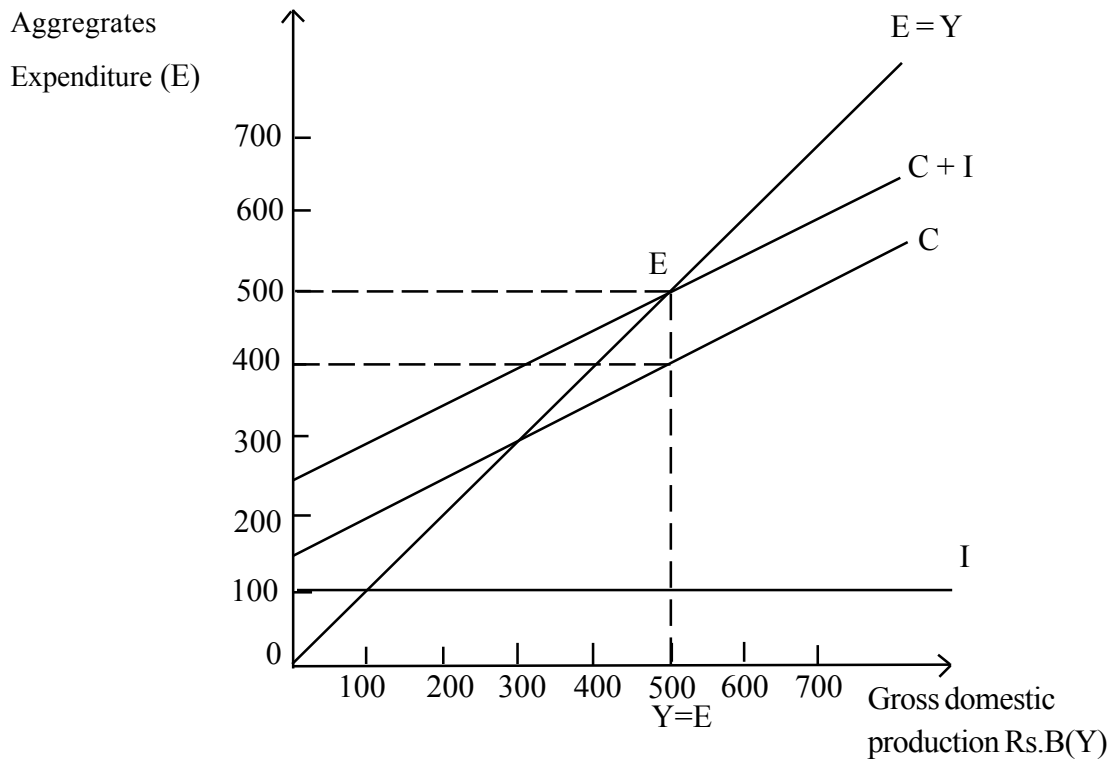
- Assuming that though the income is changed, the investment is constant in a simple economy
- According it, the investment can be shown as



- Equilibrium in a simple economy can be computed with,
 - a schedule
 - graphical presentation
 - Equations
- Equilibrium can be calculated with a schedule in a simple economy

Output (Y)	Consumption expenditure (C)	Savings (S)	Investment Expenditure (I)	Aggregate Expenditure	Difference between output and Expenditure
200	250	(-50)	100	350	(-150)
300	300	0	100	400	(-100)
400	350	50	100	450	(-50)
500	400	100	100	500	0
600	450	150	100	550	50
700	500	200	100	600	100
800	550	250	100	650	150

- The equilibrium of a simple economy can be computed graphically



- According to the diagram, national Income is illustrated with the point E.
- The equilibrium in a simple economy can be calculated with the graph and equations also.

Competency Level :5.3 Demonstrates the changes in equilibrium level of income due to aggregate expenditure components using the multiplier process.

