CERTIFIED PUBLIC ACCOUNTANT

FOUNDATION LEVEL 2 EXAMINATION

F2.2: ECONOMICS AND BUSINESS ENVIRONMENT

DATE: THURSDAY, 27 NOVEMBER 2025.

MARKING GUIDE AND MODEL ANSWERS

QUESTION ONE

Marking guide:

i)-Determining the costs	1
Marginal revenue per house	1
Marginal costs	0,5
Office lease and supply	0,5
ii)Determine Total cost (TC)	1
Determining Profit function	1
Determining the revenue figure	1
iii) Determining Break Even Point (BEP) formula	1
Substituting and answer	1
iv)Substituting in profit by 12	1
Calculating final revenue	1
b)There are six properties of isoquant, any well explained award a mark (1*6)=6	6
c)There are five points- any well point explained , award a mark (1*4)=4	4
Total	20

a) Cost Identification and Marginal Analysis

Fixed Costs (do not change with output):

Salaries costs

Details	**FRW**
Managing Director	1,000,000
Manager Development	600,000
Manager Marketing	450,000
Project Manager	550,000
Finance Manager	400,000
Office Manager	300,000
Receptionist	200,000
Total Salaries	**3,500,000**
Other fixed costs	
Lease	200,000
Utilities & Equipment	300,000
Total Other fixed costs	**500,000**
Total fixed costs	**4,000,000**

Variable/Marginal Costs per House:

	Frw
Land	5,500,000
Materials	2,800,000
Direct Labour	2,000,000
Commission	200,000
Total variable costs/Marginal costs per house	**10,500,000**

Marginal Revenue per House = Selling Price = 11,500,000 FRW

ii) Profit Function
Profit $P(X) = \text{Total Revenue} - \text{Total Cost}$

Total costs
TC = VC + FC = 10,500,000x + 4,000,000
= 1,050,000 + 400,000 = 1,450,000
Total Revenue
TR = 11,500,000 (x)

Therefore, profit function will be determined as follows:
$P(X) = (11{,}500{,}000X) - [4{,}000{,}000 + (10{,}500{,}000X)]$
$P(X) = 11{,}500{,}000X - 4{,}000{,}000 - 10{,}500{,}000X$
$P(X) = 1{,}000{,}000X - 4{,}000{,}000$

Here we are considering X number of houses for the given price of house.
iii) Breakeven Point
For break-even point we are set, where the profit per house is zero considering element that TC=TR
Set $P(X) = 0$
$1{,}000{,}000X - 4{,}000{,}000 = 0$
$X = 4$ houses

iv) Profit for 12 Houses
Profit for 12 houses are calculated based on quantity of houses sold less related costs

$$\boldsymbol{P(12)} = 1{,}000{,}000(12) - 4{,}000{,}000 = 12{,}000{,}000 - 4{,}000{,}000 = \mathbf{8{,}000{,}000}\boldsymbol{FRW}$$

b) Properties of an isoquant
Isoquants are a fundamental concept in microeconomics that represent the different combinations of inputs that can produce a specific level of output. Understanding the properties of isoquants is crucial

for analyzing production processes and making decisions about input usage. The properties of isoquants include:

- Convexity: Isoquants are typically convex to the origin, which means that as more of one input is used, less of the other input is needed to produce the same level of output. This property reflects the principle of diminishing marginal rate of technical substitution, where the marginal rate at which one input can be substituted for another decreases as the quantity of the first input increases.
- Slope: The slope of an isoquant represents the marginal rate of technical substitution (MRTS), which indicates the rate at which one input can be substituted for another while keeping output constant. The MRTS is negative and diminishes as we move down along an isoquant, reflecting the diminishing marginal rate of technical substitution.
- Non-intersecting: Isoquants do not intersect each other, as each isoquant represents a specific level of output. If two isoquants were to intersect, it would imply that the same combination of inputs could produce two different levels of output, which contradicts the definition of isoquants.
- Higher isoquants represent higher levels of output: Higher isoquants are associated with higher levels of output, indicating that more efficient combinations of inputs are being used to produce greater quantities of output.
- Parallel Shifts: When there is a change in output due to factors such as technological advancements or changes in input prices, the entire isoquant curve shifts either upward or downward in parallel fashion.
- Indifference Curves: Isoquants are related to indifference curves, which represent combinations of goods that provide equal levels of satisfaction to consumers. The concept of isoquants is analogous to that of indifference curves in consumer theory.

