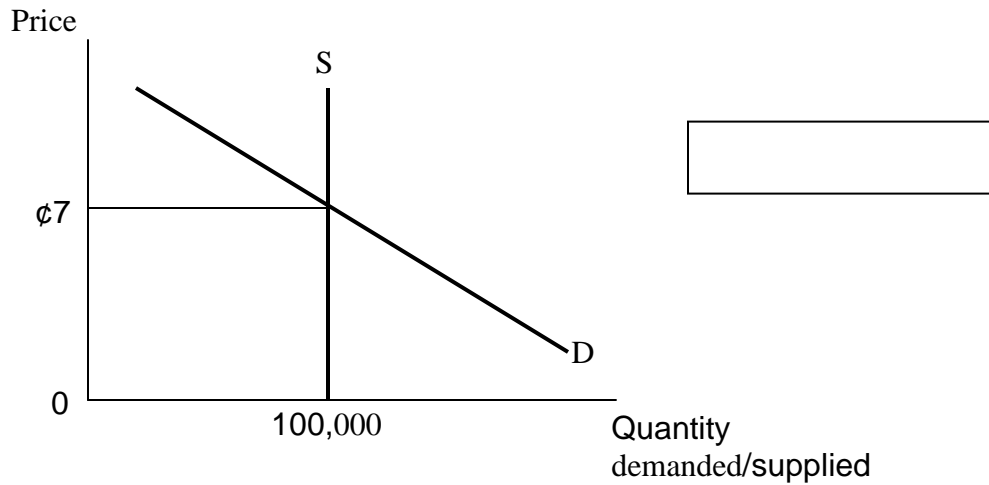**SOLUTION 1**

(a)   If a production possibility curve is bowed out, it shows that the factors of production are not perfect substitutes. This means that the efficiency with which resources are used in production varies. This is reflected as increasing MRT or opportunity cost. The statement is true.

(b)   If an economy is on its production possibility curve it shows that the economy is fully and efficiently employing its resources hence to have more of one good should be at the expense of the other good. To have more of good *Y* for example, the resources must be freed from the production of other good, good *X* and transform into production of good *Y*. This will mean now the society will have less of good *X* and more of good *Y*. The statement is true.

(c)   If technology advances the same resource base could produce more of both goods if the technical progress is neutral or more of one if the change is biased. In these situations the production possibility curves shift outward. The statement false.

(d)   The behaviour of the MRT which measures opportunity cost depends on whether the production possibility curve is bowed out, bowed in or linear. When the MRT is constant it means the absolute slope of the production possibility curve is constant hence the production possibility curve must be linear. The statement is true.

SOLUTION 2

a)   Price floor or minimum price. This is because without the fixed price the equilibrium price will have been GH¢7.

b)   (i) If the farmers sell directly to consumers the market clearing price will be GH ¢7.

   (ii) The total revenue to the farmers will be GH¢7 x 100 000 = ¢700,000

c)   If the farmers sell to the board their total revenue will be GH¢10 x 100 000 = GH¢1,000,000.

d)   If the board sells at GH¢7 the entire beans bought will be sold and total revenue will be GH¢700,000. Total cost was GH¢1,000,000. Loss = GH¢300,000.

e)   (i) If the board sells at GH¢10, Quantity demanded will be 40,000 and there will surplus of 60,000 which it has to store.

   (ii) Total revenue of the board is GH¢10 times 40,000 = GH¢400,000.

f)

Price

S

¢7

0

100,000

Quantity
demanded/supplied

SOLUTION 3

a) Economies and diseconomies of scale are the *"advantages"* and *"disadvantages"* of large-scale production in the long run. The expression *"advantages"* is used here to mean those things that help the firm to reduce unit cost of production. These are known as economies of scale. The word *"disadvantages"* on the other hand means those things that lead to increase in the unit cost of producing larger output. These are referred to as diseconomies of scale.

These advantages and disadvantages can be grouped into two: Internal and External Economies and Diseconomies of scale.

