

Economics 2014 (Outside Delhi)

SET I

Time allowed : 3 hours

Maximum marks : 70

SECTION—A

1. The government has started promoting foreign capital. What is its economic value in the context of Production Possibilities Frontier? [1]

Answer : Promotion of foreign capital by the government will lead to an increment in resources as fresh investment into the country. It will increase the production in the country and will lead to a rightward shift in Production Possibility Frontier (PPF).

2. Define indifference curve. [1]

Answer : A curve that shows different combinations of two commodities that yield the same level of satisfaction to a consumer is called an indifference curve.

3. Define marginal product. [1]

Answer : Marginal product refers to the change in the total output brought by employing one additional unit of labour. Algebraically, marginal product = change in total product/change in labour units $MP = \frac{\Delta TP}{\Delta L}$

4. What is market supply of a product? [1]

Answer : The total quantity of a commodity supplied by all the producers at a given price during a given period of time is called the market supply of a product.

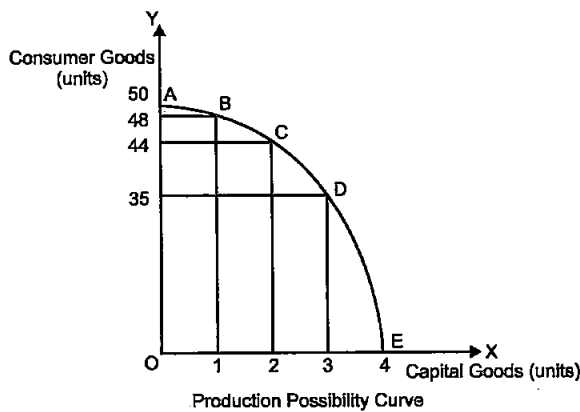
5. What is imperfect oligopoly? [1]

Answer : When the firms produce different products in an oligopoly market, it is called imperfect oligopoly, e.g., automobile industry.

6. Why is Production Possibilities Curve concave? Explain. [3]

Answer : The Production Possibility Curve is concave because marginal rate of transformation, which is the slope of the curve, increases continuously as each additional unit of one good is produced by reducing quantity of the other good. It means to produce more and more units of one good, more and more units of other good need to be sacrificed. MRT and opportunity cost increases because no resource is equally efficient in production of all goods. This can be explained with the help of the following diagram.

** Answer is not given due to change in present syllabus



In the above figure, *AE* represents the *PPC* for capital goods and consumer goods. Suppose that the initial production point is *B*, where 1 unit of capital good and 48 units of consumer goods are produced. To produce one additional unit of capital good, 4 units of consumer good must be sacrificed (point *C*). Thus, at point *C*, the opportunity cost of one additional capital good is 4 units of consumer goods. Further moving to point *D*, to produce one more unit of capital good, 9 units of consumer goods must be sacrificed. That is, the opportunity cost rises to 9 units of consumer goods. Thus, as we move down the *PPC* from point *C* to point *D*, the opportunity cost and *MRT* increases. This confirms the concave shape of the *PPC*.

7. When the price of a good falls from ₹ 10 to ₹ 8 per unit, its demand rises from 20 units to 24 units. What can you say about price elasticity of demand of the good through the 'expenditure approach'?** [3]
8. Explain how technological progress is a determinant of supply of a good by a firm. [3]

OR

Explain how input prices are a determinant of supply of a good by a firm.

Answer : The level of technology directly affects the supply of a good. *i.e.*, while other things remain the same, there exists a positive relationship between the state of technology and the quantity produced. With the appreciation in the level of production techniques, per unit cost of production goes down. This encourages the producers to produce higher quantities of goods, thereby increasing the supply of the goods.

On the contrary, a depreciation in the production technology raises the per unit cost of production, thereby decreasing the supply of good.