Understanding these properties allows firms to make informed decisions about input combinations, production techniques, and cost minimization strategies. By analyzing isoquants, firms can determine the most efficient way to produce a given level of output and optimize their production processes.
In summary, isoquants are essential tools for analyzing production functions and understanding how different combinations of inputs can be used to achieve specific levels of output. Their properties provide valuable insights into the relationships between inputs and outputs in production processes.

c) Causes of failure of Structural Adjustment Programs (SAPs) in Rwanda
Provide concise, exam-relevant points each with a sentence of explanation:

- Poor policy sequencing and rash liberalization: Many SAPs pushed rapid removal of subsidies and price liberalization without preparatory reforms; this caused sharp short-term disruptions and social hardship.
- Weak institutional capacity: Ministries, tax administration, and regulatory bodies lacked capacity to implement reforms, monitor outcomes, or protect vulnerable groups; poor implementation undermined intended benefits.

- Inadequate safety nets / social protection: SAPs often reduced public spending on social services. Without compensatory social programs, the poorest suffered, provoking resistance and social unrest which hampered reforms.
- External shocks and adverse macro environment: Commodity price shocks, droughts, or regional instability (and later COVID-type shocks) could reverse gains and make reforms politically and economically unsustainable.

Despite these failures, some argue that SAPs did bring about some positive changes in African countries, such as increased foreign investment and improved fiscal discipline. However, the overall impact of these programs has been mixed, and many African countries are now looking for alternative solutions to address their economic challenges.

QUESTION TWO

Marking guide

a) For each correct answer (1 mark for citing & 1 Mark for explanation)	12
b) For each outlined point (1 Mark)	8

Model Answers

a) Explain six factors contributing to persistently high unemployment in developing countries:

According to Keynes, unemployment refers to the failure to obtain a job at the ruling wage rate despite one's willingness to work.

Causes of unemployment in developing countries:

- Rapid population growth: This led to increased urbanization and very few people attain education due to limited facilities
- Nature of education system: The education system that trains students for white collar jobs which are not available
- Industrialization using capital intensive technology: In many developing countries, labour has been substituted by machines in different factories.
- Lack of serious manpower planning: The training for labour in most cases is not in line with labour demand
- Rural urban migration: Due to wage gap between rural and urban employees, people tend to go to urban areas, and this increases unemployment in cities
- Variation in seasons: in some country's agriculture dominates and it is highly affected by the change in seasons.
- Export of raw materials: Developing countries export raw materials which would be processed locally and generate jobs
- Immobility of labour and lack of information: Poor means of transport keep labour in one place

- Discrimination in labour markets: In some developing countries, unemployment is accelerated by discrimination on the labour market basing on race, political parties, colour or family connections.
- Political instabilities: Wars discourage foreign investors and l harms employment in the country.

b) Recommend eight policy measures to reduce unemployment

- Establishment of small industries which uses intensive labour technology
- Removing structural imbalances between rural and urban areas
- Development of agricultural sector through the provision of incentives to farmers and encouraging cooperatives
- Population policy through family planning, female education
- Reorientation of education systems to suit development needs
- Training programmes for labour which lead to improvement in skills
- Encouraging rural-rural migration by setting basic infrastructure in rural areas
- Diversification and industrialization to check on seasonal unemployment
- Improvement of working conditions to reduce the movement of people from one job to another
- Encouraging foreign investors to establish industries in the country mainly labor-intensive ones.
- Maintaining political stability to encourage investors
- Encouraging private sector to employ more people by reducing taxes for firms employing many people