The internal economies of scale are the advantages or benefits that a firm enjoys as it grows larger due to *internal adjustments within the firm* which may not be available to other firms in the industry.
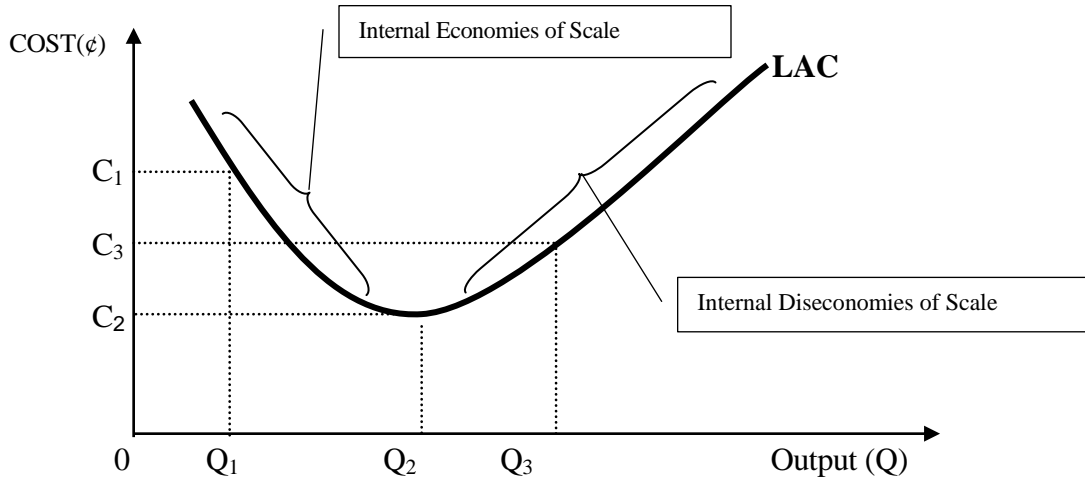
Internal diseconomies of scale on the other hand are the disadvantages a firm has to contend with as it grows larger *through internal adjustments*.

External economies of scale are advantages or benefits enjoyed by a firm, as *the industry in which it operates grows larger*. These advantages are not firm specific and lowers unit cost of production.

2

External diseconomies on the other hand are the disadvantages that confront firms in an industry, which is growing larger beyond the optimal size. These disadvantages are due to external factors within the industry and not from within the set up of the firms.

b)   (i) Internal economies of scale account for the falling section of the firm's long run average cost curve. As the firm expands *through internal adjustments* and enjoys internal economies unit cost of production falls.

FIGURE A: The Long-Run Average Cost Curve

In Figure A the falling section of the LAC curve can be accounted for by Internal Economies of Scale. For example, an increase in output from Q_1 to Q_2 caused the unit cost of production to decline from C_1 to C_2.
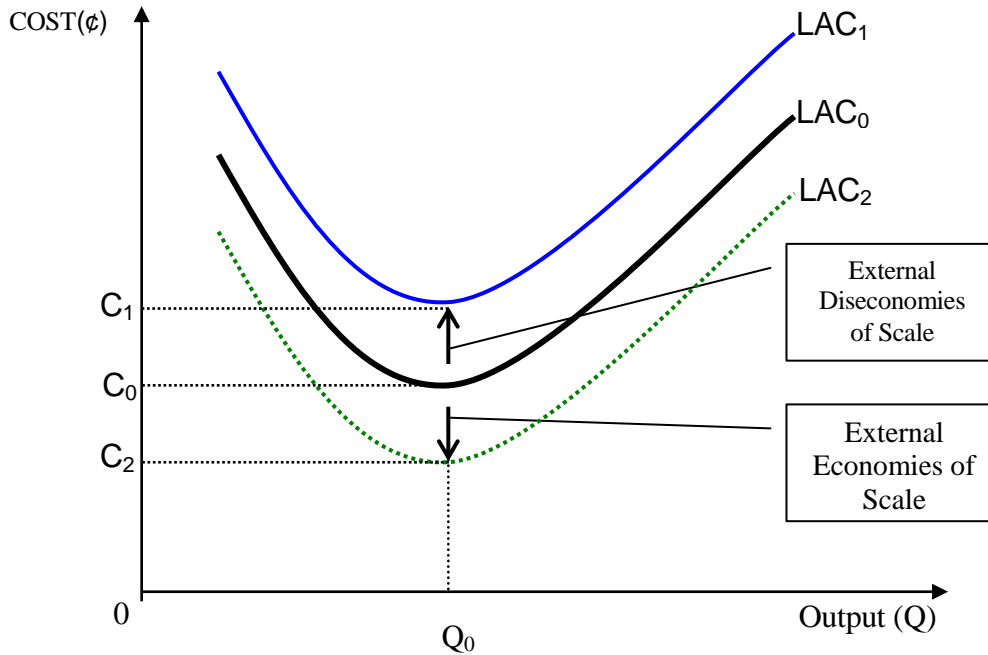
(ii) Internal Diseconomies of scale
Internal diseconomies of scale account for the rising section of a firm's long run average cost curve is u-shaped. As the firm expands beyond a certain optimum size unit cost begins to rise due to internal diseconomies of scale.

