



**CERTIFIED PUBLIC ACCOUNTANT
FOUNDATION LEVEL 2 EXAMINATIONS
F2.2: ECONOMICS AND THE BUSINESS
ENVIRONMENT**

**DATE: THURSDAY, 31 MARCH 2022
MARKING GUIDE AND MODEL ANSWERS**

QUESTION ONE

Marking guide

a) LAVIDA Winery:

	<u>Marks</u>
i) Linear function for point (1) and (2); 2 marks for each	4
Distinction of Demand and supply function); 2 marks for each	4
ii) Market equilibrium and equilibrium quantity	
Value of equilibrium quantity	2
b) The law of diminishing marginal utility	
Correct Definition/Assumption of the law	1
Computation of marginal utility (8 computations)	2
Correct Graphical illustration	2
c) Five characteristics of indifference curves as per ordinal approach	
Five characteristics of indifference curve (1 Mark per correct answer)	5
Total Marks	20

Model answers

a) Given the following information recorded by the marketing manager of LAVIDA Winery:

i) The linear function for each of the points 1 and 2 given above can be obtained as follows:

1) When P=1500 Q=200 Bottles

And when P=925 Q=150 Bottles

2) When P=505 Q=20 Bottles

And when P=305 Q=40 Bottles

Where **P**: Price (FRW) and **Q**: Quantity

Form of linear equation for demand or supply is given by the following formula:

$P=a+bq$ **P**: Price **q**: quantity **a**: Constants **b**: slope

Function 1:

By substituting the above data on (1) in our equation, we obtain the following:

$$1500 = a + 200b \dots\dots\dots (i)$$

$$925 = a + 150b \dots\dots\dots (ii)$$

$$\begin{array}{r} a + 200b = 1500 \quad *(1) \\ a + 150b = 925 \quad *(4) \\ \hline 50b = 575 \end{array}$$

$$b = (575/50)$$

$$b = 11.5$$

Substitute the value of “b” in any of the above equations in (1), for value of “a”, we get:

$$1500 = a + 200(11.5)$$

$$a = -800$$

$$\text{Hence } P = -800 + 11.5q$$

Function 2:

By substituting the above data in (2) in our equation, we obtain the following:

$$505 = a + 20b \dots\dots\dots (i)$$

$$305 = a + 40b \dots\dots\dots (ii)$$

$$\begin{array}{r} a + 20b = 505 \quad *(1) \\ a + 40b = 305 \quad *(-1) \\ \hline -20b = 200 \end{array}$$

$$b = (-200/-20) \quad b = -10$$

Substitute the value of “b” in any of the above equations in (2), for value of “a”, we get:

$$a + 20(-10) = 505$$

$$a = 705$$

$$\text{Hence } P = 705 - 10Q$$

As per the law of demand, the demand function has a negative slope and hence its curve slopes downward due to a negative relationship between the price and quantity demanded. On the other hand, supply has a positive relationship with the price and hence, its function has a positive slope. Building on the above, these functions are differentiated as follows:

$$P = 705 - 10q: \text{ Demand function}$$

$$P = -800 + 11.5q: \text{ Supply function}$$

ii) Market equilibrium and equilibrium quantity are explained below:

Market equilibrium is the point where quantity demanded is equal to quantity supplied. In perfectly competitive markets the prices are determined through the interaction of the forces of demand and supply. Prices adjust upwards or downwards to achieve equilibrium. The corresponding price to the equilibrium point is the equilibrium price and the corresponding quantity is the equilibrium quantity.

$$\text{At equilibrium } 705 - 10q = -800 + 11.5q$$

$$-10q - 11.5q = -800 - 705$$

$$-21.5q = -1505$$

$$Q = (1505 / 21.5)$$

$$Q = 70 \text{ ***Equilibrium quantity}$$

b) By the help of a well labelled diagram using the information given, the law of diminishing marginal utility is explained as follows:

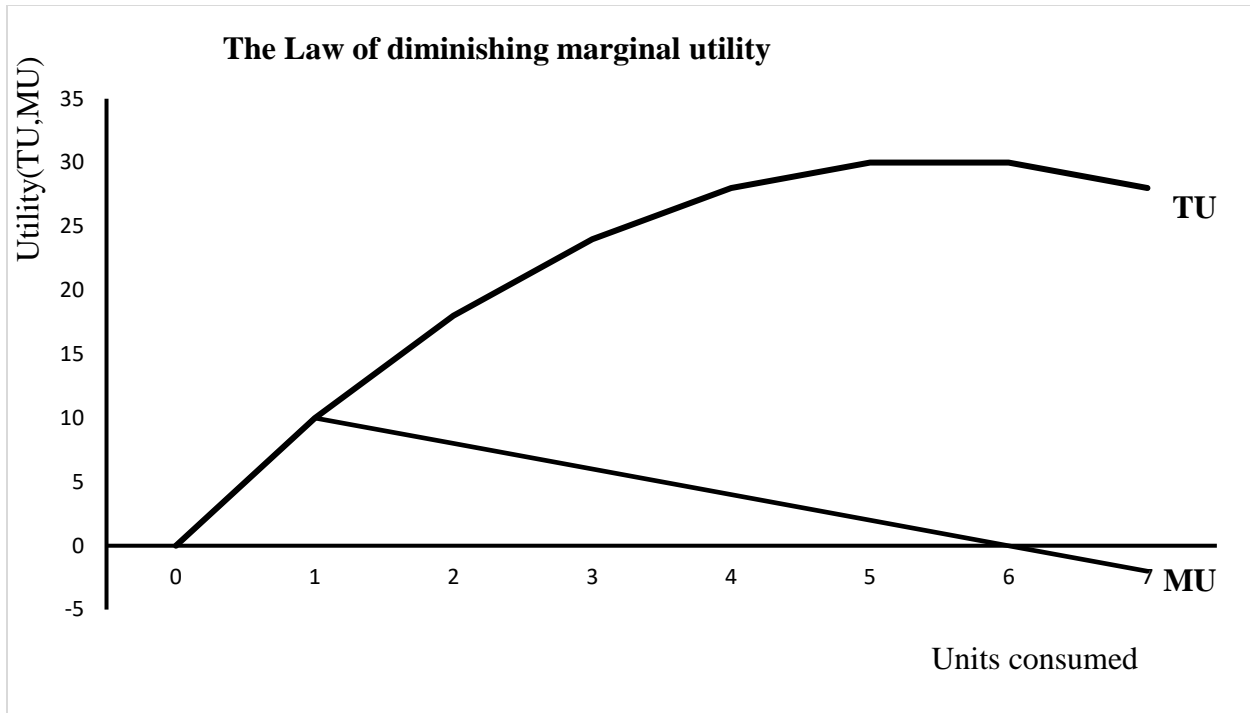
The law of diminishing marginal utility states that the marginal utility from each additional unit consumed declines as consumption increases. As the amount of a good, consumed increases, the marginal utility of additional units tends to decrease.

Example: The first glass of milk has very high utility. It will satisfy your thirst. The second has less utility because you are satiated by the first. The third is even less desirable.

Computation of marginal utility and graphical illustration of the law of diminishing marginal utility:

$MU = (\Delta TU / \Delta Q)$ ΔTU : Change in Total Utility MU : Marginal utility ΔQ : Change in quantity

Units	0	1	2	3	4	5	6	7
Total utility (TU)	0	10	18	24	28	30	30	28
Marginal Utility (U)	0	10	8	6	4	2	0	-2



c) Five characteristics of indifference curves as per ordinal approach:

An indifference curve is a graph linking all the combinations of two goods or two groups of goods which provide the same level of total utility for an individual, group of people or community. It is called an indifference curve because there is no preference for one combination over any of the others. All offer the same amount of utility or satisfaction, so that people are indifferent as to which combination they have.

Characteristics of indifference curves:

- i) Indifference curves are non-intersecting
- ii) They have a negative slope; they slope downward from left to the right
- iii) They are convex to the origin
- iv) The higher the indifference curve, the higher the level of satisfaction
- v) Indifference curves are parallel to one another
- vi) They never touch the axes

QUESTION TWO

Marking guide

a) Short run profit maximization for a firm under perfect competitions	Marks
-Theoretical explanation (Correct explanation)	2
-Diagrammatical illustration (2 marks for correct MC, AC, Price (AR) Curve)	4
b) The diminishing Marginal Productivity Theory	
-Computation of marginal product (10 computations)	3
-Theoretical explanation (Correct interpretation of the theory)	2
-Graphical illustration (1 Mark for correct AP, MP, TP curves each)	3
c) Six factors affecting the demand of a factor of production	6
Total Marks	20

