CERTIFIED PUBLIC ACCOUNTANT

FOUNDATION LEVEL 2 EXAMINATIONS

F2.2: ECONOMICS AND THE BUSINESS ENVIRONMENT

THURSDAY, 02 DECEMBER 2021

MODEL ANSWERS AND MARKING GUIDE

QUESTION ONE

Marking guide		Marks
a)	(i) Calculation of cross elasticity of demand	2
	Explanation	2
	Maximum marks	**4**
	(ii) Calculation of cross elasticity of demand	
	Percentage increase in price of cigarettes	1
	Percentage increase in quantity demanded of cannabis	1
	Cross elasticity of demand	2
	(1 mark for formula, 1 mark for calculation, maximum of 2)	
	Explanation of the policy	
	2	
	Maximum marks	**6**
b)	(i) Factors influencing demand and supply of masks	
	Factors (1 mark each, maximum of 2)	2
	(ii) Factors influencing demand of any commodity	
	Factors (2 marks each, maximum of 8)	8
	Maximum marks	**10**
	Total marks	**20**

Detailed answer

a)

i. The quantity demanded of product A has increased by 12% in response to a 15% increase in price of product B. Calculate the cross elasticity of demand and tell whether the products are substitutes or complements

Cross elasticity of demand

= % change in quantity demanded of A ÷ % change in price of B

= 12% ÷ 15%= 0.67

Since the cross elasticity of demand is positive, product A and B are substitute goods..

ii. Percentage increase in price of cigarettes

= (9000 − 5000) ÷ [(9000+5000) ÷ 2] = 100%

Percentage increase in quantity demanded of cannabis

= (800 − 2,000) ÷ [(800+2000) ÷ 2] = -85.71%

Cross elasticity of demand

Cross elasticity of demand = % change in quantity demanded ÷ % change in price

Cross elasticity of demand = -85.71% ÷ 100% = -0.86

Cigarettes and cannabis have negative cross elasticity of demand which tells that they are complimentary goods.

The policy has proved effective because cigarettes and cannabis are consumed together. Increase in price of cigarettes increased the price of the whole bundle and reduced the purchasing power of people and resulted in a decrease in consumption of cannabis.

b) Normally demand of good changes as a result of changes in price, other factors determining it being held constant, but for this case, demand changes were due to the factors other than price. As countries fight the COVID-19 pandemic, demand for protective gears such as face masks, gloves and goggles are very effective in preventing exposure to the virus. This, of course, needs to be supplemented with the use of hand sanitizer is soaring. Masks and hand sanitizer, especially, have seen unprecedented growth in demand due to:

- ✓ The fact that there is no official cure for the virus, and that it has proven to be highly contagious, has added to the widespread panic in worldwide. The virus has led us to significant price hikes in consumer goods, notably face masks and hand sanitizer induced by the increase in quantity demanded of masks and hand sanitizer.

- ✓ The Number of Consumers in the Market**:** The market demand for a good is obtained by adding up the individual demands of the present as well as prospective consumers of a good at various possible prices. The demand for face masks and hand sanitizers have increased due to the greater the number of consumers of these goods. On the other hand, the seller of these goods succeeds in finding out new markets for the above-mentioned goods and as a result the market for these goods expand the number of consumers for the goods have increased.

Factors influencing demand of any commodity

The demand of good changes because of changes in price, other factors determining it being held constant, we explain below in detail how these other factors determine market demand for a commodity. These other factors determine the position or level of demand curve of a commodity. It may be noted that when there is a change in these non-price factors, the whole curve shifts rightward or leftward as the case may be. The following factors determine market demand for a commodity.

- ✓ Own Price of the commodity: an increase in price of a commodity leads to an increase in its demand. This because suppliers are motivated to supply more at higher prices.

- ✓ Tastes and Preferences of the Consumers: an important factor which determines the demand for a good is the tastes and preferences of the consumers for it. A good for which consumers' tastes and preferences are greater, its demand would be large and its demand curve will therefore lie at a higher level.

- ✓ The changes in demand for various goods occur due to the changes in fashion and also due to the pressure of advertisements by the manufacturers and sellers of different products. On the contrary, when certain goods go out of fashion or people's tastes and preferences no longer remain favorable to them, the demand for them decreases.

- ✓ Income of the People: the demand for goods also depends upon the incomes of the people. The greater the incomes of the people, the greater will be their demand for goods. In drawing the demand schedule or the demand curve for a good we take income of the people as given and constant. When as a result of the rise in the income of the people, the demand increases, the whole of the demand curve shifts upward and vice versa. The greater income means the greater purchasing power. Therefore, when incomes of the people increase, they can afford to buy more. It is because of this reason that increase in income has a positive effect on the demand for a good.

