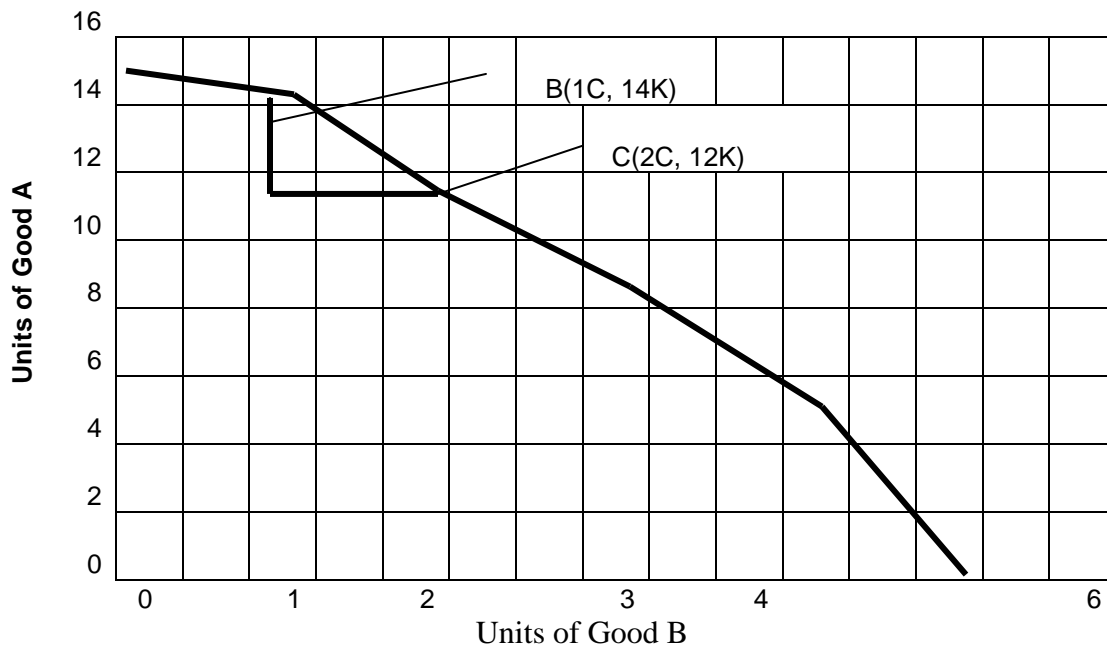


SOLUTION ECONOMICS MAY 2010

QUESTION 1

- a. PPC indicates the maximum combination of two goods that can be obtained from a given number of inputs given a particular state of technology.
- b. i) Opportunity cost is the best alternative forgone, which the same amount of resource(s) could have been used to achieve. The opportunity cost of an (item(s)) is the forgone item(s) that the same amount of resources could have been used to produce or acquire or achieve.

Figure 1: A Production Possibility Curve and Opportunity Cost



As shown in the Figure 1 above, the opportunity cost of the movement point B to point C is 2 Units of good A forgone for 1 unit of good B.