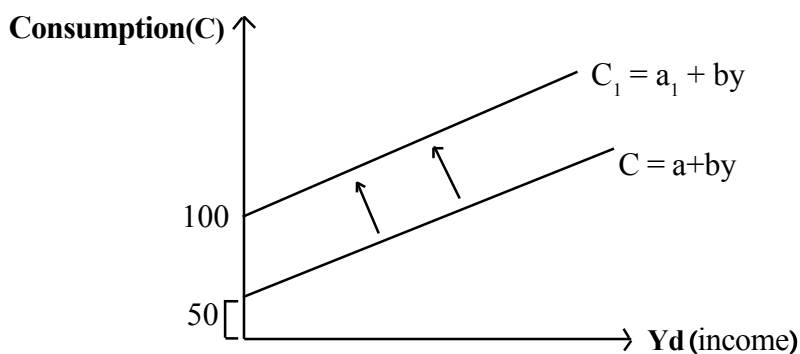
Number of periods: 06

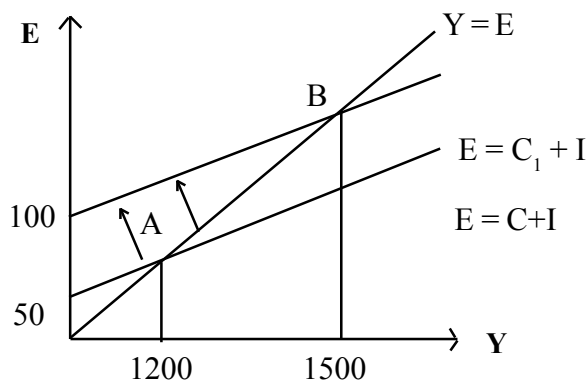
Learning outcomes:

- Names the factors which influence change in the equilibrium of a simple economy.
- Presents the reasons to change the consumption function.
- Explains how the equilibrium is changed with change in the consumption function.
- Explains how the equilibrium is changed with the change in investment expenditure.
- Introduces the multiplier effect of a simple economy.
- Illustrates the multiplier effect with a schedule and an equation.
- Describes the situations where equilibrium income depends on full employment level and the other situations which are not.

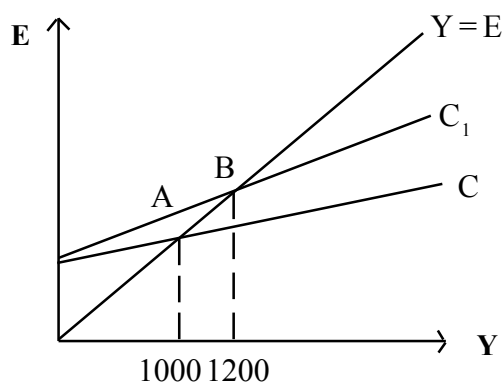
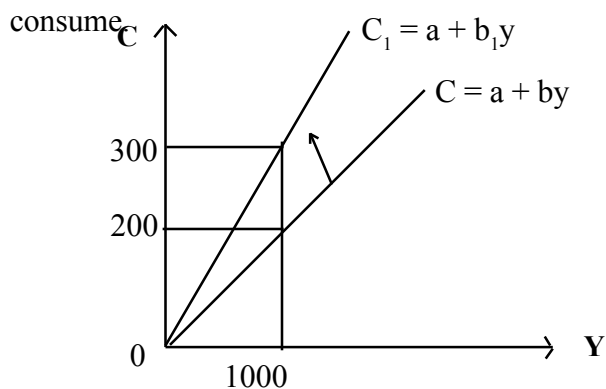
Guidelines for the explanation of subject matter:

- Change in equilibrium in a simple economy depends on the following components.
 - Change in consumption function.
 - Change in investment.
- Change in consumption function depends on two factors.
 - Change in autonomous consumption
 - Change in Marginal Propensity to consume (M.P.C)
- Change in consumption function can be illustrated with the change in autonomous consumption.



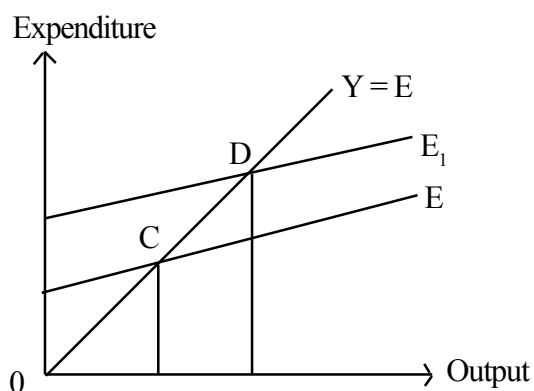
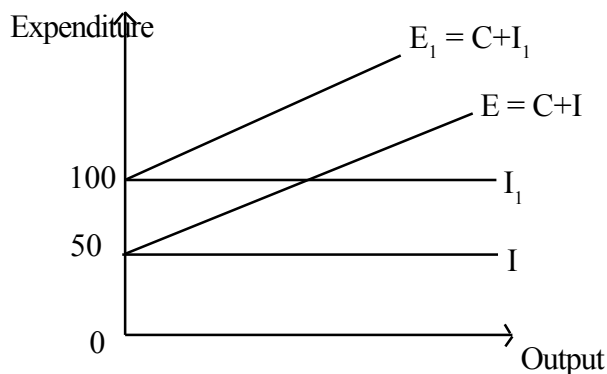