QUESTION THREE

Marking guide

Qn	Marks allocation	Marks
a)	1.5 marks awarded to each listed factor and 1.5 marks awarded to an explanation on what firms can do in such circumstances.	5
b)	2.5 marks for each explained market structure compared to the perfect competition market.	5
c)	5 marks awarded to a drawn graph and 5 marks awarded to the interpretation of how wages can be affected.	10
	Total Marks	**20**

Model Answers

(i) Three outcomes for perfect competition and firm response to price fluctuations

Three key outcomes of perfect competition:

- Allocative efficiency (P = MC):

In perfect competition, price equals marginal cost at equilibrium; resources are allocated where consumers' marginal willingness to pay equals cost of production.

- Productive efficiency (long run):

Firms operate at the minimum point of long-run average cost (LRAC) due to free entry/exit; production uses lowest-cost combination of inputs.

- Abnormal profit is eliminated

This is because companies have the same means of attracting customers and all information are perfectly known for both side of the customers and sellers.

- Normal profit in long run (zero economic profit):

Easy entry and exit ensure that any positive economic profit attracts entry until profits are driven to normal levels (zero economic profit).

How a competitive firm responds to fluctuating prices:

- Short run: Firm produces where (P = MR = MC). If price falls below minimum AVC, the firm shuts down in the short run to minimize losses (loses fixed costs only).
- Long run: Persistent above-normal profits attract entry, increasing supply and reducing price; persistent losses cause exit, reducing supply and raising the price. Ultimately, entry/exit lead to zero economic profit and the competitive equilibrium is restored.

(ii) Compare monopolistic competition and oligopoly (efficiency & stability)

Monopolistic competition:

Monopolistic competition: does offer choice but it suffers from most of the potential defects of perfect competition. Monopoly offers potential gains from economies of scale, the avoidance of resource duplication when competing firms produce similar goods and try to sell to the same customers, and profits are available for technical development. However, the absence of competition removes many of the pressures that force managers to be efficient and profits may be distributed to senior managers and shareholders rather than used for research and development. Monopoly power can lead to less rather than more efficiency in all its aspects.

Therefore:

- **Efficiency:** Not allocatively efficient P > MC; not productively efficient firms do not produce at minimum LRAC (excess capacity).
- **Stability:** Moderately unstable in long run because entry erodes profits; firms may engage in non-price competition (advertising); prices are flexible.

Oligopoly:

Oligopoly: is usually classed with monopoly in its effects on efficiency and oligopolists are often accused of collusive behavior in order to create partial monopolies for their own benefit. There have been many examples of collusive behavior and abuse of market power but some modern studies have shown that apparent oligopolies can sometimes be highly competitive and the possibilities for potential compensation can produce some of the benefits of competition with less wasteful duplication of resources.

- **Market structure:** Few firms, interdependent behavior, potential for collusion.
- **Efficiency:** Can be less efficient than perfect competition. If firms collude, P > MC. However, oligopolies may have dynamic efficiency (R&D, innovation due to higher profits).
- **Stability:** Can be more stable in prices (price rigidity) due to tacit collusion or kinked demand curve; strategic interaction can produce stability or instability depending on incentives and antitrust enforcement.

Comparison summary: Monopolistic competition gives variety but sacrifices efficiency; oligopoly may achieve higher profits and potential dynamic gains but has risks of collusion and consumer harm. Use a small diagram or table in exam to compare.