OR

Input prices are related to the supply of a good. If the prices of inputs increases then the

cost of production also increases, while other things remain the same. Due to the rise in the cost of production, it becomes relatively less profitable for a producer to produce the good. Consequently, lesser quantity is supplied at the given price. On the other hand, if the input prices falls, the cost of production also falls, thereby enabling the producer to supply more quantities of output at the given price. Thus, the change in the input prices positively affects the supply of a product.

9. Why is Average Revenue always equal to price? [3]

Answer : Average Revenue (*AR*) is defined as the revenue earned per unit of output sold. *AR* is the same as the price (*P*) of the output (*Q*). Algebraically, it can be expressed as follows :

$$AR = TR/Q, \text{ where } TR \text{ is total revenue,}$$

$$TR = P \times Q$$

$$\therefore AR = \frac{PQ}{Q} \Rightarrow AR = P$$

Thus, *AR* is always equal to the price of the output.

10. Why is the number of firms small in oligopoly? Explain. [3]

Answer : Oligopoly refers to the form of market where very few big firms (giants) own major control over the whole market by producing significant portion of the market demand. The number of firms is small in oligopoly, because there exists a cut-throat competition among the firms which makes it very difficult for any new firm to enter the industry. Moreover, as the existing firms are the only giants in the market, new entry into the market is associated with high costs, which further narrows the scope for a new entrant.

11. A consumer consumes only two goods *X* and *Y* and is in equilibrium. Show that when the price of good *X* rises, the consumer buys less of good *X*. Use utility analysis. [4]

OR

Given the price of a good, how will a consumer decide as to how much quantity of that good to buy? Use utility analysis.

Answer : In case of two commodities, the consumer's equilibrium is attained at that point, where; the utility derived from each additional unit of the rupee spent on each of the goods is equal. That is, Marginal Utility of a Rupee spent on the good *X* (*i.e.*, MU_x/P_x) is equal to the Marginal Utility of a Rupee spent on the good

** Answer is not given due to change in present syllabus

Y (i.e., MU_y/P_y), which in turn is equal to the Marginal Utility of Money (MU_M). That is,

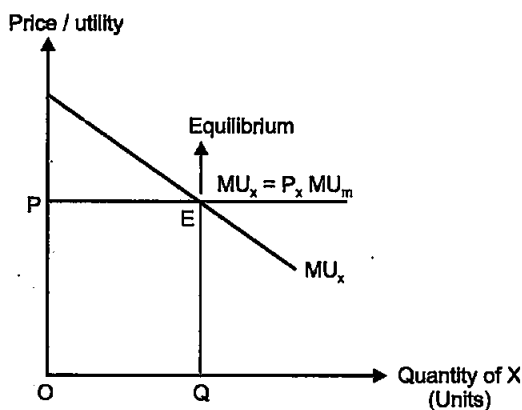
$$MU_x/P_x = MU_y/P_y = MU_M$$

However, when the price of commodity X rises, the ratio of marginal utility to price of X (MU_x/P_x) becomes lower than that of Y, that is $MU_x/P_x < MU_y/P_y$.

In such a case, the consumer rearranges his consumption combination such that the equality is again restored. He would decrease his consumption of commodity X. With the decrease in the consumption of commodity X, marginal utility of X rises. As a result, the ratio of marginal utility to price of X rises. The consumer would continue decreasing the consumption of commodity X till the equality between the ratio of marginal utility to price in case of X and Y is again reached.

OR

In order to decide, how much of a good to buy at a given price, a consumer compares Marginal Utility (MU) of the good with its price (P). The consumer will be at equilibrium, when the Marginal Utility of the good will be equal to the price of the good. i.e., $MU_x = P_x$. If $MU_x > P_x$ that is, when price is lesser than the Marginal Utility, then the consumer will buy more of that good. On the other hand, if $MU_x < P_x$, that is when price is more than the Marginal Utility, then the consumer will buy less of good. This is reflected in the following diagram.