- According to the above diagram, the consumption function has changed due to the change in autonomous consumption.
- The aggregate expenditure curve has also shifted due to the change in consumption curve.
- The equilibrium output level has also changed.
- The equilibrium level can be changed with the change in Marginal Propensity to



- The slope of the consumption curve is changed because of change in marginal propensity to consume.

- Slope of Aggregate expenditure is also changed with the slope of consumption curve.
- The equilibrium level has also changed. In a simple economy, the equilibrium level has also changed due to change in investment.



- Investment curve is changed due to change in investment.
- When investment curve is changed, the expenditure curve also will be changed.
- Therefore the equilibrium level of output also will be changed.
- Because of the change in autonomous expenditure, the influence to change the output is explained as the multiplier effect. (K)
- The change in the autonomous expenditure of a simple economy, that is the autonomous consumption and autonomous investment influence the multiplier effect.
- Multiplier in a simple economy can be computed as follows.
- Multiplier in a simple economy = K
 Multiplier in a simple economy $K = \frac{1}{(1-b)}$
- b= Marginal Propensity to consume

- This can be explained with a simple example.

change in autonomous expenditure causes to change the output

This can be illustrated with the multiplier.

$$\Delta Y = \frac{1}{(1-b)} \times \Delta I$$

ΔY = Change in income =

ΔI = Change in autonomous investment

- Change in output is computed with a multiplier when autonomous expenditure is changed.
- This is explained with the following example.
- Assuming Marginal Propensity to consume is 0.75 when investment (I) is increased from 50 to 100.

- Change in output is,

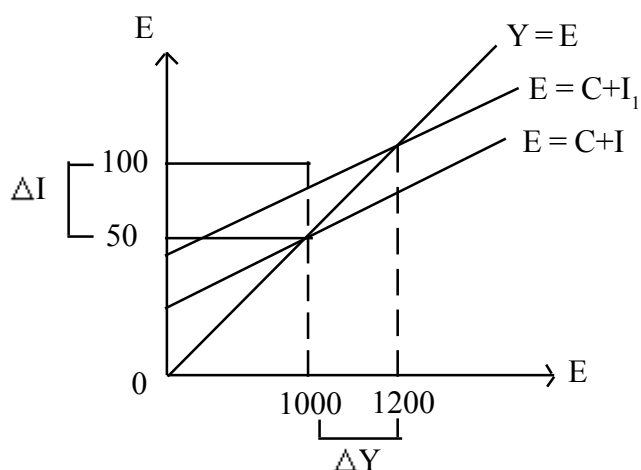
$$\Delta Y = \frac{1}{(1-b)} \times \Delta I$$

$$\Delta Y = \frac{1}{(1-0.75)} \times (100-50)$$

$$\Delta Y = 4 \times 50$$

$$\Delta Y = 200$$

- This can be illustrated with the following diagram.



- Multiplier effect can be also explained with a statistical table example.
- Equilibrium level of output depends on a level of full employment or outer.

Competency Level :5.4 Investigates the determination equilibrium in a closed economy.

Number of periods: 06

Learning outcomes:

- Explains the components of calculating the equilibrium in a closed economy
- Presents the calculations of equilibrium in a closed economy
- Analyses the elements of a consumption function in a closed economy
- Analyses the elements of a savings function in a closed economy
- Explains the role of autonomous taxes in a closed economy.
- Names and explain the parts of government expenditure in a closed economy
- Exhibits and computes the equilibrium of a closed economy with statistical tables, graphs and equations.