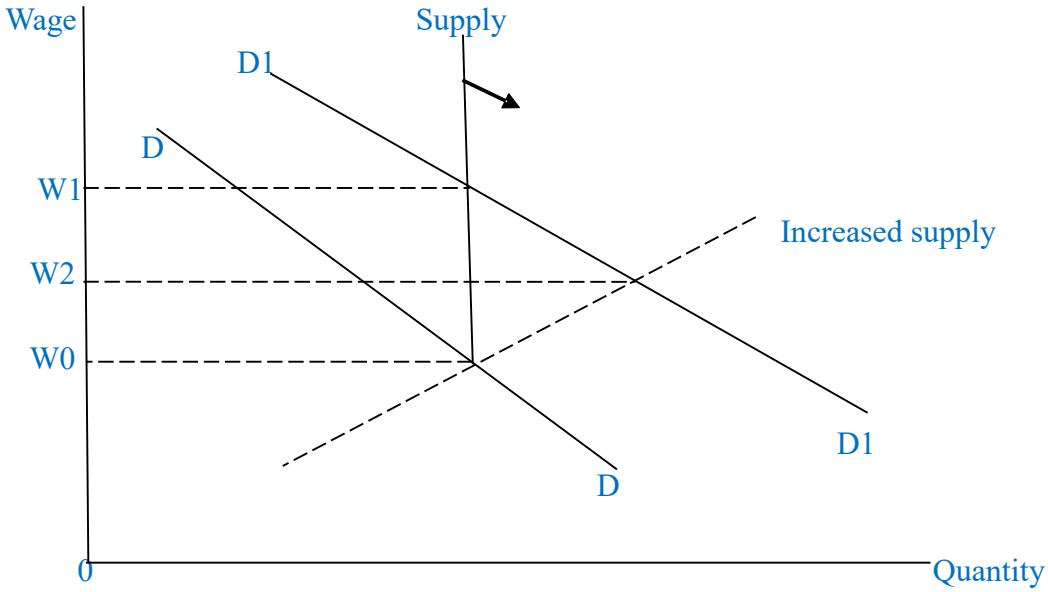
b) Economic rent and wage determination

Economic rent is the payment to a factor of production that exceeds the minimum amount necessary to keep that factor in its current use (i.e., payment above opportunity cost).

Wage determination logic with economic rent:

- Consider a labour market where a certain skillset is scarce (fixed supply). The supply curve for that labour is inelastic (steep). Demand for that labour depends on the marginal product of labour (MPL) and product price.
- If labour is scarce and demand is high, employers bid wages above the worker's opportunity cost. The extra portion of wage above opportunity cost is economic rent.

Graphical representation



- As people respond to the increased earnings possibilities, the supply curve swings to the right at this higher earnings level, and the extent of economic rent is reduced, as shown in the graph above.
- Supply is totally inelastic in the short term and, following a rise in demand from D to D1, the wage rises from W0 to W1. There is economic rent of W1-W0. In time, and in response to the increased rewards, supply rises and the economic rent element falls bringing down the wage to W2.

QUESTION FOUR

Marking guide

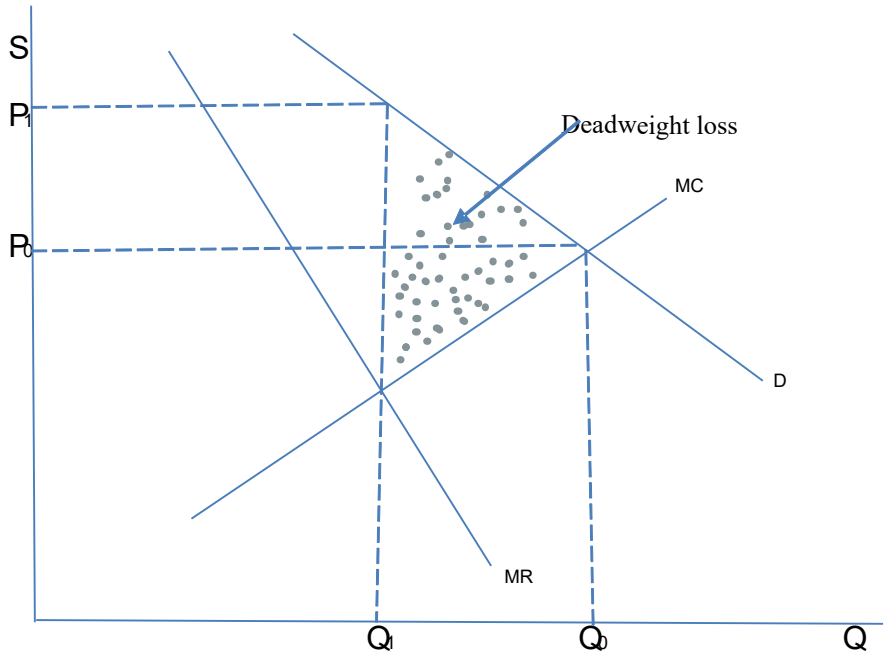
Qn	Marks allocation	Marks
a)	3 marks awarded for a well-drawn graph and 2 marks for interpretation of the graph	5
b)	1 mark for creating a demand and supply equation, 6 marks for determining the equilibrium and 2 marks to determine the revenue and 1 mark for interpreting why revenue is zero.	10
c)	0.5 marks for listing at least 3 points and 1.5 marks for explanation of each point.	5
	Total Marks	**20**