- ✓ Changes in Prices of the Related Goods: the demand for a good is also affected by the prices of other goods, especially those which are related to it as substitutes or complements. When the prices of the related goods, substitutes or complements, change, the whole demand curve would change its position; it will shift upward or downward as the case may be. When the price of a substitute for a good fall, the demand for that good will decline and when the price of the substitute rises, the demand for that good will increase.
- ✓ Advertisement Expenditure: advertisement expenditure made by a firm to promote the sales of its product is an important factor determining demand for a product, especially of the product of the firm which gives advertisements. The purpose of advertisement is to influence the consumers in favor of a product. Advertisements are given in various media such as newspapers, radio, and television. Advertisements for goods are repeated several times so that consumers are convinced about their superior quality. When advertisements prove successful they cause an increase in the demand for the product.
- ✓ The Number of Consumers in the Market: the market demand for a good is obtained by adding up the individual demands of the present as well as prospective consumers of a good at various possible prices. The demand for face masks and hand sanitizers have increased due to the greater the number of consumers of these goods. On the other hand, the seller of these goods succeeds in finding out new markets for the above-mentioned goods and as a result the market for these goods expand the number of consumers for the goods have increased.
- ✓ Consumers' Expectations with Regard to Future Prices: another factor which influences the demand for goods is consumers' expectations with regard to future prices of the goods. If due to some reason, consumers expect that in the near future prices of the goods would rise, then in the present they would demand greater quantities of the goods so that in the future they should not have to pay higher prices. Similarly, when the consumers expect that in the future the prices of goods will fall, then in the present they will postpone a part of the consumption of goods with the result that their present demand for goods will decrease.

QUESTION TWO

Marking Guide	**Marks**
a) Decisions made that affect balance of payment	
Decisions made by the consumers	2
Decisions made by the firm	2
Decisions made by the government	4
Maximum marks	**8**
b) (i) Explanation of the Lorenz curve	
Explanation	1
Graph	1
Maximum marks	**2**
(ii)Uses the Lorenz curve	
Uses (1 mark each, maximum of 5)	5
Maximum marks	**5**
c) Size of the investment multiplier	
Explanation of marginal propensity to consume (MPC)	1
Explanation of marginal propensity to save (MPS)	1
Computation of the investment multiplier	3
(Consider any other way of description that is right)	
Maximum marks	**5**
Total marks	**20**

Detailed answer

a)

✓ **Consumer Spending**

As consumers spend, aggregate demand increases. As we know, many countries have a higher marginal propensity to import. When aggregate demand for imports increases, exports fall. An increase in the value of imports above the value of exports (imports > exports) affects the balance of payments and should, all other things being equal, depreciate the domestic country's currency. Consumer spending assists in maintaining the economy afloat even in the occurrence of deflation. Stable economic growth facilitates decreases in both unemployment and government borrowing since the fiscal authorities are collecting more revenue. If consumer spending continues, the economy will most likely go back to an inflationary period.

- ✓ **The Government's Decision on Balance of Payments**

Direct Control

These are intervention measures taken by the government to reduce or increase a certain type of payment or receipts in the balance of payment (BOP). To improve a country's BOP, the government may:

- Prohibit particular luxurious goods from getting into the country (i.e., cars); or
- Use deflationary financial policies that reduce the overall level of prices and income.

Exchange Control

A deficit in a country may cause a government to try to bring back the equilibrium of the BOP by restricting payments to other nations. Usually, this is done by adjusting exchange controls so as to equate the foreign balance of supply and demand. The objectives of exchange control are:

Protecting the BOP deficit and bring it back to equilibrium;

Protect the nation from "capital flights";

Allowing economies and their policy to have more freedom to act; or

Upholding consistent currency exchange rates with countries that they are in trading with.

- ✓ **Firms**

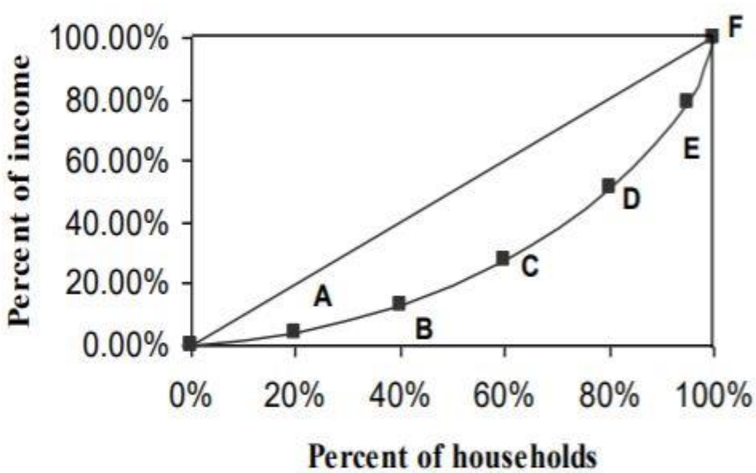
International companies and firms mainly provide developing countries with a lot of advantages such as improving the BOP. Investing in a country will assist the BOP's condition. Also, investing leads to a flow of capital and results in the substitution of imports and/or the promotion of exported goods.

b)

i. A curve that shows cumulative shares of income received by individuals or groups. It was developed by economist Max O. Lorenz in 1905. To plot the curve, we begin with the lowest quintile and mark a point to show the percentage of total income those households received.

We then add the next quintile and its share and mark a point to show the share of the lowest 40% of households. Then, we add the third quintile, and then the fourth. Since the share of income received by all the quintiles will be 100%, the last point on the curve always shows that 100% of households receive 100% of the income.