Guidelines for the explanation of subject matter:

- When government intervenes in a simple economy, it is termed a closed economy
- Therefore, the aggregate income and expenditure components include Taxes(T), Government purchases(G) and transfers(Tr).
- Only autonomous taxes are considered as taxes.
- The following components are used to compute the equilibrium in the economy.
 - Consumption (C)
 - Savings(S)
 - Autonomous taxes (T)
 - Government Purchases (G)
 - Transfers (TR)
 - Investment (I)
- The equilibrium can be explained with two approaches.
 - Income and expenditure method.
 - Withdrawals and Injections method.
- Aggregate expenditure in a closed economy can be explained as the sum of private consumption expenditure (C) Investment (I) and government purchases.

- It can be shown with the following equation.

$$E = C+I+G$$

$$\text{If } Y = E$$

$$Y = C+I+G$$

- Aggregate income (Y) in a closed economy equal the sum of expenditure on private consumption (C) Personal savings (S) and Autonomous taxes (T).
- It can be illustrated with the equation.

$$Y = C+S+T$$

- Equilibrium in the closed economy can be shown through the withdrawals and injections method as,

$$E = C+I+G$$

$$Y = C+S+T$$

$$Y = E$$

$$C+I+G = C+S+T$$

$$I+G = S+T$$

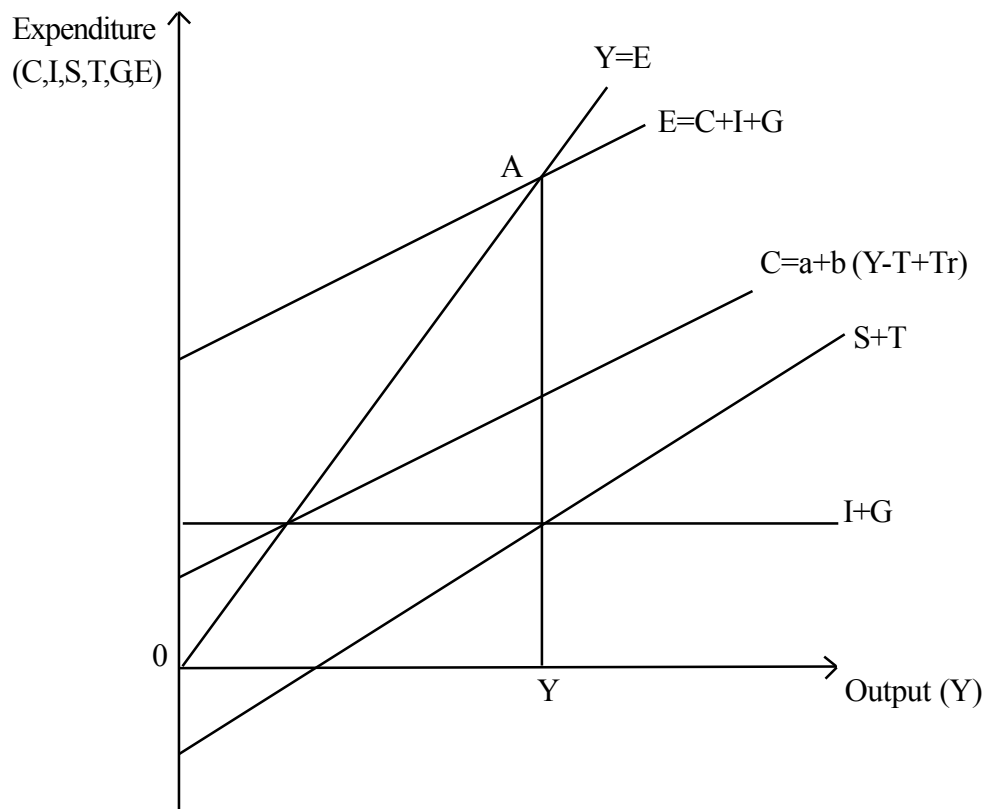
- Illustrates (S) Savings and illustrates (T) Autonomous taxes. illustrates (I) Investment and is the (G) Government purchases.
- The consumption function in a closed economy can be illustrated as,

$$C = a+b(Y-T+TR)$$
 - a = Autonomous consumption
 - b = Marginal Propensity to consume
 - T = Autonomous taxes
 - TR = Transfers
- The equilibrium in a closed economy can be illustrated in the following ways.
 - With a statistical table
 - With graphical presentation
 - With equations

- The equilibrium in a closed economy is calculated based on statistical schedule.