Model answers

a) Explain deadweight loss under monopoly

- Under perfect competition, the market price equals marginal cost (P = MC) and the competitive output (QC) occurs where demand intersects MC. Total surplus (consumer + producer) is maximized, no mutually beneficial trades are left undone.
- A monopoly maximizes profit by producing the output where (MR = MC) and then charging the price on the demand curve corresponding to that output. Because for a monopoly MR < P, the monopoly output (Q_M) is less than competitive output (Q_C), and the monopoly price (P_M) is greater than competitive price (P_C).
- The reduction in output from (QC) to (QM) means there are units between (QM) and (Q_C) that consumers value above marginal cost (i.e., P for those units > MC), but they are not produced. The lost surplus from trades that do not occur is the deadweight loss (DWL).

Graph



The monopoly output is where MR=MC. So, the monopoly produces too little output and charges too high a price compared to the efficient outcome. The dead weight loss is a measure of the inefficiency of a monopoly. It represents the net social benefits from the lost output from having a monopoly in the market rather than perfect competition.
Therefore, the deadweight loss may be overstated because the monopoly fears that entry or government intervention could occur. It may be understated if monopoly firms tend to operate inefficiently and devote resources to maintaining their monopoly positions.

Conclusion: Dead Weight Loss is the loss of total surplus due to monopolist producing lower quantity and charging higher price than competitive equilibrium.

b) Find equilibrium given
Given:
$Qd=1000-0.5P$ $Q_s = 200 + 0.1P$
Step 1: Set Qd = Qs
$1000-0.5P=200+0.1P$
Step 2: Solve for P
$1000 - 200 = 0.1P+0.5P$
P=800 divided by 0.6=1333.33
Equilibrium Price
$P*=1333.33$

Step 3: Substitute P into either Qd or Qs
Using **Qs**:
Q=200+0.1(1333.33)
Q=333.33

Step 4: Total Revenue (TR)
TR=P∗×Q
TR=1333.33×333.
=444,433.33

c) Name three regulated markets in Rwanda and explain challenges

- **Market of Petroleum products:** Rwanda imports 100% of petroleum products and this can create imported inflation. To ensure that prices do not become a burden to citizens the Government subsidizes it so that an increment in prices can still be afforded to the citizens since the wage has not changed**.**
- **Domestic market of coffee:** The Government through its strategic approach to increase local production of coffee has mobilized the coffee farmers to form cooperatives as an approach to distribute resources efficiently, to improve the quality of product through shared efforts, etc. However, it becomes a challenge on price differences compared between the farmer and the investors who buy at a lower price and sell the processed product to the international market on a higher price that will result into a high profit to the investor than the investor**.** More or so, the demand in local market for coffee produce is still at a lower level following the mindset and lack of information. A farmer still believes that the end product should be for international market and not for local consumption instead they substitute it with tea.
- **Market of public transportation:** The transport services market in Rwanda is still open and there is a great opportunity. The Demand is very higher than the supply. In such a market it is possible to increase prices of transport services, claiming the continued increase of prices of fuel and other petroleum products on the market. The Government takes the lead in regulating the prices and also subsidize where possible as a strategy to keep it affordable to the services beneficiaries but also considering the profit making of the service providers.
- **Telecommunication:** Communication is a great consideration in business today. In Rwanda there are a few market players in telecommunication industry. MTN has the largest market share. There have been several claims and concerns from the clients on the network issues and this if not controlled by the Government it might result into a burden on the clients being charged higher than the required.
- **Utilities:** Water and electricity are necessities for every household in Rwanda. It is still a challenge that some households cannot access these services. Secondly, those who get the services at times also claim about fluctuation of prices or even get invoiced on the grounds different from the consumption of water at their homesteads. The Government through the Rwanda utilities and