Lorenz curve



ii. Uses of Lorenz curve.

- ✓ It can be used to show the effectiveness of a government policy to help redistribute income. The impact of a particular policy introduced can be shown with the help of the Lorenz curve, how the curve has moved closer to the perfect equality line post-implementation of that policy.
- ✓ It is one of the simplest representations of inequality
- ✓ It is most useful in comparing the variability of two or more distributions.
- ✓ It shows the distribution of wealth of a country among different percentages of the population with the help of a graph which helps many businesses in establishing their target bases.
- ✓ It helps in business modeling

- ✓ It can be used majorly while taking specific measures to develop the weaker sections in the economy.

c) The multiplier tells us how much increase in income occurs when autonomous investment increases by 1. That is, investment multiplier ΔY/ΔI and its value is equal to 1/1-b where b stands for marginal propensity to consume (MPC).

Thus, multiplier =ΔY/ΔI =1/ 1-b equals marginal propensity to save (MPS) the value of investment multiplier is equal to 1/1-b = 1/s where s stands for marginal propensity to save. In other words, the size of multiplier is equal to 1/1- MPC = 1/MPC Thus, the value of multiplier can be obtained if we know either the value of MPS or MPS. /

Now, higher the marginal propensity to consume (b) (or the lower the value of marginal propensity to save (s), the greater the value of multiplier. /

For example, if marginal propensity to consume (b) is 0.8, investment multiplier is

$$K=\frac{\Delta Y}{\Delta I}=\frac{1}{1-MPC}=\frac{1}{1-0.8}=\frac{1}{0.2}=5 \quad /$$

If MPC or b equal to 0.75

Then m $K=\frac{\Delta Y}{\Delta I}=\frac{1}{1-0.75}=\frac{1}{0.25}=4$ /

QUESTION THREE

Marking guide	**Marks**
a) Factors that have contributed to consistent growth of GDP	
Factors (2 marks each, maximum of 10)	10
Maximum marks	**10**
b) Policies designed to promote export	
Policies (1 mark each, maximum of 4)	
4	
Maximum marks	**4**
c) (i) Calculation of opportunity cost	
China's opportunity cost of producing 1 unit of iron ore	1
Australia's opportunity cost of producing 1 unit of iron ore	1
China's opportunity cost of producing 1 car	1
Australia's opportunity cost of producing 1 car	1
Maximum marks	**4**

ii) Comparative advantage of each country **2**

Total marks	**20**

Detailed answer

a)

- ✓ **Reducing inequality:** Life expectancy, literacy, primary school enrollment and spending on healthcare have all improved. Rwanda has also made big strides towards gender equality which has enabled women in the country to make economic advances. Women are now able to own land and girls can inherit from their parents.
- ✓ **From a farming to a knowledge economy**: Currently around 83% of Rwanda's population of 10.5 million live in rural areas and more than 70% of the population still work in subsistence farming. But the government wants to change this. In the long term, the government aims to transform Rwanda from a low-income agriculture-based economy to a knowledge-based, service-oriented economy with a middle-income status by 2035.

- ✓ **Human Resources development:** Refers to one of the most important determinants of economic growth of a country. The quality and quantity of available human resource have directly affected the growth of Rwandan an economy. The quality of human resource is dependent on its skills, creative abilities, training, and education. If the human resource of a country is well skilled and trained then the output would also be of high quality.

- ✓ **To fight against corruption:** Corruption is a main obstacle in the path of economic development of any nation. Corruption is basically the black money which is not recorded anywhere with government & goes in the pocket of a person who is taking bribe for any type of work. There will be no tax he has to pay on that money. Due to this government expenditure is decreasing & country is not able to progress continuously. So, we should not take or give bribe if we want to see the nation making development. We have to always stop others who are doing this type of things & also we can spread awareness among people about corruption.

- ➢ **Technological Development**: Refers to one of the important factors that affect the growth of an economy. Technology involves application of scientific methods and production techniques. In other words, technology can be defined as nature and type of technical instruments used by a certain amount of labor. Technological development helps in increasing productivity with the limited amount of resources. Rwanda has worked in the field of technological development grow rapidly as compared to countries that have less focus on technological development. The selection of right technology also plays a role for the growth of an economy.

- **Capital formation:** Involves land, building, machinery, power, transportation, and medium of communication. Producing and acquiring all these manmade products is termed as capital formation. Capital formation increases the availability of capital per worker, which further increases capital/labor ratio. Consequently, the productivity of labor increases, which ultimately results in the increase in output and growth of the economy.

- ✓ **Natural Resources:** Affect the economic growth of a country to a large extent. Natural resources involve resources that are produced by nature either on the land or beneath the land. The resources on land include plants, water resources and landscape. The efficient utilization or exploitation of natural resources depends on the skills and abilities of human resource, technology used and availability of funds.