SOLUTION ECONOMICS MAY 2010

ii) Figure 2: Production Possibility curve and Economic Growth

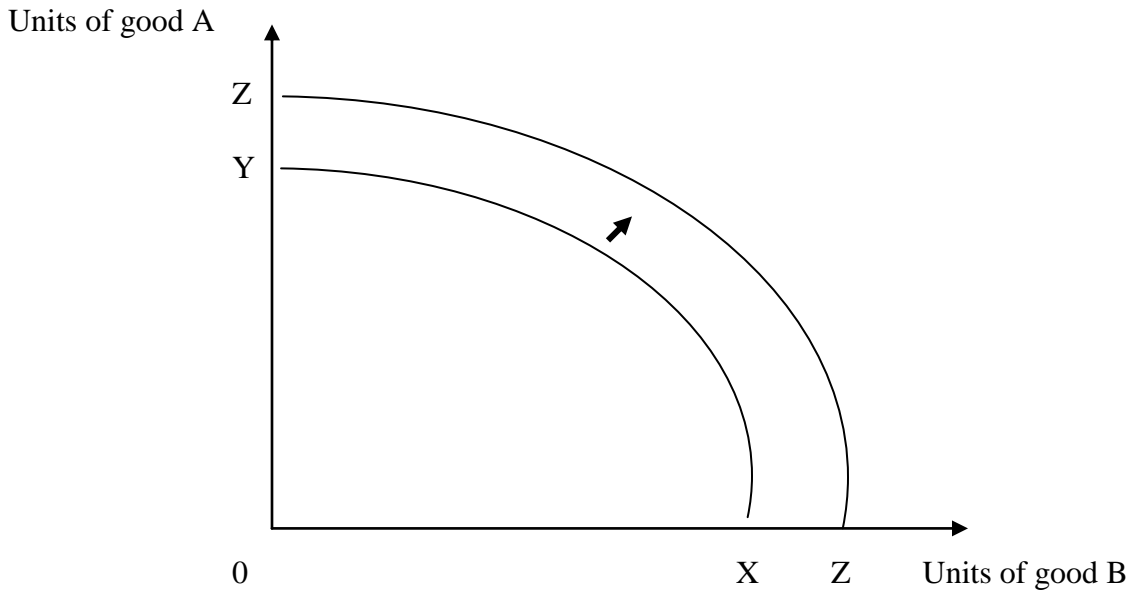


Figure 2 depicts economic growth. PPC (XX) shows production possibility in year one. If over time the production possibility curve shifts outward to ZZ which allows the society to produce more goods and services than before then there has been an economic growth.

c. Economics is regarded a social science because it studies the behaviour of human beings in isolation or in a society as they use their scarce economic resources to satisfy their unlimited wants. The economist employs the scientific methods except the experimenting stage because human behaviour cannot be effectively controlled. Scientific method involves:

- identification of a problem;
- hypothesizing about the problem;
- collecting data on the problem;
- experimenting with the data in a controlled environment;
- drawing inferences; and
- developing theories to explain these inferences.

In economics, we do not conduct experiments because human behaviour is erratic and cannot be effectively controlled. Economic conclusions therefore lack exactitude hence it is dubbed a social science.

QUESTION 2

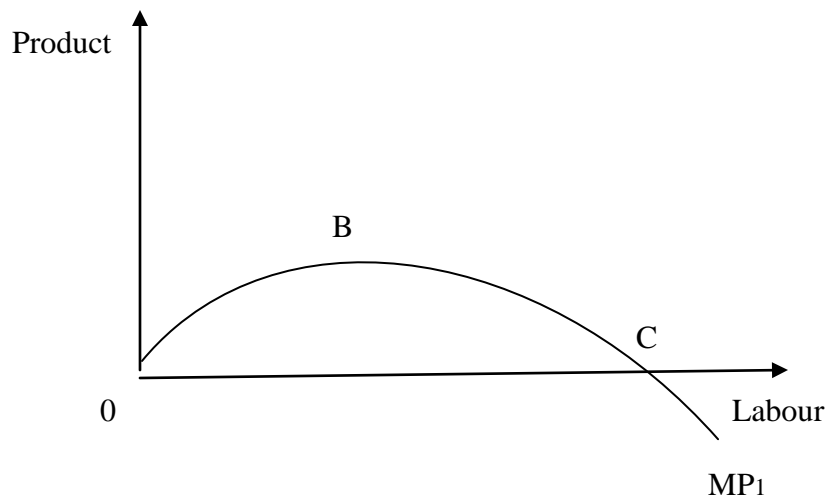
a. The law of Diminishing Returns to Variable Proportion states that other things being equal – e.g. given technology and a fixed quantity of some inputs – as the employment of an input increases (variable input), initially MP increases but eventually it diminishes.

SOLUTION ECONOMICS MAY 2010

Or, all other things being equal e.g. state of technology, socio-cultural environment etc, as a variable input is increased, given fixed inputs; marginal product initially increases, but eventually diminishes.

- b.
 - i. The principle refers to the short-term run where the producer uses fixed and variable inputs. All the inputs, apart from the variable input are held unchanged in quantity.
 - ii. The viable resource may be labour, tools, fertilizers – any resource commonly engaged in production.
 - iii. The variable resource is applied unit by unit, and each unit is identical in amount and quality.
 - iv. It applies not only in agriculture, but also in manufacturing, retailing, advertising, mining etc.

- c. The Marginal Product Curve and the Law of Diminishing



- i. “Between 0 and B” the Phase of Increasing Returns to variable proportion: It means that the production function is depicting increasing MP as the variable input increases. Total Product increases at an increasing rate.
- ii. “At B” and Phase of Constant Returns to variable proportion: It shows constant MP as the variable input increases. Total Product increases at a constant rate.
- iii. “Between B and C” the Phase of Diminishing Returns to variable proportion: Marginal Product diminishes or decreases. Total product increases but at a diminishing or decreasing rate.
- iv. At point C the Phase of Zero Returns to variable proportion: Marginal Product turns negative as the variable input increases. Total product increases at a negative rate or total product decreases.