regulatory authority (RURA) has set price ceilings for either the service providers to set prices on such services but also to the level of the clients 'purchasing capacity.

QUESTION FIVE

Qn	Marks allocation	Marks
a)	3 marks for solving the budget line equation and 1 mark for drawing the graph.	4
b)	1.5 marks for calculations and 1 mark for drawing the graph and 0.5 for interpretation.	3
c)	3 marks for finding the necessary income	3
d)	0.5 marks for the formular to find the percentage change, 2 marks for the workings and 1.5 marks for the correct answer	4
e)	3 marks for the graph and 3 marks for interpretation	6
	Total Marks	20

a) Budget Line and Graphical Illustration

The budget line, 32,000 =2X+4Y

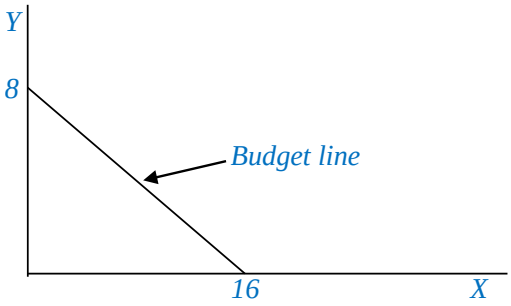
32,000 -2X=4Y

8,000-0.5Y=4, assuming that X=0, Y= 8,000

32,000 -4Y=2X

16-2Y=X, assuming that Y=0, X=16,000

The graph will appear as follows. Figures are rounded in "000"



b) New Budget line after 5% increase in Px

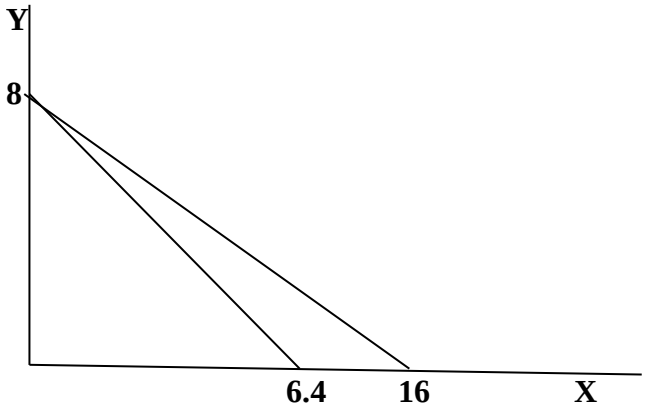
When the price for X is equal to 5FRW the quantity will reduce and the figure will look like this:

32,000=5X+4Y,

32,000-4Y=5X, 6,400-0.8Y=X

Therefore, if Y=0, X= 6,400 which is less than 16,000.

The new budget line will be as follows, figures are in "000"



Interpretation of the graph above:
When the price for X increases then it will reduce the quantity to 6,400 as per the graph. This results from the law of demand which states that the higher the price for a commodity X the lower the quantity will be demanded considering other factors of production.

c) Income needed for 30 units of X and 40 units of Y (initial prices)
Cost = 2×30 + 4×40 = 60 + 160 = **220 monetary units.** If units represent FRW per unit, income required is FRW 220. (Note: in practical settings, reinterpret units if X and Y denote kilograms priced in FRW).

d) Percentage change in income for 25% increase in X (prices constant)