- **Political factors**, such as participation of government in formulating and implementing various policies, have played a major part in Rwandan economic growth.

b)

- ✓ Expanding exports has long been a government priority for Rwanda to ensure strong economic growth, attract foreign exchange and create new off-farm jobs. The government has been highly proactive in its promotion of exports, leading to years of considerable export growth. However, imports have grown even faster, and with recent shifts in global commodity prices, Rwanda is now experiencing a large and growing trade imbalance. To tackle this challenge, a new programme, ‘Made in Rwanda’, has sought to improve the perceptions of Rwandan products within Rwanda, promote nascent industries, and boost the productivity of exporting sectors. This is a promising new step for export promotion, but is also still taking shape.

- ✓ The Made in Rwanda Policy is a holistic roadmap aimed at increasing economic competitiveness by enhancing Rwanda's domestic market through value chain development. It does so through two channels: firstly, it brings together existing government interventions under a clear policy framework; secondly, it addresses supply-side bottlenecks via targeted interventions aimed at deepening specific high potential value chains, improving quality, and boosting cost competitiveness. The Made in Rwanda policy is based on several guiding principles and on the promotion of domestic market development
- ✓ Entrepreneurship development policy in its five pillars of Markets and value chains focuses on expanding access to domestic and export market opportunities for entrepreneurs via improving cross-border trade; improving warehousing systems; making government procurement opportunities more accessible to newer, smaller companies; improving access to market information; facilitating adoption of standards; and updating the SME Cluster Strategy.
- ✓ National export Strategy created to booster the volume of export of goods and service. As Rwanda is a relatively small market, firms will eventually need to expand into new markets in order to grow. Much of Rwanda's existing exports already come from firms producing first and foremost for the domestic market but gradually orientating part of their production toward regional and international markets. Growth in exports is therefore partially dependent on firms' ability to grow within Rwanda.
- ✓ Trade policy have been designed for establishing the right strategies to ensure that Rwanda benefits fully from liberalization, and to ensure that the potential negative effects are mitigated.

  The Trade policy document outlines the objectives of strengthening productive capacities as well as investment into productive capacities, some of the recommended activities are the mobilization of investment for establishment of selected export-oriented industries; improving climate for attracting investment into productive activities; Building up capacities to meeting product standards for human, animal and health protection, as well as environmental norms. It also proposes the objective of strengthening participation in international trade through seeking greater market access and entry opportunities by developing a National Export Strategy; supporting enterprises in finding new markets for exports of Rwanda, especially in Africa, in the EU under EPAs, in Asia and in transition economies; building up and disseminating data and information on tariff and non-tariff measures affecting exports of Rwanda among others.

- ✓ Special Economic Zones policy have been designed for contribute to: Increased foreign and domestic private sector investment; Increased employment and income generation (Direct and Indirect); Export growth and diversification and increased foreign exchange; Development of industry and other sectors and Skills upgrade and technological transfer.
- ✓ The Private Sector Development Strategy (PSDS) is at the heart of the new Economic Development and Poverty Reduction Strategy and help achieve the goals for growth, jobs, exports and investment. It provides an overarching framework for reform initiatives, helping to inform priorities and establishing a framework for monitoring progress. It sets out the key gaps and weaknesses of current efforts and how they can be addressed by Government and other institutions.

c)

i. **China's opportunity cost of 1 unit of iron ore**

ii. China can produce 80 iron ore or 100 cars.

Therefore; 80 iron ore = 100 cars

100 cars / 80 = 1.25 cars.

Hence, 1 iron ore = 1.25 cars

Australia's opportunity cost of 1 unit of iron ore.

70 iron ore / 70 = 1 iron ore

50 cars / 70 = 0.71 cars

Hence, 1 iron ore = 0.71 cars

China's opportunity cost of 1 car

Therefore, 100 cars = 80 iron ore.

100 cars / 100 = 1 car

80 iron ore /100 = 0.8 iron ore.

Hence, 1 car - 0.8 iron ore

Australia's opportunity cost of 1 car.

Therefore, 50 cars = 70 iron ore.

50 cars /50 = 1 car

70 iron ore / 50 =1.4 iron ore

Hence, 1 car = 1.4 iron ore.

iii. Comparative advantage is when a country can produce a good with the least opportunity cost. In this example, the opportunity for iron ore is 1.25 cars in China and 0.71 cars in Australia. As Australia has the lowest opportunity cost for iron ore, it, therefore, has a comparative advantage in the production of iron ore.

If done correctly, China should have a comparative advantage in cars, as it is impossible for a single country to have a comparative advantage in both goods.

QUESTION FOUR

Marking guide	**Marks**
a) Difference between tax avoidance and tax evasion	
Differences (2 marks each, maximum of 4)	4
Maximum marks	**4**
b) Concept of double taxation and its effects	
Explanation of double taxation	1
Its effect on international trade	2
Maximum marks	**3**
c) Proportional, progressive and regressive taxes	
Definition of each (1 mark each, maximum of 3)	3
Identification of the ones used in Rwanda	2
Maximum marks	**5**
d) Computation of the income tax payable	
Salary	1
Education allowance	1
Total cash	1
Non-cash benefit - accommodation	1
Non-cash benefit – car	1
Taxable income	1
Pay as you earn	1
Net pay	1
Maximum marks	**8**
Total marks	**20**

Detailed answer

a) Tax Avoidance vs Tax Evasion

• Tax avoidance and tax evasion are both methods used by individuals and businesses to minimize or completely avoid the payment of taxes.