Model answers

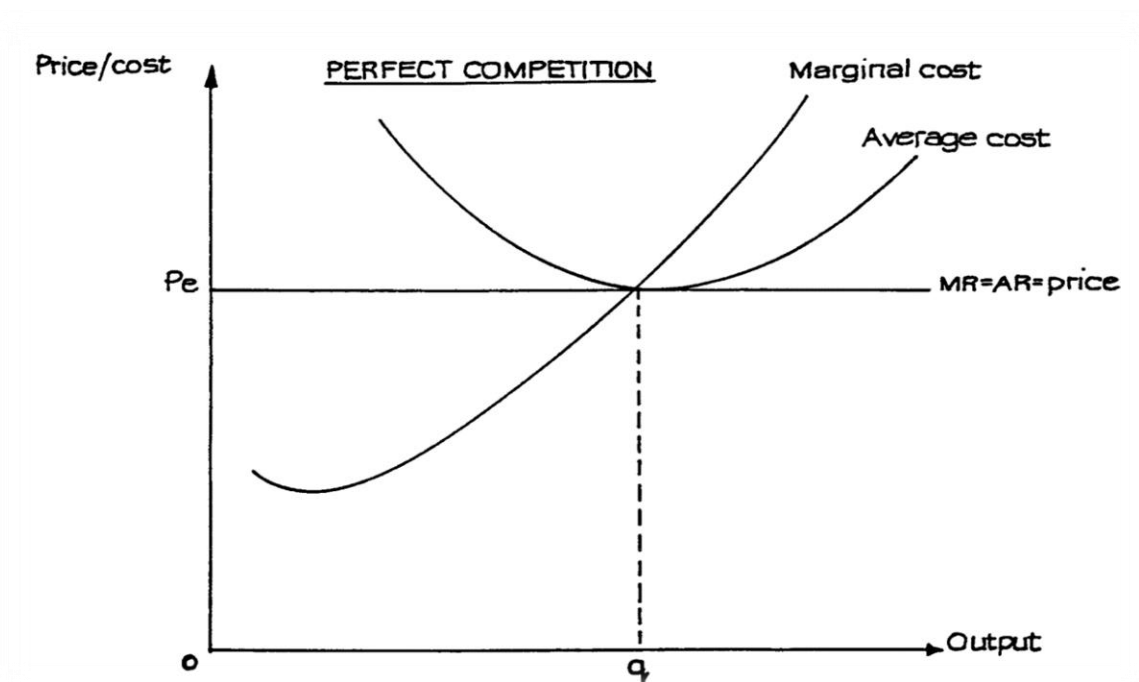
a) Short run profit maximization for a firm under perfect competitions:

Perfect competition is the state of affairs existing in a market totally free from imperfections in the communication and interaction of the economic forces of supply and demand.

In a perfect competition market, in short run a firm maximizes profit when the Marginal cost (MC) equals the Marginal revenue (MR) at the highest level of output. This time the Average revenue or the price is constant because of competition. Any production beyond this level makes the firm to make losses because Marginal cost would be greater than marginal revenue.

$MR=MC$ at the highest level of output

- Graphical illustration:



b) The diminishing Marginal Productivity Theory

The marginal productivity theory is based on the law of diminishing marginal returns also called the law of variable factor proportions. The law explains the relationship between inputs and output in the short run. It states that "as you add more and more successive units of a variable factor to a fixed factor, after a certain point, the Marginal product of the variable factor diminishes(decreases).