The variation for X: 30*25/100=7.5
The new quantity will become (30+7.5) =37.5
The two levels of income are: 32 & 220)
Therefore, the percentage change or income elasticity of demand (YED) is the following:
EY=percentage change in demand/percentage change in income

$$YED=\frac{Q2-Q1/^{1/2}(Q1+Q2}{Y2-Y1/^{1/2}(Y1+Y2)}$$

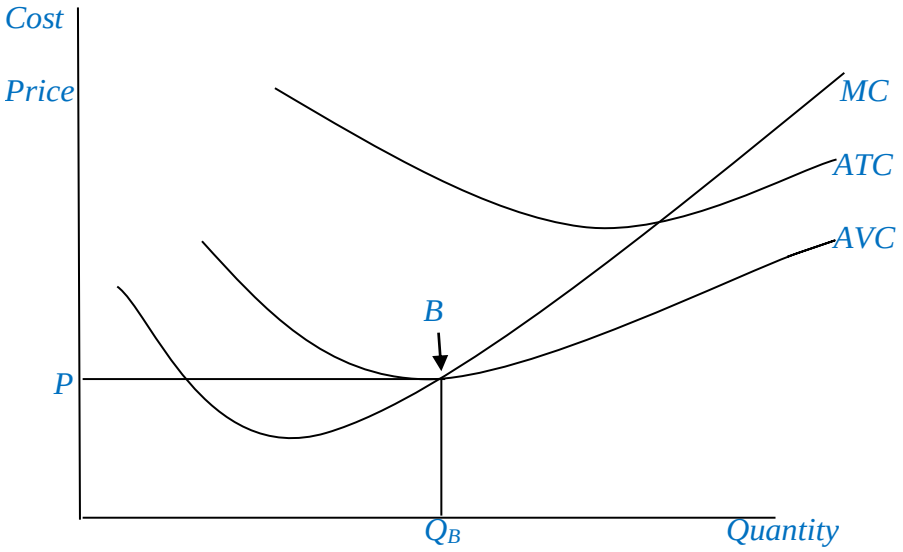
$$YED=\frac{37.5-30/^{1/2}(30+37.5)}{220-32/^{1/2}(32+220)}$$

$$YED=\frac{7.5/37.5}{188/126}$$

YED=945/6345=0.15 or 15%
Therefore, goods X is normal for the consumer. The income elasticity of demand is positive; a consumer uses an increase in income to buy more of the good.

e) Short-run Shutdown Point

A firm should continue producing in the short run if price ≥ AVC. The shutdown point is where P = min AVC. Below this price, the firm minimizes loss by ceasing production and paying only fixed costs.



From the graph above, the shut-down point is reached where the price (P) is equal to the minimum average cost (AVC); i.e. The point B in the graph. The quantity produced below the shutdown point is not enough to maintain the firm in activity. By contrast, if the quantity produced is above the shutdown point (above Q_B), the firm can continue its activity even if it can make a loss.

QUESTION SIX

Marking guide

Qn	Marks allocation	Marks
a)	1 mark for the formular, 0.5 marks for workings and 2.5 marks for the answer	4
b)	1 mark for the formular, 0.5 marks for workings and 1.5 marks for the answer	3
c)	1 mark for the formular, 0.5 marks for workings and 1.5 marks for the answer	3
d)	1 mark for each point listed and 1 mark for each point explained.	10
	Total Marks	**20**

Model answers

a) Number of unemployed

(UR=4.3%, LF=122 million)

Formular: $\frac{\text{Number of unemployed}}{\text{Total number in labor force}} * 100$

= 4.3%*122,000,000 = 5,246,000 are unemployed
100

b) Additional unemployed if rate increases to 5.3%
Formular: Number of unemployed *100
Total number in labor force
= 5.3*122,000,000 = 6,466,000 would be unemployed.
100
Therefore, the additional number of people that are unemployed will be: 6466000-5246000=1,220,000 people.