• Tax avoidance is done by complying with the rules and regulations, yet at the same time by finding any loopholes in the laws of taxation and taking advantage of such shortcomings.

• Tax evasion is an illegal mechanism used in order to avoid the payment of taxes. Tax evasion goes against any taxation laws set in the country and is done in an unfair manner.

• Examples of tax avoidance include tax deductions, artificial transactions created with the aim of gaining a tax advantage, changing business structures to reduce tax rates, establishing companies in countries that offer reduced tax rates also known as tax havens, etc.

• Examples of tax evasion are untrue financial reporting, window dressing of financial accounts, hiding assets and income, claiming false deduction, avoiding payment of taxes due, etc.

• The main difference between tax evasion and tax avoidance lies in that tax evasion is illegal, whereas tax avoidance is a legal method used to reduce tax payments that at times can be unethical in nature.

b) Double taxation is a tax principle referring to income taxes paid twice on the same source of income. It can occur when income is taxed at both the corporate level and personal level. Double taxation also occurs in international trade or investment when the same income is taxed in two different countries. International businesses are often faced with issues of double taxation. Income may be taxed in the country where it is earned, and then taxed again when it is repatriated in the business' home country. In some cases, the total tax rate is so high, it makes international business too expensive to pursue

c) Distinguish between proportional, progressive, and regressive taxes and explain which ones are used for corporate and individual income in Rwanda

Proportional: A proportional or flat tax system assesses the same tax rate on everyone regardless of income or wealth. This system is meant to create equality between marginal tax rate and average tax rates paid.

Progressive: Taxes assessed under a progressive system are based on the taxable amount of an individual's income. They follow an accelerating schedule, so high-income earners pay more than low-income earners. Tax rate, along with tax liability, increases as an individual's wealth increases. The overall outcome is that higher earners pay a higher percentage of taxes and more money in taxes than do lower-income earners.

Regressive taxes: Low-income individuals pay a higher amount of taxes compared to high-income earners under a regressive tax system.

In Rwanda we use Progressive and proportional tax.

d)

Item	2020 Monthly* FRW
Salary (45,000,000/12)	3, 750, 000
Education allowance (7,200,000/12)	600, 000
Total cash	**4, 350, 000**
Add: Non-cash benefit:	
Accommodation benefit (20% of FRW4 350 000)	870, 000
Car benefit (10% of FRW 4 350 000)	435, 000
Taxable income*	**5, 655, 000**
PAYE thereon	1, 680, 500
Net pay	**3, 974, 500**

QUESTION FIVE

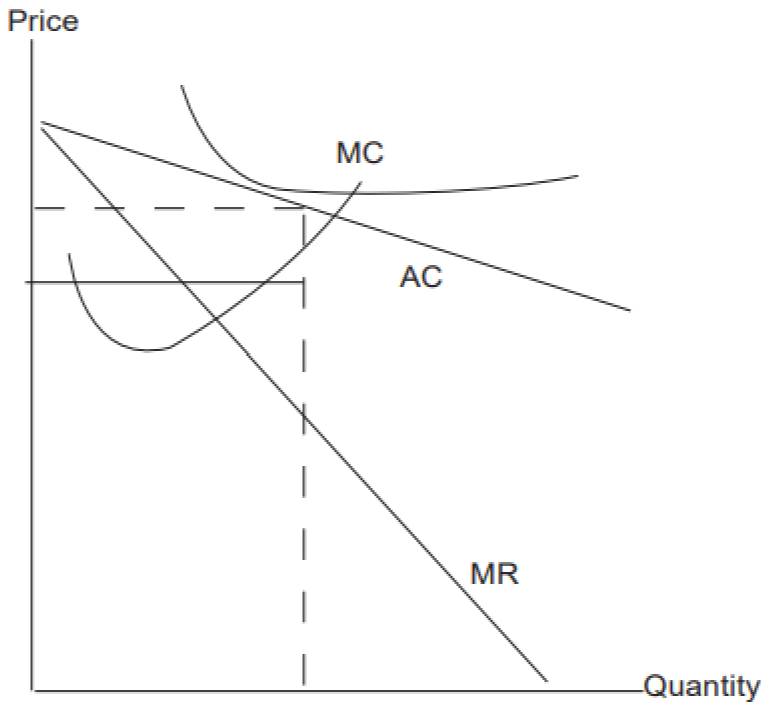
Marking guide	**Marks**
a) Characteristics of monopolistic competition	
Characteristics (1 mark each, maximum of 4)	**4**
b) Explanation of the long run output in monopolistic competition	
Explanation	3
Graph	2
Maximum marks	**5**
c) Distinction between monopoly and perfect competition	
Distinction (1 mark each, maximum of 5)	**5**
d) (i) Difference between economies of scale and diseconomies of scale	
Difference	**2**
ii) Difference between fixed and floating exchange rates	
Differences	**4**
Total marks	**20**

Detailed answer

a)