Output (Y)	Con.Exp. (C)	Savings (S)	Auto. taxes (T)	Invest. (I)	Gov. Exp. (G)	Aggre. Exp. (E)	Difference behaviour
	460			45	95		(-15)
585	500	115	10	45	95	600	(-10)
630	540	120	10	45	95	640	(-5)
675	580	125	10	45	95	680	0
720	620	130	10	45	95	720	5
765	660	135	10	45	95	760	10
810	700	140	10	45		800	15
855		145	10			840	

- The equilibrium in a closed economy can be illustrated graphically.



- According to the above diagram point 'A' illustrates the equilibrium.

Competency Level 5.5 Investigates determination equilibrium in an open economy decides.

Number of periods: 06

Learning Outcome:

- Explain the components or the computation of the equilibrium in a closed economy.
- Show the equilibrium conditions of a closed economy.
- Exhibit the equilibrium in the closed economy by computing with equations and statistics.

Guidelines for the explanation of subject matter:

- When a closed economy is open to the foreign sector, it is called an open economy.
- The components that are used to compute the equilibrium in an open economy are as follows.
 - Consumption (C)
 - Savings (S)
 - Investment (I)
 - Government purchases (G)
 - Transfers (Tr)
 - Autonomous taxes (T)
 - Imports (M)
 - Exports (X)
- Equilibrium in an open economy can be explained through two approaches.
 - Income and expenditure approach
 - Withdrawals and Injections approach
- According to the income and expenditure method, equilibrium in open economy can be calculated as follows.

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

- Equilibrium in an open economy also can be calculated using the withdrawals and Injections method.

$$\text{Withdrawals} = S + T + M$$

$$\text{Injections} = I + G + X$$

$$W = J$$

$$S + T + M = I + G + X$$

- Savings (S), autonomous taxes (T) and Imports (M) are considered as withdrawals.
- Investment (I) Government purchases (G) and Exports (X) are considered as injections.
- Equilibrium in an open economy can be presented with a statistical table and graphically.

School Based Assessment

Introduction- School Based Assessment

Learning –Teaching and Evaluation are three major components of the process of Education. It is a fact that teachers should know that evaluation is used to assess the progress of learning – teaching process. Moreover, teachers should know that these components influence mutually and develop each other .According to formative assessment (continuous assessment) fundamentals; it should be done while teaching or it is an ongoing process. Formative assessment can be done at the beginning, in the middle, at the end and at any instance of the learning teaching process.

Teachers who expect to assess the progress of learning of the students should use an organized plan. School Based Assessment (SBA) process is not a mere examination method or a testing method. This programme is known as the method of intervening to develop learning in students and teaching of teachers. Furthermore, this process can be used to maximize the student’s capacities by identifying their strengths and weaknesses closely.

When implementing SBA programmes, students are directed to exploratory process through Learning Teaching activities and it is expected that teachers should be with the students facilitating, directing and observing the task they are engaged in.

At this juncture students should be assessed continuously and the teacher should confirm whether the skills of the students get developed up to expected level by assessing continuously. Learning teaching process should not only provide proper experiences to the students but also check whether the students have acquired them properly. For this, to happen proper guiding should be given.

Teachers who are engaged in evaluation (assessment) would be able to supply guidance in two ways. They are commonly known as feed-back and feed- forward. Teacher’s role should be providing Feedback to avoid learning difficulties when the students’ weaknesses and inabilities are revealed and provide feed-forward when the abilities and the strengths are identified, to develop such strong skills of the students.

Student should be able to identify what objectives have achieved to which level, leads to Success of the Learning Teaching process. Teachers are expected to judge the competency levels students have reached through evaluation and they should communicate information about student progress to parents and other relevant sectors. The best method that can be used to assess is the SBA that provides the opportunity to assess student continuously.

Teachers who have got the above objective in mind will use effective learning, Teaching, evaluation methods to make the Teaching process and learning process effective. Following are the types of evaluation tools student and, teachers can use. These types were introduced to teachers by the Department of Examination and National Institute of Education with the new reforms. Therefore, we expect that the teachers in the system know about them well

Types of assessment tools:

- | | |
|------------------------------|--------------------------|
| 01. Assignments | 02. Projects |
| 03. Survey | 04. Exploration |
| 05. Observation | 06. Exhibitions |
| 07. Field trips | 08. Short written |
| 09. Structured essays | 10. Open book test |
| 11. Creative activities | 12. Listening Tests |
| 13. Practical work | 14. Speech |
| 15. Self creation | 16. Group work |
| 17. Concept maps | 18. Double entry journal |
| 19. Wall papers | 20. Quizzes |
| 21. Question and answer book | 22. Debates |
| 23. Panel discussions | 24. Seminars |
| 25. Impromptus speeches | 26. Role-plays |

Teachers are not expected to use above mentioned activities for all the units and for all the subjects. Teachers should be able to pick and choose the suitable type for the relevant units and for the relevant subjects to assess the progress of the students appropriately. The types of assessment tools are mentioned in Teacher's Instructional Manuals.