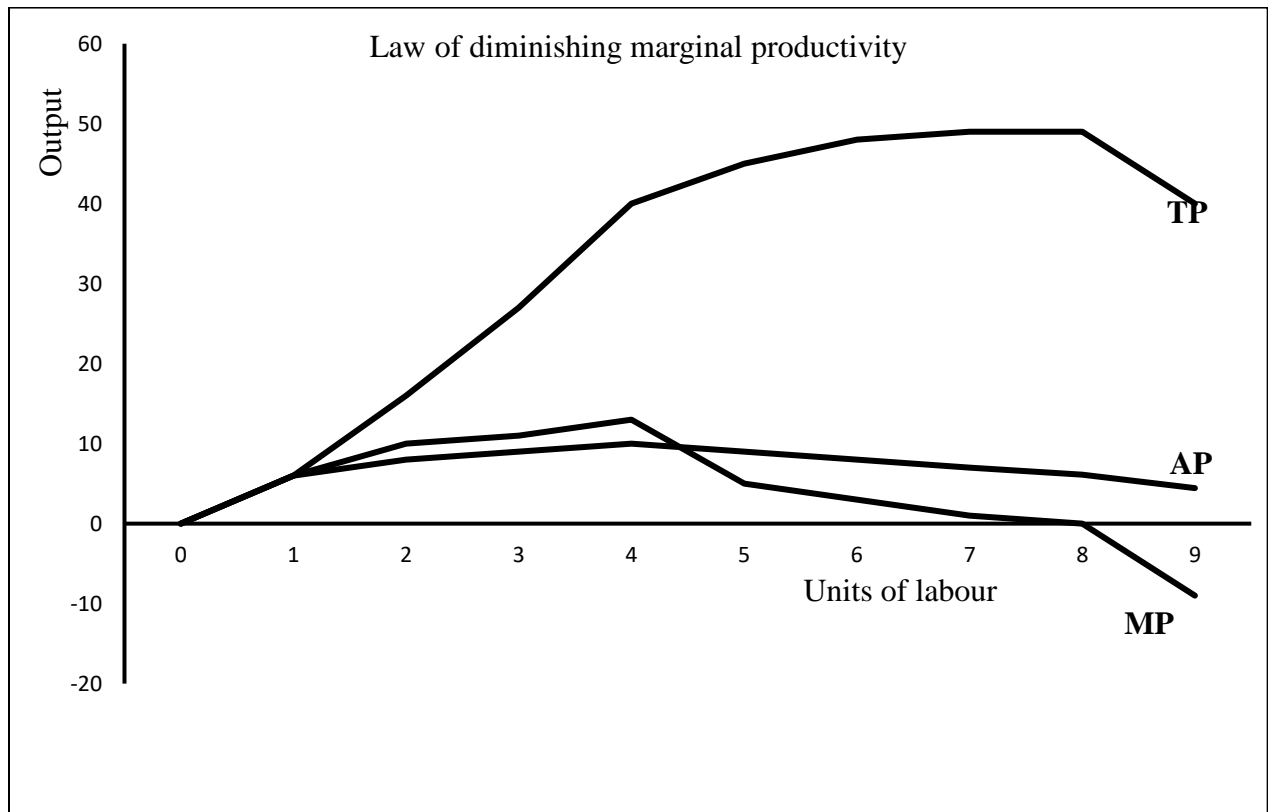
This theory has the following assumptions:

- The presence of a fixed factor of production
 - The constant level of technology
 - Factors of production are equally efficient
 - Factors of production are easily divisible and vary in proportions in which they are combined
- The theory of diminishing marginal productivity is important when firms are determining the proportions of variable factors which combine with fixed factors to yield the maximum output.

Graphical Illustration using the information given:

$$MP = (\Delta TP / \Delta Q)$$

Number of workers	0	1	2	3	4	5	6	7	8	9
Total Product (TP)	0	6	16	27	40	45	48	49	49	40
Average Product (AP)	0	6	8	9	10	9	8	7	6.1	4.4
Marginal Product (MP)	0	6	10	11	13	5	3	1	0	-9



Interpretation: From the above diagram, It is clear that the marginal product of labour diminishes as more and more labour is added.

c) Six factors affecting the demand of a factor of production:

Factors of production refers to the inputs to the production process. They include land, labour, capital and entrepreneurship. The following are the factors affecting the demand of of a factor of production:

- The price of the factor of production, the higher the price, the lower the demand
- The level of demand of the product of the factor e.g: If the demand of the output of the factor is high, it will also increase its production and hence the higher demand of the factor
- The level of economic performance in the country

- The government policy: if the government encourages investment, it will create a high demand for labour
- The nature of technology: Labour intensive technology creates a high demand for labour while capital intensive technology creates a high demand for capital
- The demand for substitutes of the factor of production, the higher the price of substitutes, the higher the demand of a factor of production.
- The skills required for the job: The higher the skills, the higher the demand of skilled labour

QUESTION THREE

Marking guide

	Marks
a) Four growth strategies available for B&M Builders Ltd (2 marks for each growth strategy and 2 marks for introduction)	10
b) Two causes of the principle-agent problem in B&M Builders Ltd (2 Marks for each cause and 2 marks for clear explanation, 2 Marks for relevant introduction)	10
Total Marks	20

Model answers

c) Four growth strategies available for B&M Builders Ltd are explained below:

M&M Builders Ltd as a construction company looking for growth strategies to serve the market of NYAMATA, GICUMBI and RUBAVU can choose from the following strategies:

i. Horizontal Growth

Horizontal growth can be achieved through horizontal integration which is the development into activities which are competitive with, or complimentary to, a company's present activities. Currently the company build and sell houses, the involvement in gardening business or other business complementary to their main activity would be a good strategy.

ii. Vertical growth

Vertical growth can be achieved through vertical integration which is the extension of a firm's competitive ability within the same industry. It involves expanding the company's range of activities backwards into sources of supply and / or forwards towards end users of the final product. B&M can achieve vertical integration through two methods;

-It can start its operations in the other stages in the industry's activity

-It can acquire a company already performing these activities

iii. Diversified growth

A diversification strategy depends upon a company's growth opportunities in its present industry and it also depends on the available opportunities to utilize its resources and capabilities in other market areas.

