SOLUTION 1

a) (i) Increasing returns to scale occurs when labour (L) – capital (K) employment is increased from (1L – 2K) through (2L – 4K) to (4L – 8K). This so because, first output increases from 20 units to 60 unit then from 60 units to 180 units. In each case, a 100% increase in scale leads to a more than 100% increase in output.

(ii) Constant returns to scale occurs when labour (L) – capital (K) employment is increased from (4L – 8K) to 8L – 16K). As the scale is changed by a 100%, output increases by a 100% from 180 units to 360 units.

(iii) Decreasing returns to scale occurs when the scale is changed from (8L – 16K) to 16L – 32K). This shows that a 100% increase in scale produces a less than a 100% increase in output (360 unit to 600 units).

b)

Output	Cost of Labour (GHS)	Cost of Capital (GHS)	Total Cost (GHS)	Average Cost (GHS)
20	100	1000	1100	55.0
60	200	2000	2200	36.7
180	400	4000	4400	24.4
360	800	4000	8800	24.4
600	1600	16000	17600	29.3

c) (i) The average cost falls when there is increasing returns to scale (From output level 20 unit to 180 units).

(ii) The average cost remains constant when there is constant returns to scale (From output level 180 to 360).

(iii) The average cost increases when there is decreasing returns to scale (From output level 360 to 600).

SOLUTION 2

a) U = $TU_2 - TU_1$ = 18 – 10 = 8

V = $TU_3 + MU_4$ = 31 OR $MU_1 + MU_2 + MU_3 + MU_4$ = 31

W = $TU_5 - TU_4$ = 36 - 31 = 5

X = TU_6 + MU7 = 40 + 3 = 43 or the sum of the marginal utilities

b) The law of diminishing marginal utility.

The law states that all other things being equal e.g. the consumer's taste and the consumption of other goods, the marginal utility of a good to e consumer declines as more of it is consumed in a given time period.

c) In the table the marginal utility continues to fall as the consumer increases the consumption of oranges from 1 to 7. If marginal utility is measured in cedis and the marginal utility of money is constant then for the consumer to increase consumption of oranges the price of orange must fall. Or if a consumer is in equilibrium MU = λP and if marginal utility of money (λ) is constant and the consumer experiences diminishing marginal utility then for the consumer to increase consumption of oranges the price of orange must fall.

This is the reason why the demand curve behaves like the positive segment of the marginal utility curve. The demand curve therefore is negative sloped because the consumer experiences diminishing marginal utility.

d) 7 oranges

This is because to be in equilibrium the consumer equates marginal utility of the good to marginal utility of price. (MU = λP).

SOLUTION 3

a) Equilibrium price is $0P_4$

Equilibrium quantity is $0Q_2$

At 0P4 marginal revenue equals marginal cost. MC will be grater than MR if output is expanded beyond $0Q_2$.

b) Short run or Long run equilibrium.

Explanation :

In the short-run monopolistic competitors could be in equilibrium with abnormal profit

(pure economic profit), making losses or breaking even. In this particular case, the diagram depicts short run equilibrium with normal profit.

OR

In the long run firms in an imperfect market earn only normal profit because the existence of profit will attract new firms (free entry).

c) The MR curve lies below the AR curve because to sell each additional unit the imperfect competitor has to reduce its price.

Thus for the imperfect competitor, the MR for selling one extra unit is always less than the price received for the extra unit sold.

d) From the diagram unused capacity is $0Q_2 - 0Q_4$.

A firm exhausts its capacity when it produces the output level associated with the minimum average cost.

SOLUTION 4

a) (i) The demand for a commodity refers to the willingness and the ability to buy specific quantities of a commodity at alternative prices in a given period of time, all other things being equal.

(ii) The law of demand says that the quantity of a good demanded in a given time period increases as its relative price falls and decreases as its relative price rises all other things being equal.

b) (i) **Substitution effect**:

It is the change in the quantity demanded of a commodity resulting from a change in relative price after compensating the consumer for the change in his real income.

In other words, the substitution effect is the change in quantity demanded of a commodity resulting from a change in the price of the commodity when the change is restricted to a movement along the original indifference curve, thus holding real income and the price of the other commodity constant.