1. **Large Number of Small Firms:** A monopolistically competitive industry contains a large number of small firms, each of which is relatively small compared to the overall size of the market. This ensures that all firms are relatively competitive with very little market control over price or quantity. In particular, each firm has hundreds or even thousands of potential competitors. This number-of-firms characteristic is a sliding scale. The extent to which an industry has a large number of small firms, the more it is monopolistic competition.
2. **Similar, But Not Identical Goods:** Each firm in a monopolistically competitive market sells a similar product. Yet each product is slightly different from the others. The term used to describe this is product differentiation. Product differentiation is responsible for giving each monopolistically competitive a little bit of a monopoly, and hence a negatively-sloped demand curve. Differences among products generally fall into one of three categories: (1) physical difference, (2) perceived difference, and (3) difference in support services.
3. **Resource Mobility/ relative freedom of entry into and exit out of the industry:** Monopolistically competitive firms, like perfectly competitive firms, are free to enter and exit an industry. The resources might not be as "perfectly" mobile as in perfect competition, but they are relatively **unrestricted** by government rules and regulations, start-up cost, or other substantial barriers to entry. While some firms incur high start-up cost or need government permits to enter an industry, this is not the case for monopolistically competitive firms. Likewise, a monopolistically competitive firm is not prevented from leaving an industry as is the case for government-regulated public utilities.
4. **Extensive Knowledge of prices and technology:** In monopolistic competition, buyers do not know everything, but they have relatively complete information about alternative prices. They also have relatively complete information about product differences, brand names, etc. Moreover, each seller also has relatively complete information about the prices charged by other sellers so that they do not inadvertently charge less than the going market price.

b) In the long run, monopolistic competition generates results similar to those of perfect competition. Because entry into the industry is easy, economic profit induces other firms to enter the market. In the long run, price and average cost are equal and so there is no economic profit. There is no incentive for new firms to enter the market, the representative firm is earning a normal return the therefore firms will not exit the market.



c) The distinction between monopoly and perfect competition is only a difference of degree and not of kind.

Following points make clear difference between both the competitions:

1. Output and Price: Under perfect competition price is equal to marginal cost at the equilibrium output. While under monopoly, the price is greater than average cost.

2. Equilibrium: Under perfect competition equilibrium is possible only when Marginal Revenue (MR) = Marginal Cost (MC) and MC cut the MR curve from below. But under simple monopoly, equilibrium can be realized whether marginal cost is rising, constant or falling.

3. Entry: Under perfect competition, there exist no restrictions on the entry or exit of firms into the industry. Under simple monopoly, there are strong barriers on the entry and exit of firms.

4. **Discrimination:** Under simple monopoly, a monopolist can charge different prices from the different groups of buyers. But, in the perfectly competitive market, it is absent by definition.

5. **Profits:** The difference between price and marginal cost under monopoly results in super-normal profits to the monopolist. Under perfect competition, a firm in the long run enjoys only normal profits.

6. **Supply Curve of Firm**: Under perfect competition, supply curve can be known. It is so because all firms can sell desired quantity at the prevailing price. Moreover, there is no price discrimination. Under monopoly, supply curve cannot be known. MC curve is not the supply curve of the monopolist.

7. **Slope of Demand Curve:** Under perfect competition, demand curve is perfectly elastic. It is due to the existence of large number of firms. Price of the product is determined by the industry and each firm has to accept that price. On the other hand, under monopoly, average revenue curve slopes downward. Average Revenue (AR) and Marginal Revenue (MR) curves are separate from each other. Price is determined by the monopolist.

8. Goals of Firms: Under perfect competition and monopoly the firm aims at to maximize its profits. The firm which aims at to maximize its profits is known as rational firm.

9. Comparison of Price: Monopoly price is higher than perfect competition price. In long period, under perfect competition, price is equal to average cost. In monopoly, price is higher.

10. Comparison of Output: Perfect competition output is higher than monopoly price. Under perfect competition the firm is in equilibrium at point where AR = MR = AC = MC are equal. On the other hand, monopoly firm is in equilibrium at point where MC=MR. The equilibrium. The monopoly output is lower than perfectly competitive firm output.

d) Differentiate:

i. Economies of scale from diseconomies of scale.

When we talk about the scale of production of a firm, we often hear about the fact that large-scale production, usually, helps in reducing the cost of production. Economies of scale refer to these reduced costs per unit arising due to an increase in the total output. Diseconomies of scale, on the other hand, occur when the output increases to such a great extent that the cost per unit starts increasing. Simply economies of scale are when the cost per unit of production (Average cost) decreases because the output (sales) increases whereas Diseconomies of scale are when the cost per unit of production (Average cost) increases because the output (sales) increases.

ii. Fixed exchange rate from fluctuating exchange rate.

A fixed or pegged rate is a rate the government (central bank) sets and maintains as the official exchange rate. A set price will be determined against a major world currency (usually the U.S.

dollar, but also other major currencies such as the euro, the yen, or a basket of currencies). In order to maintain the local exchange rate, the central bank buys and sells its own currency on the foreign exchange market in return for the currency to which it is pegged.

Floating Rates Unlike the fixed rate, a floating exchange rate is determined by the private market through supply and demand. A floating rate is often termed "self-correcting," as any differences in supply and demand will automatically be corrected in the market. Look at this simplified model: if demand for a currency is low, its value will decrease, thus making imported goods more expensive and stimulating demand for local goods and services. This, in turn, will generate more jobs, causing an auto-correction in the market. A floating exchange rate is constantly changing.