M&M Can diversify through one of two ways:

- Related markets – through vertical integration strategies
- Unrelated markets – this is where B&M Can act as a 'holding company' by operating in areas where its detailed knowledge of the key factors for success is limited.

iv. Growth by mergers

Mergers are similar to acquisitions in the sense of two companies combining. However, mergers usually arise because neither company has the ability to acquire the other on its own. B&M also should consider this strategy.

d) Four causes of the principle-agent problem in B&M Builders Ltd are explained below:

The principal – agent theory helps to understand the principle agent problem. It is the theory of devising compensation rules that induce an agent to act in the best interests of a principal. Agents, whether they are managers or workers, pursue their own goals and often impose costs on a principal. The principle agent problem arise when the shareholders and management objectives are not in alignment. Below are the probable causes of principal agent problems in B&M:

- Conflict of interests between B&M shareholders and company's management: The management of B&M Builders Ltd might be having different business objectives and consequently they fail to implement the wish of shareholders.
- Asymmetric information: the agent of B&M has much information than the principle. The shareholders cannot observe the day to day decisions of management. The owners of B&M consequently cannot ensure directly that the management of B&M is working in their best interests.
- Conflicts of interests between majority and minority shareholders
- Conflicts of interests between owners and other contractors

QUESTION FOUR

Marking guide

QUESTION FOUR

Marks

- a) Differentiation of a closed economy from an open economy (1 Mark) for each correct difference and 1 mark for each aggregate demand formula) 4
- b) Two characteristics of each stage of business cycle are given below:
-Four phases of economic cycle (Mandatory to be cited for easy classification)
-Two Characteristics of each phase (1 for each characteristic) 8
- c) Short notes on the Keynesian theory of income and employment (2 Marks for correct explanation of the theory, 2 Marks for Showing the aggregate demand formula and 1 Mark for explaining (detailing) the component of aggregate demand function) 8

Total Marks

20

Model answers

a) Differentiation of a closed economy from an open economy

A closed economy refers to an economy that has no trading activity with outside economy. In a closed economy, there is no exports or imports in any way. The key players in a closed economy include households, firms and the government. The aggregate demand of a closed economy is shown below:

There are three components of aggregate demand (AD) in the closed economy:

$$AD = C + I + G$$

Where: AD: Aggregate demand G: Government expenditure C: Consumption I: Investment

On the other hand, an open economy is the one that interacts with others where exports and imports are made.

The formula of aggregate demand (AD) in the open economy is given below:

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

Where: (X-M): Exports minus imports

b) Two characteristics of each stage of business cycle are given below:

A business cycle is a continual sequence of rapid growth in national income, followed by a slow-down in growth and then a fall in national income (recession) which eventually changes back to growth and so on.

A trade cycle or business cycle has four phases as given below:

Business cycle/Phase	Characteristics
Depression	<ul style="list-style-type: none">-Heavy Unemployment-Low consumer demand-Over Capacity (unused capacity in production) –-Prices stable, or even falling-Business Profits are Low-Business Confidence in the future is Low
Recovery	<ul style="list-style-type: none">-Investment picks up-Employment rises-Consumer spending rises-Profits rise-Business Confidence Grows-Prices stable, or slowly rising
Boom	<ul style="list-style-type: none">-Consumer Spending Rising fast-Output capacity reached: labour shortages-Investment spending is high.-Increases in demand now stimulate price rises-Business Profits are high
Recession	<ul style="list-style-type: none">-Consumption falls off-Many investments suddenly become unprofitable and new investments falls-Production falls-Employment falls-Profits fall, some businesses fail-Recession can turn into severe depression

c) Short notes on the Keynesian theory of income and employment:

The Keynesian theory of income and employment put forward a simple but persuasive explanation regarding the determination of output and employment in the economy. The level of output firms will be willing to produce, he argued, is determined by the aggregate demand (AD)

for goods and services in the economy. The level of output firms are willing to produce will, in turn, determine the level of employment. The level of aggregate demand drives the economy.

If total demand in the economy were to rise, firms would wish to produce more and therefore they would be offering more employment. If total demand were to fall, firms would have accumulating unsold stocks leading them to cut production and employment. If we wish to know why the levels of output and employment tend to fluctuate, according to Keynes, the explanation is to be found in fluctuations in the level of aggregate demand.