In Figure A the rising section of the LAC curve can be accounted for by Internal Diseconomies of Scale. For example, an increase in output from Q_2 to Q_3 caused the unit cost of production to decline from C_2 to C_3.

(iii) The position of long run average cost curve depends on external economies and diseconomies. External economies of scale are advantages or benefits enjoyed by a firm, as *the industry in which it operates grows larger*. These advantages are not firm specific and lowers unit cost of production by shifting the firm's LAC downwards.

This is illustrated in Figure B below

FIGURE B: Illustration of External Economies and Diseconomies of

COST(¢) LAC_1

LAC_0

LAC_2

External Diseconomies of Scale

External Economies of Scale

C_1

C_0

C_2

0   Output (Q)

Q_0

In Figure B, we start with the Long-run Average Cost Curve labelled as LAC_0. On LAC_0, the lowest average cost of production (C_0) is achieved if Q_0 level of output is produced. With the onset of External Economies of Scale, the LAC_0 shifts down to LAC_2. On LAC_2, Q_0 level of output can now be produced at C_2 lower than C_0. This cost reduction is due to External Economies of Scale.

(iv). External diseconomies on the other hand are the disadvantages that confront a firm in an industry, which is growing larger beyond the optimal size. These disadvantages are due to external factors within the industry and not from within the set up of the firm. The effect of this is an upward shift of the firm's LAC.

In Figure B, we start with the Long-run Average Cost Curve labelled as LAC_0. If LAC_0 had shifted up to LAC_1, this would have shown the existence of External Diseconomies of Scale. The same output level (Q_0), which could be produced at C_0, can now be produced at C_1, higher than C_0. This shows an increase in unit cost of production, hence the prevalence of External Diseconomies of Scale.

SOLUTION 4

a)

1. Large numbers of buyers and sellers: The industry or market includes a larger number of firms (and buyers), so that each individual firm, however large, supplies only a small part of total quantity offered in the market. The buyers are also numerous so that no individual buyer can affect the working of the market. Under these conditions, each firm alone cannot affect the price in the market by changing output.

2. Product Homogeneity: The Industry is defined as a group of firms producing a homogeneous product or standardized product. This assumption and the assumption of many buyers and sellers guarantee a uniform price.

3. Free entry and exit of firms (Perfect Mobility of Firms): Certain barriers to entry exist in various markets, which inhibit entry: licenses, patents control over vital resources, government franchise and long-term contracts. Under perfect competition, there is perfect mobility, and none of these barriers exists. In other words, there is no barrier to entry or exit from the industry. Entry or exit may take time, but firms have freedom of movement in and out of the industry or market.

4. Perfect mobility of factors of production: The factors of production are free to move from one firm to another throughout the economy. It is also assumed that workers can move between different jobs, which imply that skills can be learned easily. Finally, raw materials and other factors are not monopolized and labour is not unionized. In short, there is perfect competition in the market of factors of production.

5. Perfect Knowledge: It is assumed that all sellers and buyers have complete knowledge of the conditions in the market. Everyone knows about every possible economic opportunity.

b)

In the short run a perfect competitor incurring loss will continue to produce in the short-run if, and only if, the loss he makes by producing is smaller than the loss he would have incurred by closing the firm or the entire plant.

There are two types of cost in the short-run: Fixed Cost and Variable Cost. The fixed cost cannot be changed immediately when demand conditions change. They are incurred whether the plant is being operated or not. Fixed costs are the same at zero level of output. Therefore, so long as total revenue (TR) exceeds or equal to total variable cost (TVC) the perfect competitor could remain in business.