c) Inflation rate given CPI from 178 to 185
Formular to calculate the inflation rate is:
=Cost of market basket in current year- Cost of market basket in base year *100
Cost of market basket in Base year
Therefore, the solution is: 185-178 * 100
178
Answer: The inflation rate is= 3.93%

d) Five main causes of inflation

- Increase in money supply: When money supply increases in an economy it influences the suppliers to increase the prices of their products because they speculate the buyers have enough to purchase their products, hence causing inflation.
- Increase in Demand: When the demand for products increases the suppliers also increase the prices of their products, causing inflation
- Increase in investment: Be it local or foreign investment, the distribution of income in the population also causes inflation since the suppliers will understand that money is being supplied among the population.
- Shortage of goods: The shortage of goods versus the total population will lead to an increase in prices since there will be little that is needed by many in the market.
- Increase in cost of production: This causes cost-push inflation in circumstances where the prices will rise due to the costs that a producer has incurred during the production process and in order to avoid losses, they will tend to include in the prices of their final goods hence causing inflation.

QUESTION SEVEN

Marking guide

a) Stating each law (3 Marks each), differentiation with figures given (4 Marks)	10
b) Five criticisms of the law (2 Marks each)	10
Total marks	20

Model Answers

a) Law of comparative & absolute advantage

Absolute advantage

The principle of absolute advantage was put forward by Adam smith to show the advantages of international trade. He was opposed by mercantilists who believed that free trade leads to the loss of gold (wealth of nation).

A country has an absolute advantage if it can produce more of a good using the same resources than another country.

Application

The law of absolute advantage state that a country has absolute advantage over other countries if it can produce a commodity at less inputs costs than others. According to the above information, country A can produce either 10,000 tons of coffee or 20 meters of cotton using one unit of labour while country B can produce 2000 Tons or 10,000 meters of cotton with one unit of labour.

- Coffee: A produces 10,000 vs B's 2,000 → A has absolute advantage in coffee.
- Cotton: A produces 20,000 vs B's 10,000 → A has absolute advantage in cotton.

Comparative advantage

The law of comparative advantage was put forward by David Ricardo to improve on Adam smith's principle of absolute advantage. The law of comparative advantage states that a country has a comparative advantage over others if it can produce one or more commodities at less real cost (opportunity cost) than others. Even if a country has absolute advantage in the production of two or more commodities, it should produce that commodity where it incurs less real costs (Opportunity cost).

A country has a comparative advantage in producing a good if it has a lower opportunity cost of producing that good compared to the other country.

Calculate opportunity costs:

From our country:

- By producing 1 ton of coffee, Country A forego 2 meters of cotton (20/10)
- By producing 1 ton of coffee, Country B forego 5 meters of cotton (10/2)

This proves that country A should produce coffee and B produce cotton and the two countries benefit by exchanging surplus.

- Coffee: A's OC = 2 cotton < B's OC = 5 cotton → A has comparative advantage in coffee.
- Cotton: B's OC of cotton in terms of coffee = 0.2 coffee < A's 0.5 coffee → B has comparative advantage in cotton.

Conclusion:
Although A is absolutely more productive in both goods (A is better at producing both), specialization according to comparative advantage yields gains from trade. A should specialize in coffee and export coffee in exchange for cotton from B; B should specialize in cotton.

b) Five criticisms of comparative advantage
Provide criticism plus short explanation each:

- Assumes no transport costs or trade barriers: In reality, shipping costs, tariffs and quotas can eliminate the theoretical gains from specialization and trade.
- Ignores factor mobility and structural change dynamics: Comparative advantage is static; in reality, resources move, technology changes, and economies of scale create dynamic comparative advantages over time.
- Assumes perfect competition and no externalities: Real markets have monopolies, subsidies, and externalities that distort prices and comparative costs.
- May retard industrialization (infant industry problem): Rigid adherence to comparative advantage may prevent development of new industries that need protection/subsidies initially to become competitive later.
- Distributional consequences and social costs: Gains from trade may be uneven; some sectors or workers lose, causing unemployment and social dislocation; the model ignores these transitional costs and income distribution issues.

END OF MODEL ANSWERS AND MARKING GUIDE