According to this theory, aggregate demand is given by:

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

Where; **(X-M)**: Exports minus imports **AD**: Aggregate demand
G: Government expenditure **C**: Consumption **I**: Investment

QUESTION FIVE

Marking guide

	Marks
a) Three motives of holding money as per Keynesian Theory; 2 each	6
b) Six effects of raising an interest rate by microfinances; 1 each	6
c) Eight roles of commercial banks in Rwanda; 1 each	8
Total Marks	20

Model answers

a) Three motives of holding money as per Keynesian Theory:

The demand(holding) for money is concerned with the willingness of people to hold non interest-earning cash. Besides being a medium of exchange, money functions as a store of value – this is referred to as the asset function of money. To hold money is to express a preference for liquidity rather than less liquid interest-earning assets. The Keynesian approach to money demand is known as the theory of liquidity preference.

Keynes advanced three motives for holding cash as explained below:

1) Speculative motive

People hold money for earning income through speculation. This depends on the rate of interest. The speculative motive stems from the desire to avoid capital losses. Keynes suggested that

there would be a tendency to switch out of interest-earning assets and into cash if there was a danger of incurring capital losses on these assets. The key to this analysis is the relationship between market rates of interest and the market value of fixed interest securities.

2) Precautionary motive

Individuals and businesses hold money in anticipation on unforeseen circumstances or to take advantage of future opportunities. The precautionary motive for holding cash balances stems from the unpredictability of some transactions. People will hold cash balances just in case a need arises. As with transactions balances, the level of precautionary balances is likely to be primarily influenced by the level of income.

3) The transaction motives

People demand money for transactions purposes. The level of transaction depends on the level of income. The transactions motive stems from the fact that peoples' income and expenditure are not perfectly synchronized. For many people income is received periodically in a lump sum whereas expenditure is a continuous flow. People will tend to hold cash to meet ongoing expenditures. As the level of expenditure of an individual will be positively linked to the level of income, it is reasonable to assume that the desired level of cash balances for transactions purposes will be positively linked to the level of income.

b) six effects of raising an interest rate by microfinances

Interest rate is the rate at which interest is paid by borrowers for use of money that they borrow from a lender. It is a cost of borrowing. Interests rates are usually expressed as a percentage of the principal for a period of one year.

Higher interest rate will have the following economic effects:

1. Higher interest rates increase the cost of borrowing and discourages borrowers
2. It results into currency appreciation and makes exports less competitive
3. Higher interests rate increases incentives to save in deposits account than spending
4. They increase the value of exchange rate in a country where interest rate is high as many investors prefer to save in that country for good returns
5. Higher rate of interest discourages consumers and firms which results into economic fall in consumption and investment
6. Higher interest rates increase the cost of government interest payment which could lead to higher taxes in the future
7. It discourages firms and consumers to take risky investment and purchases

Therefore, higher interest rates will tend to reduce consumer spending and investment which will lead to a fall in aggregate demand.

c) Eight roles of commercial banks in Rwanda

Commercial Banks are financial institutions which carry out all kinds of ordinary banking operations such as; accepting deposits, advancing loans, safe keeping of money and other banking services. Commercial banks are controlled by the central bank.

Roles/Functions of commercial banks in Rwanda:

- They provide safe deposit for money
- They maintain different accounts on behalf of customers (i.e. Current, saving and fixed term deposits)
- They provide safe and non-inflationary means for making payments through the use of cheques
- They act as agents of central bank in dealings involving foreign exchange and domestic lending on instructions from the central bank
- They create credit through credit creation process thus enabling people access credit
- They act as agents of stock exchange enabling people to buy and sell shares with ease
- They exchange currencies for customers
- They facilitate international trade by selling travelers cheques
- They give financial advice to customers on business and money

QUESTION SIX

Marking guide

	Marks
a) Four causes of rivalry in perfect competition market; 1 each	4
b) Eight factors affecting the supply of a commodity are explained below: 1 each	8
c) Price determination in a perfect competition market	
-Theoretical explanations (2 for explaining the perfect competition market,2 for explaining the equilibrium situation)	4
-Graphical illustration (1 Mark for supply curve,1 mark for demand curve,1 mark for showing equilibrium quantity and 1 for equilibrium price)	4
Total Marks	20

Model answers

a) Four causes of rivalry in perfect competition market

Perfect competition market is market structure with many firms selling identical production to many buyers. Since the firms sell identical products there is rivalry for buyers. Below is the cause of rivalry in perfect competition market:

Causes of rivalry in perfect competition market are outlined below:

- Existence of many firms(sellers) of the same size
- Existence of homogenous products in the market
- There is a free entry and exit in the market
- No government intervention

b) Eight factors affecting the supply of a commodity are explained below:

The quantity supplied refers to the amount of a commodity producers are willing to bring to the market at various prices per period of time. Below are the factors affecting the supply of a commodity:

a. The price of a commodity

According to the law of supply, the higher the price, the higher the quantity supplied *ceteris paribus*. At high price, a commodity becomes more profitable to produce and sell.