QUESTION SIX

Marking guide	**Marks**
a) **Approaches for calculating Gross Domestic Product (GDP)**	
Income Approach	2
Expenditure Approach	2
Maximum marks	**4**
b) Calculations for Gross Domestic Product	
Using expenditure approach	3
Using income approach	3
Maximum marks	**6**
c) Causes of movements along and shifts in aggregate demand	
Causes of movements along the aggregate demand	3
Causes of shifts in the aggregate demand	3
Maximum marks	**6**
d) Difference between demand-pull inflation and cost-push inflation	

Differences (2 marks each, maximum of 4)	**4**
Total marks	**20**

a) Approaches for Calculating Gross Domestic Product (GDP)

Income Approach

Here, GDP can be calculated by taking the total amount earned by every household, companies, and all firms in the economy. It's possible to express the income approach formula to GDP as follows:

GDP = Total national income + Sales taxes + Depreciation + Net foreign factor income

Where:

Total national income is equal to the sum of all wages plus rents plus interest and profits; and

Net foreign factor income is the difference between foreign payments to domestic citizens and domestic income payments to foreign citizens.

Expenditure Approach

In this approach, GDP must be calculated by taking the total amount spent on goods and services that have been produced in the economy within a given period of time.

In the expenditure approach, there are two measurement methods used to calculate GDP. The first uses the value of final outputs and the other method uses the sum of value-added.

Usually, the formula used is:

GDP = Gross private consumption expenditures (C) + Gross private investment (I) + Government purchases (G) + Exports (X) – Imports (M)

b) Using expenditure approach

Payment Transfer	FRW54
Interest Income	FRW 150

Depreciation	FRW 36
Wages	FRW 67
Gross private Investment	FRW 124
Business Profit	FRW 200
Indirect Business Taxes	FRW 74
Rental Income	FRW 75
Net Export(X-M)	FRW 18
Net Foreign Factor Income	FRW 12
Government Purchases	FRW 156
Household Consumption	FRW 304

Using expenditure approach

By using the data in Table, we can calculate the GDP using the expenditures approach. As you can see, the table contains more data than is necessary, so you have to look for the parts which make up the expenditures approach to calculating GDP. The necessary data is highlighted within the table.

Remember:

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

In this case the C is represented by Household Consumption which is FRW304.

The G refers to Government Spending which is FRW156.

I is gross private investment and is FRW124.

(X - M) is the net exports and in the table is shown to be FRW18.

Therefore:

GDP = FRW 304 + FRW156 + FRW124 + FRW18

GDP = FRW 602

Using income approach

This Table also contains the data necessary to calculate GDP using the income approach.

In this case we use the formula:

NI = W + R + *i* + PR

W is the wages that are represented by FRW67 in the table.

Rental income is the **R** and is FRW75.

Interest income is **i** and is FRW150.

PR are business profits and are FRW200.

Therefore: NI = FRW67 + FRW75 + FRW150 + FRW200

NI = FRW492

GDP = NI + Indirect Business Taxes + Depreciation

GDP = FRW492 + FRW74 + FRW36

GDP = FRW602

c) Movement along and shifts the Aggregate Demand Curve

Movements along the aggregate demand curve are mainly caused by prices. When the price level rises, the amount of real money supply declines, forcing the interest rates to rise. Due to high interest rates, this reduces investments and savings, thus lowering levels of income for a short period of time. When price levels decrease, the real money supply increases. This reduces the interest rate thereby encouraging investments and savings, hence subsequently reincreasing income levels.

Shifts in Aggregate Demand

Demand shocks are events that shift the aggregate demand curve. We defined the AD curve as showing the amount of total planned expenditure on domestic goods and services at any aggregate price level. It is mentioned that, the components of aggregate demand are consumption spending (C), investment spending (I), and government spending (G), and spending on exports (X) minus imports (M). A shift of the AD curve to the right means that at least one of these components increased so that a greater amount of total spending would occur at every price level. This is called a **positive demand shock.** A shift of the AD curve to the left means that at least one of these components decreased so that a lesser amount of total spending would occur at every price level. This is called a **negative demand shock.**

d)

1. Demand-pull inflation arises when the aggregate demand increases at a faster rate than aggregate supply. Cost-Push Inflation is a result of an increase in the price of inputs due to the shortage of cost of production, leading to decrease in the supply of outputs.
2. Demand-pull inflation describes, how price inflation begins? On the other hand, cost-push inflation explains Why inflation is so difficult to stop, once started?
3. The reason for demand-pull inflation is the increase in money supply, government spending and foreign exchange rates. Conversely, cost-push inflation is mainly caused by the monopolistic groups of the society.
4. The policy recommendation on demand-pull inflation is associated with the monetary and fiscal measure which amounts to the high level of unemployment. Unlike, cost push inflation, where policy recommendation is related to administrative control on price rise and income policy, whose objective is to control inflation without increasing unemployment.