(ii) **Income effect**:

The income effect of a change in the price of a commodity is the change in the quantity purchased of that commodity resulting exclusively from a change in **real income**, all other things being equal.

c) The substitution and income effect combine to make a buyer willing and able to buy more of a normal good when its price falls and less when its price rises.

For example, if the price of good X, a normal good falls, it becomes relatively cheap. The consumer increases its consumption at the expense of other goods. This is the substitution effect of a decrease in price of good X. in addition, as the price of good X falls the consumer's real income increases. For a normal good X, the consumer increases his purchases. Thi is the income effect of a price change. The Total Price Effect is the sum of the substitution and Income Effect.

SOLUTION 5

a) Money market consists of financial institutions that deal in short-term securities and loans while capital market is the market for long-term funds. It is made up of all institutions that organize the demand and supply for long-term capital.

b) (i) Stock exchange is the market in which second-hand securities (shares and bonds) are bought and sold.

(ii)

- Stock exchange facilities savings and investment, first through making it possible for investors to dispose of securities quickly if they wish to do so and secondly in channeling savings into productive investment.
- Stock markets perform a screenings role. Changes in stock prices lead to efficient allocation of resources in the industrial sector by weeding out inefficient firms.
- Stock markets enable investors to diversity their investment across variety of industries more easily than most other financial markets. In effect the market reduces the risk premium demanded and cost of capital.
- Stock markets also assist in monitoring managers of publicity traded companies and makes for good corporate governance.
- The stock exchange also enables companies to tap the experiences of other countries.
- The stock exchange is a convenient means through which foreigners can be attracted into a country.
- Provides employment e.g. brokers and jobbers.

SOLUTIONS 6

a) (i) A tariff is a tax or duty levied on traded commodity as it crosses a national frontier. So long as the duty can be paid an importer can bring in any quantity of the commodity.

A quota on the other hand, is a direct quantitative restriction on the amount of the commodity allowed to be imported into the country. Quota unlike a tariff, the quantity that can be imported is fixed in physical or monetary terms and cannot be exceeded.

(ii) An ad valorem tax is expressed as a fixed percentage of the value of the traded commodity while a specific tax is expressed as a fixed sum per physical unit of the traded good.

b) (i) Voluntary export restraint refers to the situation where an importing country induces another nation (exporting nation) to reduce its exports "voluntarily" under the threat of higher all around trade restrictions when these exports threaten an entire domestic industry.

(ii) Health and Safety Regulations: Hygienic production and packing of imported food products are used to prevent the importation of finished food items into the industrialized nation. Safety regulations for goods such as electrical equipment and automobile are also used to prevent the importation of these items. Since it is the importing country that determines the standard, it can be very effective in reducing imports.

(iii) Labeling requirement showing origin and consent can be used to restrict trade. Apart from restricting traded it is also used to achieve other objectives such as human right compliance.

(iv) Ban or prohibition is where a nation completely prohibits the importation of a particular commodity.

(v) International cartel (e.g. OPEC) is an organization of suppliers of a commodity that agrees to restrict output and exports of the commodity with the aim of maximizing or increasing the total profits of the organization.

(vi) Quotas: restrict the amounts that can be imported to fixed quantities.

(vii) Tariff

SOLUTION 7

a) (i) It is a simple two-sector economy. This is because there is no government and the nation does not engage in international trade.

(ii) Investment as a component of aggregate expenditure is defined as spending devoted towards increasing or maintaining the stock of capital. Investment, in the context, includes expenditures on housing construction (residential and business), purchase of machinery and additions to a firm's inventory of goods.

b) (i) Autonomous consumption is 40m because it does not depend on current income.

(ii) The MPC = 0.8 this is because from the equation 80% or o.8 of additional income goes into consumption.

(iii) The multiplier $k = \frac{1}{1 - MPC} = \frac{1}{1 - 0.8} = \frac{1}{0.2} = 5$

c) (i) $Y = C + l$

$C = 40m + 0.8Y$

$Y = 40 + 0.8Y + 50$

$Y - 0.8Y = 4= + 50$

$Y(1 - 0.8) = 40 + 50$

$Y = \frac{1}{1 - 0.8}(40 + 50)$

$= 5 \times 90$

$=$ **GHS450m**

(ii) $C = 40 + 0.8Y$

$C = 40 + 0.8\,(450)$

$= 40 + 360$

$C =$ **GHS400m**

(iii) $S = Y - C$

$450 - 460 =$ **GHS50m**