An increase in price of a commodity leads to an increase in its supply. This because suppliers are motivated to supply more at higher prices. The quantity supplied is positively related to the price such that an increase in price will lead to an increase in quantity supplied.

b. Prices of other related goods

Ceteris paribus, When prices of competing commodities increase, it becomes more profitable to produce those competing commodities which fetch higher prices and profits and on the other hand when the prices of competing commodities fall, it will increase the supply of the commodity since it is more profitable to produce a commodity whose price is relatively high.

c. Cost of production/Price and Availability of factors of production

An increase in price of factors of production leads to an increase in cost of production hence a lower supply.

d. Level of technology

The more the use of modern technology the more the supply and vice versa.

d) Natural events e.g. climatic conditions

Natural events like weather, pests and floods affect supply of agricultural products. If weather conditions are favorable, the supply of agricultural products will increase. If weather conditions are unfavorable the supply of such products will fall.

e) Government policies

Sometimes the government may come with legislation that might affect supply. They include:

- **Taxes:** A tax increases the costs of production. It reduces the firm's profits hence discouraging production and thus a reduction in supply.
- **Subsidies:** A subsidy is an incentive to encourage production. It helps producers to lower their cost of production hence encouraging production and thus increase in supply
- **Quotas:** A quota is a restrictive quantity imposed by the government to discourage supply of imported goods. This thus leads to reduced supply

f) Number of producers

If there are many producers of a commodity, quantity supplied is likely to be higher than where there are few producers

g) Gestation period

Gestation period refers to the production period or the period of maturity. When gestation period of a commodity is short, supply becomes easy to increase in the shortest possible time. When gestation period is very long, the supply is low because it takes a long time to produce a commodity.

h) Non-Economic factors

These factors include political situations in the country. Political stability leads to increase in production and supply while political instability discourages production and leads to low supply.

i) Degree of freedom of entry of firms in production

When there is freedom of entry of firms in production (perfect competition) supply is likely to be high because it is difficult for firms to restrict supply so as to sell at high price. When a commodity is produced by a monopolist, its supply is likely to be restricted so as to sell at higher prices.

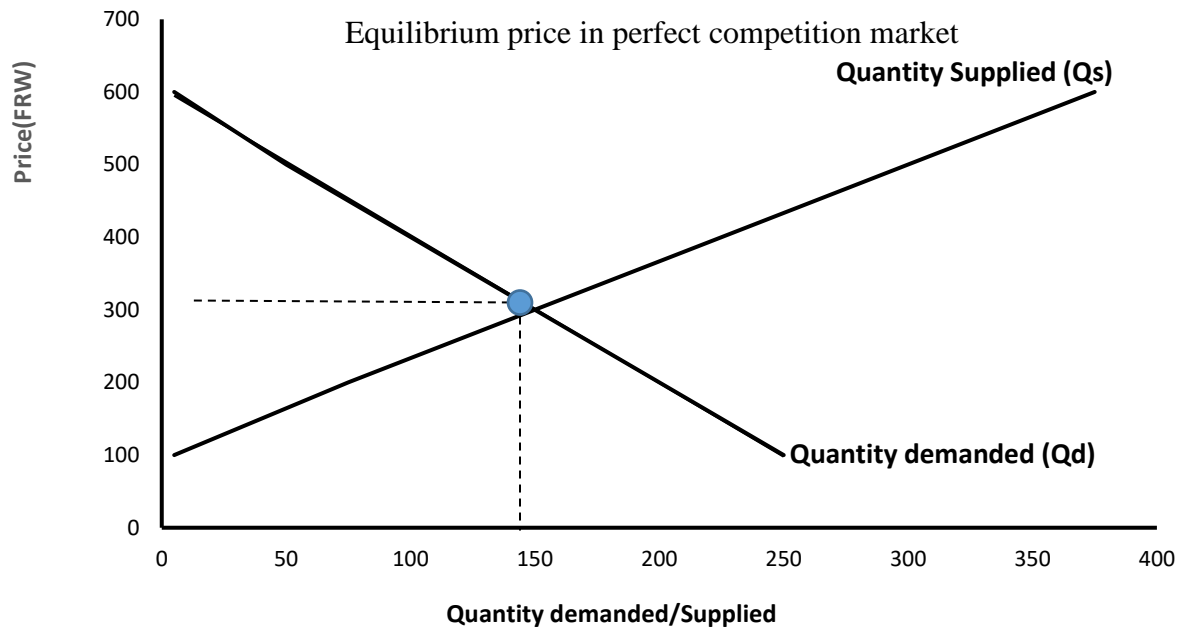
c) Using graphical illustrations, below is how the price is determined in a perfect competition market