Figure A: The Competitive Firm's Shut Down Point
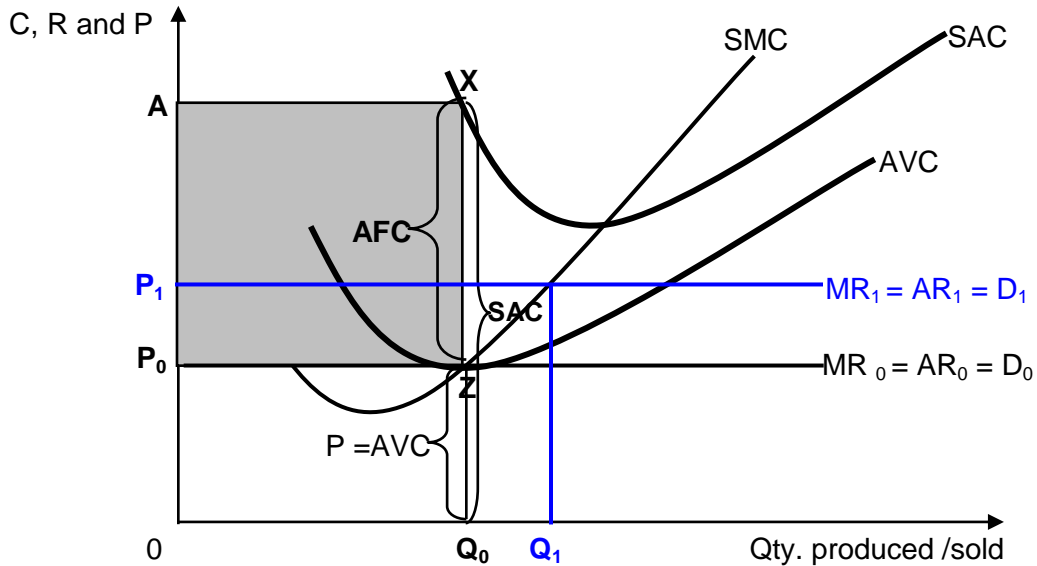
In Figure A, at output level Q_0, point "Z" is the shut down point and the firm makes a loss equal to the Total Fixed Cost, (i.e. the area of the rectangle P_0AXZ) by producing Q_0 level of output. It must be noted that the Total Fixed Cost would have been incurred even without producing. In this example, the price (P) of the firm's product is just sufficient to cover the average variable cost (AVC = distance $Z - Q_0$), leaving the average fixed cost (AFC = distance X - Z) entirely uncovered. Or if price were higher than P_0 say P_1 the firm will have been in equilibrium with Q_1 level of output and incurring a loss lower than the total fixed cost. In these cases the firm stays in business in the short run.

Point Z in Figure A is referred to as the SHUT DOWN because if price were to have fallen below P_0, the firm would have incurred loss greater than the Total Fixed Cost. In this vein, the firm or the entrepreneur would be better off not producing than producing.

Solution 5

(a)   Inflation refers to a sustained increase in the general price level over a period of time.

(b)   The inflation rate (π) is measured as a percentage change in a price index, such as the consumer price index (CPI). That is: $\pi = \dfrac{CPI_t - CPI_{t-1}}{CPI_{t-!}} \times 100$.

Where CPI_t = consumer price index for the current period

CPI_{t-1} = consumer price index for the previous period

(c) (i) Actual Inflation Rate is the percentage rate of increase in an economy's average level of price within a given time period.

(ii) Anticipated inflation: An increase in the general price level that was expected by many economic agents or most decision makers. For example if for a given time period economic agents expected the rate of inflation to be 10% and during that period the actual rate of inflation was 10% then the actual rate of inflation had been anticipated.

(iii) Expected Inflation: The rate at which agents in the economy expect prices on the average to increase over a period of time. This is the rate of inflation that agents in the economy expect.

(iv) Unanticipated inflation occurs when the actual rate of inflation differs from that which was expected. For example if for a given time period economic agents expected the rate of inflation to be 10% and during that period the actual rate of inflation was 15% then the actual rate of inflation had not been anticipated. Hence there was an unanticipated inflation of 5%.

(b)   Monetary policy refers to changes in the money supply often determined by the central bank.

To reduce inflation via monetary policy, the key measures which are available are as follows:
- open market operations in which the central bank sells securities in the open market;

- requiring that clearing banks deposit a larger proportion of their reserves with the central bank;

- increasing the minimum required reverse ratio; increasing the discount (prime) rate.