Inflation need not come solely from the buyers' side or solely from the sellers' side of the market; it can come simultaneously from both sides. For example, suppose that an increase in overall demand caused by more government spending leads to demand-pull inflation. As a result, individuals facing higher prices negotiate higher incomes from their employers.

QUESTION SEVEN

Marking guide	**Marks**
a) (i) Primary objective of the National Bank of Rwanda	
Explanation of objective	3
Maximum marks	**3**
(ii) Reasons for the change of monetary policy framework	
Reasons (1 mark each, maximum of 4)	**4**
b) Qualities of effective central banks	
Qualities (1 mark each, 3 maximum)	**3**
c) Benefits and costs of international trade	
Benefits (1 mark each, 7 maximum)	7
Costs (1 mark each, 3 maximum)	3
Maximum marks	**10**
Total marks	**20**

Detailed answer

a)

i. The primary objective of the National Bank of Rwanda's monetary policy is to ensure price stability, contributing to sustained macroeconomic stability. In the last two decades ending December 2018, the NBR conducted its monetary policy by targeting the quantity of money to achieve that objective. Under that monetary targeting framework, NBR managed to keep inflation low and stable, by providing the quantity of money in the economy - broad money aggregate - in line with inflation and economic growth objectives.

ii. In January 2019, the National Bank of Rwanda shifted from the quantity-based monetary policy framework, to a price-based approach, after five years of preparations.

- ✓ While the price and macroeconomic stability achieved under the monetary targeting regime were commendable, the ongoing economic transformation in both real and financial sectors were starting to pose new challenges that could weaken the link between inflation and broad monetary aggregates.

- ✓ In addition, the Bank observed a tendency among economic actors to increasingly focus on interest rates in their consumption and saving decisions, as a result of the recent developments in the domestic financial system (including the avenue of new financial products and modern payment systems). These trends are reflected in the surge in term deposits as well as investments in government securities by retail and institutional investors.
- ✓ Under those circumstances, a more forward-looking monetary policy that use interest rate as operating target to guide market expectations became the most relevant framework.
- ✓ In addition to the forward-looking aspect, the price-based monetary policy offers several advantages over the quantity-based monetary policy:
  - First, a price-based monetary policy has the advantage that a stable relationship between money and inflation is not critical to the success of monetary policy.
  - Second, prices of money (interest rate) and goods and services (as measured by inflation) can be easily understood by the general public and market players, which enables more effective communication, greater transparency and increased accountability of NBR.

b) The central bank of any nation worldwide has the main responsibility of managing the monetary policy of the country. They also often have the responsibility of maintaining price stability and inflation. So as to be more effective in their responsibilities, central banks need to have the following significant qualities:

✓ **Transparency**

This means that the effective central banks once in a while let people know about the economic environment. They do this by producing reports and airing their views on economic indicators used in coming up with the monetary policy. Finally, transparency helps central banks in gaining credibility.

✓ **Independence**

A central bank should be free from any political influences. Central banks and political parties at times differ in goals. For example, when inflation rises, the central bank wants to deal with it by reducing the supply of money. This leads to a decrease in economic growth. On the other hand, politicians' aim is to increase employment and boost economic growth. If the central bank is influenced by politicians, then it cannot be able to combat inflationary pressures.

✓ **Credibility**

There's the need for individuals in a country to believe in the measures taken by the central bank. The public confidence is key in an inflation-targeting era. Credibility becomes more significant in times of high uncertainty. This quality of effective central banks is less about specific policies and more about the overall confidence in the policies enacted by central banks.

c) Discussions on costs and benefits of trade prove to be an issue in most countries. However, most economists agree that international trade's advantages probably exceed the disadvantages for the economy. Here are the main benefits and costs associated with international trade:

Benefits of International Trade

- High prices for exports and lower prices for imports is a net gain for a country. Efficient allocation of resources is a result of such exchanges. There's an increase in overall welfare because of the larger bundle of goods from such affiance.
- Trade liberalization increases real GDP. Efficient allocation of resources has a positive influence on GDP. International trade offers the exchange of ideas and technical flow of expertise.
- Development of high quality and more effective institution's policies encourages domestic innovations. Domestic productivity benefits from foreign development and researchers.

- Global competition motivates companies to become more efficient because they face an open field. Multinationals also operate on a larger scale leading to cost savings.
- Consumers access a variety of goods and services at lower prices. Hence, living standards of people improve. The absence of restrictions and tariffs enable production and shipment; hence, ensuring availability of goods and services.
- An increase in competition leads to a fall in monopoly power. Thus, the market becomes more efficient.
- Trade encourages efficiency. Through specialization, countries have to concentrate on producing more of the goods they could produce very well over goods they cannot produce with efficiency.

Costs of International Trade

- Loss of jobs and inequality in income caused by competition. As states concentrate on free trade, the domestic industries adjust to this change. As a result, they exist as the main exporters. However, the same exporters face import competition.
- Less efficient firms exit the market. Reason being resources are re-allocated according to whether the firm is growing or contracting. As firms close, some countries can be at a loss at the expense of other countries.
    - An increase in imports causes domestic industries to compete with imports. Technology and capital might not be as developed in some countries. As such, they cannot compete with developed countries in some industries.

End of model answers and marking guide