If the teachers try to avoid administering the relevant assessment tools in their classes there will be lapses in exhibiting the growth of academic abilities, affective factors and psycho- motor skills in the students

Learning-Teaching Evaluation Plans

(1) Evaluation events :First terms, plan 01

(2) Competency levels

covered : 1.2, 1.4, 1.5, 1.6,1.7, 1.8 and 1.9

(3) Subject content related

to plan : • Nature of economics
• Needs, wants, goods and services
• Factor and factor productivity
• Scarcity and opportunity cost
• Production possibility curve

(4) Nature of plan : Assignment

(5) Objectives of plan : • Find the nature of economics
• Identify the difference between needs and wants.
• Present the features of factor
• Design Production Possibility curves according opportunity costs
• Present information using graphs, schedules and models

(6) Instructions for the implementation of the plan

Instructions for Teacher : • Inform the students at the beginning of competency level 1.1 that they should prepare an assignment at the end of competency level 1.9
• Inform students about the evaluation criteria.
• Prepare assignment subject contents follows,
• The methodology of economics
• Needs and wants
• Goods and services
• Scarcity and opportunity cost
• Production possibility curve

- Inform the student that the assignment should be creative.

Instructions to students : • Do the activities according to the instructions and guidance given by the teacher.

- Collect information related to your assignment.
- Submit the assignment to the teacher on the due date.

(7) Evaluation criteria : • Perfect fullness (including all the relevant information to the report)

- Comparing the information collected with the theories
- Following the teachers' instructions finalize within the scheduled time.
- Creativity of the assignment.

(8)Marks range

- | | |
|------------------|----|
| • Very good | 04 |
| • Good | 03 |
| • Satisfactory | 02 |
| • Should develop | 01 |

Learning-Teaching Evaluation Plans

(1) Evaluation events : Second term, plan 02

(2) Competency levels

covered : 1.10, 1.11 and 1.12

(3) Subject content related

to plan :

- Basic economic problems
- Economic systems
- Elements of Economic systems
- Criteria of classification of economic systems
- Different Economic systems

(4) Nature of plan :Debate

(5) Objective of plan :

- Presents facts creatively and rationally.
- Developing the speaking ability.
- Explain basic economic problems.
- Presents the criteria of classification of economic systems.
- Classify economic systems

(6) Instructions for the implementation of the plan

Instructions for Teacher :

- Inform the students at the beginning of competency level 1.10 that they should participate in a debate at the end of competency level 1.12
- Divide the students in the class into two groups.
- Give the following topic to the groups at the beginning of competency level 1.10 and inform them to prepare for a debate
 - The market economy is more suitable for solving basic economic problem than the command economy
 - The command economy is more suitable for solving basic economic problem than the market economy
- At the end of each competency level, instruct the student to relate the subject relevant to it to the debate
- Inform the student that the debate should be held in two specific periods, also inform them about the evaluation criteria.
- Give markets to students on the basis of the relative criteria while the debate is going on.

- Instructions to students:**
- Do the activities according to the instructions and guidance given by the teacher.
 - Collect information related to your topic.
 - Take decisions on appointing the group leader, time given to each member, number of opportunities etc, after discussing with the teacher.
 - Work as a team to win.
 - Be conscious of how marks awarded..

- (7) Evaluation criteria :**
- Presenting facts related to the topic and presenting the facts in an organized way.
 - Presenting ideas creatively and rationally.
 - Appropriate body movements and time management.
 - Breaking the arguments of the opposite team.
 - Working as a team and acting with enthusiasm.

(8)Marks range	• Very good	04
	• Good	03
	• Satisfactory	02
	• Should develop	01

Learning-Teaching Evaluation Plans

(1) Evaluation events :Second term, plan 03

(2) Competency levels

covered : 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.10, 2.11 and 2.12

(3) Subject content related

to plan : • Demand

- Law of demand
- Change in quantity of demand
- Change in demand
- Price elasticity of demand
- Price cross elasticity of demand
- Income elasticity of demand
- Supply
- Law of supply
- Change in quantity of supply
- Change in supply
- Price elasticity of supply

(4) Nature of plan : Questioning program.