- Finally, the central bank can exercise moral suasion and require that the banks adopt a tougher policy on giving loans.

These activities by the central bank will reduce money supply, which invariably will increase interest rate and have a dampening effect on aggregate demand for goods and services

SOLUTION 6

(a)

    (i)   TDE = C + I + G = ¢900 + ¢150 + ¢230 = ¢1280m

    (ii)   GDE = TDE + (X − X) = C + I +G + (X − M) = ¢900 + ¢150 + ¢230 + 50 − 70 = ¢1260m

    (iii)   NDE = GDE − Depreciation = ¢1260 − ¢90 = ¢1170

    (iv)   NNE at factor cost = NDE + net factor income − indirect taxes + subsidies = ¢1170 +10 − ¢250 + ¢100 = ¢1030.

(b)   The trade balance is the difference between exports and imports. This is referred to as net exports (NX).

$$NX = ¢50 − ¢70 = -¢20 \text{ (trade deficit)}$$

(c)

(i)   Index of Economic Welfare: National income estimates particularly the per capita income is a very useful indicator of economic welfare.

(ii)   Use for Economic Planning: National income estimates are used to determine the savings and investment potentials of an economy. This information helps the planners of the economy to determine the potential rate of economic growth of a country.

(iii)   Help policy makers to understand the economic structure of a country: For example, the product approach provides detailed information on the contributions of the various sectors and sub-sectors of the economy.

(iv)   Used to approximate the potential demand: Per Capita Income data is used to estimate demand for various commodities. This is a very useful piece of information for potential investors.

(v)   National income estimates are used to determine the subscriptions of nations to international bodies e.g. IMF, IBRD, UN, ECOWAS etc to which they belong.

(vi)   National Income estimates are also useful as a basis for inter-temporal and international comparison of living standards. These estimates make it possible for comparison of standard of living of two or more countries.

SOLUTION 7

a.

i.   It leads to increased total world production of goods and services. International trade based on comparative cost advantage allows countries to specialise in what they can do best. This allows for increase in output and invariably increases in the volume of total world output.

ii.   It leads to efficiency in use of world resources. International trade is based on specialization in what you can do best. This means each country involved in international trade uses the resources available to her in the most efficient way and hence world resources are efficiently used.

iii.   It leads to availability of variety of goods and services. International trade makes citizens of nations to consume goods and services their resources cannot be used to produce.

iv.   International trade leads to economies of scale. International trade leads to increased output and firms involved in producing for exports may enjoy cost reducing advantages that go with increased output.

v.   International trade brings about interdependence. This, politically, may help a nation to be conscious of the existence of other nations. The interdependence of nations helps promote good neighbourliness.

b.

i.   The protection of infant firms: Infant industries are those firms, which are young. The absence of economies of scale to them makes their unit cost of production higher than older and efficient firms in other countries. Protection may be justified during the early growth of an infant firm. As the infant firms grow, skills and productivity, as well as economies of scale will grow, so increasing the firms' relative competitive advantage.

ii.   To protect domestic labour against cheap foreign labour: The theory of comparative cost advantage assumes that factors of production are both fully employed and mobile within countries. If large-scale unemployment exists within a country, protection may be used to increase employment.

iii.   Protection against dumping: It could be looked at as the export of commodities priced below cost of production. Dumping is generally looked upon as an unfair trading practice and for that reason industries fearing competition from dumped goods ask for tariffs to protect them. An export subsidy is a salient form of dumping. Export subsidies are direct payments made or the granting of tax relief and subsidized loans to the nation's exporters or potential exporters so as to stimulate the nation's exports. These make the nation's exports price competitive on the international markets.

iv.   National security: Some key industries such as agriculture and industries producing goods that are important for the defence of the country must be maintained. Countries therefore protect these industries.

v.   To raise revenue: Tariffs are sometimes justified as a means of raising revenue for the government, but in modern economies this is a comparatively unimportant source of government revenue.

c.

i.   Tariffs: These are taxes imposed on traded commodities as they cross national boarders.

ii.   Domestic Subsidies: These may be provided in many forms to avoid dumping.

iii.   Quotas

iv.   Voluntary Export Restraint

v.   Health Regulations

vi.   Outright Ban

vii.   Export Subsidies etc.