A Perfect competition market is the market structure with many firms selling homogeneous products to many buyers. Since the firms sell identical products there is rivalry for buyers. In this market structure, a single buyer or seller is unable to influence the price. The price is determined by the interaction of the forces of demand and supply.

In a perfect competition market, a price of a commodity is determined at a point at which the demand and supply curve intersects and that price is called the **equilibrium price**. At this point the quantity demanded and supplied is called the **equilibrium quantity**.

Graphical illustration:

Price (FRW)	100	200	300	400	500	600
Quantity Demanded (kgs)	250	200	150	100	50	5
Quantity Supplied (kgs)	5	75	150	225	300	375



From this graphical illustration, our equilibrium price is FRW 300 where equilibrium quantity is 150 kgs.

QUESTION SEVEN

Marking guide

	Marks
a) Six negative effects of inflation on the economy; 1 each	6
b) Short notes on three measures of Controlling inflation; 2 each	6
c) Four assumptions of the theory of comparative advantage; 1 each	4
d) Four Factors responsible for wage differentials between occupations; 1 each	4
Total Marks	20

Model answers

a) Six negative effects of inflation on the economy

Inflation refers to a rise in the general price level. In simple terms, inflation is reflected in the decline in the value of money where it takes more money to buy things, below are negative effects of inflation:

Negative effects of inflation:

- Inflation attracts the hoarding of commodities instead of money which creates a shortage of hoarded commodities
- Distortion of commodities prices
- Increased risk-Higher uncertainties in business
- Inflation hurts existing lenders as the value of money they will receive from borrowers will be lower than the amount they gave before
- Fixed income earners are hurt as they still received fixed amount during inflation period
- Inflation lowers nation saving as people tend to spend money before its value decreases
- It causes currency debasement and sometimes a new currency can be introduced
- Inflation increases the price of imports as a result of currency debasement
- It lowers down country's exports as their products looks expensive on international market
- Higher prices attract increase of taxes even though the value of money has reduced

b) Short notes on three measures of Controlling inflation

An inflationary situation can be effectively controlled if the cause is first identified. The following are three measures to control inflation:

a. Fiscal policy

This policy is based on demand management in terms of lowering or increasing the level of aggregate demand. The government can influence the aggregate demand by reducing government expenditure and increasing taxes. This policy is effective for demand-pull inflation.

b. Monetary policy

This policy involves controlling the quantity of money that is in circulation. This can be done through raising interest rates.

c. Direct intervention

Direct intervention involves fixing wages and prices to ensure there is almost equal rise in wages and other incomes alongside the improvements in productivity in the economy.

c) Four assumptions of the theory of comparative advantage

The theory (Law) of comparative advantage was put forward by David Ricardo in 1817 to improve on Adam Smith's principle of absolute advantage, it has the following assumptions:

- It assumes that there are two countries and two commodities
- There is a perfect competition both in commodity and factor market
- Cost of production is expressed in terms of labor
- Labor is the only factor of production other than natural resources
- Labor is homogeneous i.e. identical in efficiency in a particular country
- Labor is perfect mobile within a country
- There is a free trade (no trade restrictions)
- Production is subject to a constant return to scale
- There is no technological change
- Trade between two countries take place on barter system
- Full employment exists in both countries
- There is no transport cost.

d) Four Factors responsible for wage differentials between occupations are listed below:

The major cause of wage differentials between occupations is the demand and supply for a particular labour and other factors listed below:

- Difference in the cost of training, occupations requiring large investments in training pay higher wages to compensate
- Differences in the cost of performing the job, employees operating specialized equipment's like dentists, psychologists are paid more than others

- Differences in the degree of difficulty and unpleasantness of the work, for example miners work under unpleasant conditions than farmers
- Differences in the risk of the occupation a pilot is risky than CPA lecturer
- Difference in stability of employment
- Difference in the prestige of various job
- Effectiveness of trade unions, an industry with an active trade union negotiate good pay for its members

END OF MARKING GUIDE AND MODEL ANSWERS