(5) Objective of plan :

- Creates questions with specific answers.
- Prepare time questions related to demand, supply, elasticity of supply and demand.
- Adds new knowledge.
- Acts with team spirit.

(6) Instructions for the implementation of the plan

Instructions for the teacher :

- Inform the students at the beginning of the plan about instructions to competency level 2.1 and that the questioning program will be conducted at the end of competency level 2.11
- Inform students about the evaluation criteria.
- Divide the students in the class into two groups.
- Get the students to construct questions including relevant subject matter at the end of each competency level.
- Check the questions and answers written by the students and give feed back

- Inform the students that both groups should be prepared with 20 questions each with specific answer for the questioning program.
- Take necessary steps to avoid pursuing similar questions by both group. Tell them that each the groups should prepare more than 20 questions for this.
- Tell them that every member of the group should prepare at least one question.
- Get the students to prepare questions so as to measure the subject matter by using sources such as bank reports
- Conduct the questioning program between the two groups on a specific data fixed previously. (during two periods)
- Get the students to give appropriate marks for correct answers and ask them to record the marks.
- Give marks to students according to the criteria while the questioning program is going on.

- Instructions to students :
- Act according to the instructions and guidance given by the teacher.
 - All prepare as many questions as possible, including relevant subject matter.
 - Inform all the members of the group about the specific answers for those questions.
 - Try to get maximum marks in order to win..

- (7) Evaluation criteria :**
- Questions should be correctly prepared relating to the subject matter
 - Specific answers for the questions should be written
 - Should have specified the relevant task on the specific date.
 - Follow the teacher's instructions and participate.
 - Working as a team with cooperation.

- (8)Marks range**
- Very good 04
 - Good 03
 - Satisfactory 02
 - Should develop 01

Learning-Teaching Evaluation Plans

(1) Evaluation events :Second term - plan 04

(2) Competency levels

covered : 2.16, 2.17, 2.18, 2.19, 3.1, 3.2, 3.3, 3.4 and 3.5

(3) Subject content related

to plan :

- Taxes on goods and services
- Producer subsidies
- Price controls
- Production function
- Production cost
- Market structure
- Perfect competition

(4) Nature of plan : Group activities

(5) Objective of plan :

- Collects information through exploration
- Presents information through tables and graphs.
- Explains taxes on goods and services and its economic effects
- Explains Producer subsidies and its economic effects
- Explains Price controls and its economic effects
- Explains the difference in production cost and it's related concepts.
- Analyses production cost in the short run.
- Analyses the short run behaviour of a firm in perfect competition

(6) Instructions to implement the plan

Instructions for the teacher :

- Inform the students at the beginning of competency level3.5 that they should participate in a debate at the end of competency leve2.13
- Inform students about the evaluation criteria.
- Prepare topics according subject content

Examples

- Taxes on goods and services and its economic effects

- Price controls and its economic effects
- Production cost in the short run.
- Divide the students in the class into groups at the end of competency level 3.5 .
- Give the topics randomly and instruct them to prepare the assignment
- Inform the student that the assignment should be creative.

- Instructions to students :**
- Choose a formal organization in the area with the agreement of all the members of your group.
 - Engage in the group activity following the teacher's instructions.
 - Collect accurate data regarding the institute relevant to the fields named by the teacher.
 - Compare the collected information with the theoretical subject matter you had learnt.
 - Get every member of the group the opportunity to participate in the process of data collection and preparation of the report
 - Always work with the full co-operation of the group.
 - Submit the report to the teacher on the date he has announced

- (7) Evaluation criteria :**
- Perfectness fullness(including all the relevant information to the report)
 - Co-operation(working as a group in full co-operation)
 - Comparing the information collected with the theories
 - Following the teachers' instructions and finalizing within the scheduled time.
 - Creativity of the report.