SOLUTION ECONOMICS MAY 2010

QUESTION 3

- (a) When the relative price falls, new demanders enter the market and quantity demanded increases.

For the existing demanders, a fall in the relative price of a good makes it relatively cheap compared to other goods given his limited income. That is, a fall in the relative price of the good increases quantity demanded of it. This is referred to as the Substitution effect.

Also for the existing demanders, a fall in the relative price of a good, given their incomes, increases their real incomes (the quantity of the good their money incomes can buy). The extra quantity bought of the commodity as a result of increased real incomes is the Income Effect.

Or

In addition to when the relative price falls, new demanders enter the market and quantity demanded increases, the marginal utility approach could be used.

The individual consumer is in equilibrium if the marginal utility of the commodity equals the marginal utility of price or the marginal significance of price. This condition is represented in form of an equation below:

$$MU_1 = \lambda P_1$$

The equilibrium condition above goes with a certain level of purchases of commodity "X" which is represented by Q_1 .

Suppose there us a fall in the price of commodity "X" from P_1 to P_2 other things being equal. This leads to a situation of disequilibrium if the consumer maintains his consumption at Q_1 . This is shown below:

$$MU_1 > \lambda P_2$$

The implication of this is that the marginal utility derived from consuming commodity "X" in the face of the fall in price of commodity "X" is now greater than the marginal utility of price or the marginal significance of price.

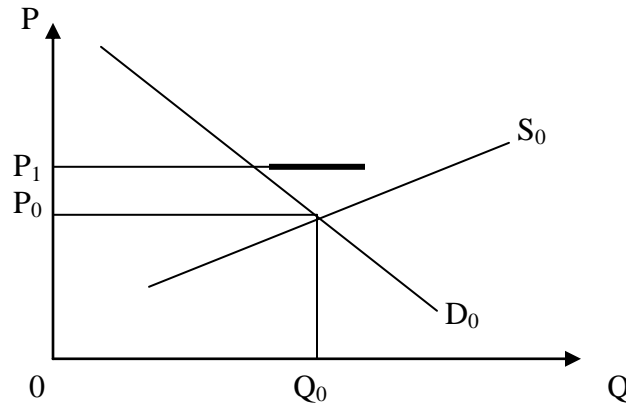
For equilibrium to hold the marginal utility of the commodity should fall by the same proportion. But for the MU_1 to fall to MU_2 the law of diminishing marginal utility requires that more of the commodity should be consumed. In this situation, the individual consumer will buy more of commodity "X". In the process, the marginal utility of the commodity to the individual diminishes from MU_1 to MU_2 until equilibrium is restored. This analysis gives us the second equilibrium of the consumer depicted below:

$$MU_2 = \lambda P_2$$

SOLUTION ECONOMICS MAY 2010

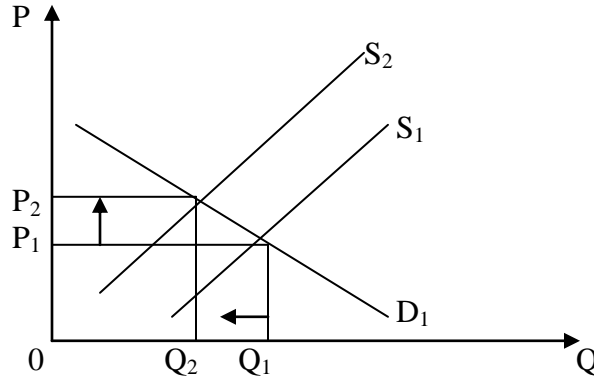
Again, the new consumer equilibrium requires a level of purchases of “X” greater than Q_1 denoted as Q_2 . The demand curve is negatively sloped because the consumer experiences diminishing marginal utility.

- (b) A market surplus occurs when the market price is above the equilibrium price. This is illustrated below:



A market surplus exerts a downward pressure on the ruling market price. In the process consumers increase quantity demanded and move downward along D_0 . The suppliers also will reduce quantity supplied along S_0 until equilibrium is attained at P_0, Q_0 .

- (c) The introduction of per unit tax on the suppliers affects the supply curve. This is depicted in the diagram below:



The introduction of per unit tax reduces supply to S_2 . Given demand, excess demand emerges at P_1 , causing the equilibrium price to increase to P_2 and the equilibrium quantity to Q_2 .