- (8) Marks range**
- Very good 04
 - Good 03
 - Satisfactory 02
 - Should develop 01

Learning-Teaching Evaluation Plans

(1) Evaluation events :Third term, plan 05

(2) Competency levels

covered : 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7 and 4.8

(3) Subject content related

to plan : • Macro economic objectives
• Macro economic policies
• The circle flow of national income
• Preparation of national accounts according output, Income and expenditure approaches

(4) Nature of plan : Oral test

(5) Objectives of plan : • Improves the ability of speech
• Minimizes stage fright.
• Explains the Macro economic objectives and Macro economic policies
• Explains the various concepts of national accounts
• Prepares national accounts according output, Income and expenditure approaches

(6) Instructions for the implementation of the plan

Instructions for the teacher : • Inform the students at the beginning of competency level 4.1 that they should participate in a debate at the end of competency level 4.7

- Inform students about the evaluation criteria.
- Prepare topics accordingly subject contents

Examples

- Macro economic objectives
- Macro economic policies
- The circle flow of national income
- Preparation of national accounts according output approaches

- Preparation national accounts according income approach

- Preparation of national accounts according expenditure approaches

(If topics are not sufficient give other topics relevant to the competency)

- Give only a number of topics sufficient to the number of students in the class.
- Tell them of the students to prepare to speak two minutes on each topic.
- Tell the specific data on which the oral evaluation will be done.
- On the day of evaluation, five minutes before they start to speak make arrangement for students to randomly select the specific topic for each student.

Give marks according to the criteria while the student is speaking..

- Instructions to students :**
- Follow the instructions given by the teacher.
 - Prepare for all the topics given to you by the teacher. But, note that you have to speak on one topic only.
 - On the day of the evaluation, give a two minutes speech to the class on the randomly selected topic.

- (7) Evaluation criteria :**
- Presenting facts related to the topic.
 - Using the time period given.
 - Presenting sufficient subject matter.
 - Voice control and body movements when necessary.
 - Following the ethics and procedures that should follow at the beginning and end of the speech.

- (8)Marks range**
- | | |
|------------------|----|
| • Very good | 04 |
| • Good | 03 |
| • Satisfactory | 02 |
| • Should develop | 01 |

Learning-Teaching Evaluation Plans

(1) Evaluation events : Second term, plan 06

(2) Competency levels covered : 5.1, 5.2, 5.3, 5.4, 5.5 and 6.6

(3) Subject content related to plan :

- Macro economic equilibrium
- Aggregate demand and supply
- Components of aggregate demand
- Equilibrium in the simple economy
- Changing equilibrium in the simple economy
- The multiple process in a simple economy equilibrium
- Equilibrium in the closed economy
- Equilibrium in the open economy

(4) Nature of plan : Creating puzzles

(5) Objective of plan :

- Constructs questions which have specific answers.
- Work as a team.
- Explains the components of aggregate demand.
- Present conditions of equilibrium in a simple economy
- Explains the multiple process in a simple economy equilibrium
- Present conditions of equilibrium in the closed economy
- Present conditions of equilibrium in the open economy

(6) Instructions for the implementation of the plan

Instructions for the teacher :

- Inform the students at the beginning of competency level 5.1 that they have to create a puzzle at the end of competency level 5.5
- Inform students about the evaluation criteria.
- Divide students into four groups.
- Distribute the four topics, Simple economy equilibrium, Change in simple economy equilibrium, Closed economy equilibrium and Open economy equilibrium.

- Ask each group to create a cross word puzzle on therelevant topic according to the following conditions.
 - There should be 10 words down and 10 words across.
 - Can prepare the square net using one's discretion.
 - Puzzle terms should be directly related to the topic assigned to the group.
- Examine the puzzle terms and the puzzles of all the groups one week before the puzzles have to be submitted.
- Get each group to present their puzzles on a specified date (through two periods)
- Get the other groups to complete the puzzle.(Have it as a competition.)
- Give marks using evaluation criteria to each group which presents the puzzle.

- Instructions to students :**
- Do the activities according to the instructions and guidance given by the teacher.
 - All the students of the group should create at least one term of the puzzle.
 - Show them to the teacher the on the date proposed by the teacher and do the necessary adjustments.
 - Construct the puzzle creatively.

- (7) Evaluation criteria :**
- Answers to the puzzle should be related to the topic.
 - The puzzle should be constructed in order to achieve the objectives.
 - Following the teacher's instructions and finishing the activity within the given period.
 - Including the specified number of terms.
 - Creativity.

- (8)Marks range**
- Very good 04
 - Good 03
 - Satisfactory 02
 - Should develop 01

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