SOLUTION ECONOMICS MAY 2010

QUESTION 4

- a) The Table depicts the short run production period. This is because of the fixed cost element in total cost.
- b) Thelore Manufacturing Company is operating in a perfectly competitive market. Under a perfect market the individual firm has no influence over the market price. This is evident here because the price is €20 regardless of output sold.

Output (ton)	Price per Unit (€)	Total Revenue (€)	Total Fixed Cost (€)	Total Variable Cost (€)	Total Cost (€)	Total Profit (€)
0	-	0	50	0	50	-50
1	20	20	50	10	60	-40
2	20	40	50	20	70	-30
3	20	60	50	30	80	-20
4	20	80	50	40	90	-10
5	20	100	50	50	100	0

- c) NO. If the average sales are 5 tons, total profit will equal zero (0). This means the firm covers both the fixed and variable costs fully. The firm breaks even (makes normal profit) and should not shut down.

QUESTION 5

- (a) There are three major factors which determine the demand for money, and these are the transactions, precautionary, and speculative demand for money.

The transactions demand for money explains why economic agents need to hold the exact timing of income and expenditure. For example, firms which sell goods on credit can never be certain when these goods will be paid for. In order to continue in business until payment is received, firms carry precautionary balances.

The transactions and precautionary motive for holding money are positively related to the level of national income.

The final motive is the speculative demand for money which examines how agents and firms hold money in reaction to the risks inherent in the fluctuating price of financial assets (e.g. government bonds).

- (b) An expansionary monetary policy (for example, via open market operations reduction in the prime rate, and relaxation of the reserve requirement of commercial banks), will tend to lower interest rates and encourage more investments. This, in turn, will raise the level of national income. Because the transactions and precautionary demand for money are

SOLUTION ECONOMICS MAY 2010

positively related to the level of national income, assuming all other things being equal, an expansionary monetary policy will increase the transaction and precautionary demands for money.

- (c) There are three key instruments used in monetary policy: open market operations, discount rate (prime rate) and reserve requirements. The open market operation is where the central bank buys and sells government debt in the money markets, thereby altering the cash reserves in the banking system. The prime rate or the discount rate is where central bank varies the interest its charges on loans to the commercial banks. The reserve requirement is where the central bank alters the amount of reserves that commercial banks have to deposit with the central bank. Directives to the commercial banks and moral suasion are also tools though.

QUESTION 6

- (a) i. Equilibrium requires that expenditure equals income:

$$Y = C + I$$

Inserting values:

$$Y = 250 + 0.5Y + 500$$

$$Y - 0.5Y = 750$$

$$Y = 1500.$$

- ii. This value of income is then used in the consumption function to find the equilibrium level of consumption.
- (b) From the question, the multiplier is 2 (since $MPC = 0.5$, therefore the multiplier = $1/(1 - 0.5)$). The increase in investment expenditure is 50 means national income increases by 100 (2×50), to 1600 ($1500 + 100$).

An alternative way of showing this is to increase I from 500 to 550 and insert this into the equation:

$$Y = C + I$$

$$Y = 250 + 0.5Y + 550$$

$$Y - 0.5Y = 800$$

$$Y = 1600.$$

- (c) There are many ways this can be done:
- i. Subsidies (which may be direct or indirect)
 - ii. Tax breaks (for example deferred tax on profits)
 - iii. Lower corporation taxes compared to indigenous manufacturers
 - iv. Free zone enclave

SOLUTION ECONOMICS MAY 2010

- v. Improvement in business infrastructure which can facilitate investment in the form of Foreign Direct Investment
- vi. Creating a stable macroeconomic environment

QUESTION 7

- (a) An adverse trade balance occurs when imports exceed exports. There are many measures that a government can introduce to correct this. In the short term, the government can:
 - i. Cause the exchange rate to depreciate or devalue the exchange rate;
 - ii. It can impose tariff;
 - iii. Quotas and embargoes on imports;
 - iv. Try to persuade its residents only to buy nationally produced goods;
 - v. In the longer term, the government could implement measures to improve the international competitiveness of its industry: for example, by encouraging investment and research and development.
- (b) There are many reasons why a government might choose to impose restrictions on free trade.
 - i. One is the 'infant industry' argument.
 - ii. Another would be that it was a means of retaliating against other countries which had imposed restrictions.
 - iii. Sometimes restrictions are imposed to prevent dumping and to reduce the influence of trade on consumer tastes.
 - iv. Another argument in favour of restrictions is that it can help an economy to expand its manufacturing capacity and thereby have less reliance on the production and export of foodstuffs and raw materials, which are relatively income inelastic.
 - v. Employment
 - vi. Strategic industry
 - vii. Revenue.