In the figure, the quantity of commodity x is represented on the x-axis, while, the price and the utility are represented on the y-axis. OP is the price of the commodity. MU_x curve is downward sloping representing diminishing Marginal Utility of x. The consumer attains consumer's equilibrium at point E, where, the Marginal Utility becomes equal to the price of the commodity.

12. Give the meaning of "inferior" good and explain the same with the help of an example. [4]

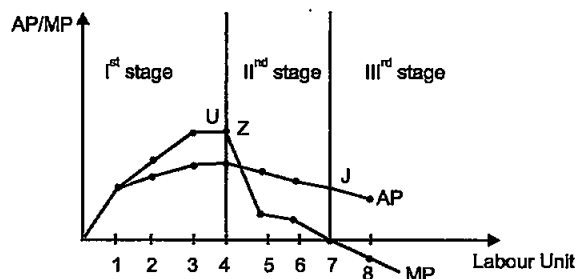
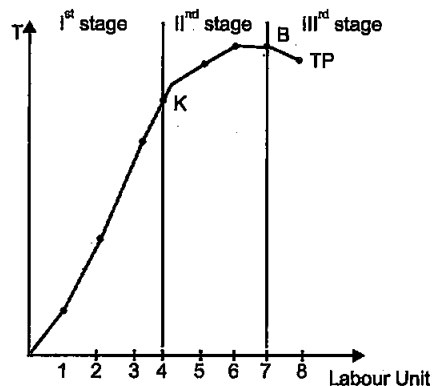
Answer : Inferior goods refer to those goods that

share an inverse relationship with the income of a consumer. As income increases the demand for inferior goods fall and vice-versa. This is because with an increase in the income, the consumer tends to shift demand to superior quality goods, thereby, reducing the demand for inferior goods.

For example, coarse cereals can be considered as inferior goods. A good can be normal or inferior depending on the level of consumer's income. For instance, at a very low level of income, coarse cereals may be a normal good. However, for higher income level, ceteris paribus, coarse cereals will be an inferior good because with an increase in income, a consumer will reduce his/her consumption of inferior cereals and it will be substituted by superior cereals.

13. Giving reasons, explain the 'Law of Variable Proportions'. [4]

Answer : The Law of Variable Proportions states that if more and more of variable factor (labour) is combined with the same quantity of fixed factor (capital), then initially the total product will increase but gradually after a point, the total product will become smaller and smaller. MP of variable factor may initially rise but eventually a situation will come when MP of variable factor starts declining. It may go to zero or even negative.



In the upper panel, TP is the Total Product curve. In the lower panel, AP represents the Average Product curve and MP represents the Marginal

Product curve. According to the Law of Variable Proportions, the whole production phase can be distinguished into three different production stages.

Ist Stage : Increasing Returns to a Factor During this phase, TP curve increases at an increasing rate and is also accompanied by rising MP curve in the lower panel. TP continues to increase at an increasing rate till point K (inflexion point). Corresponding to the inflexion point, K, the MP curve attains its maximum point (U). Throughout this stage, the marginal product of labour is rising which implies that production (or total product) can be increased by employing more units of labour. The first stage of production is also known as non-economic zone as a rational producer will not operate profitably in this stage.

Reasons for Increasing Returns to a Factor

- 1. Underutilisation of the fixed factor :** In the first stage of production, there are not enough labour units to fully utilize the fixed factor. Therefore, the firm can increase its output just by combining more and more of labour inputs with the fixed factor, thereby; the output of the additional unit of labour (*i.e.*, MP) tends to rise.
- 2. Division of labour :** The increase in the labour input enables the division of labour, which further increases the efficiency and productivity of the labour.
- 3. Specialisation of labour :** Due to the division of labour, specialization of individual labour unit increases, which in turn raises the overall efficiency and productivity. Consequently, the MP curve rises and TP curve continues to rise.

IInd Stage : Diminishing Returns to a Factor

In this stage, the TP curve increases but at a decreasing rate and attains its maximum at point B, where it remains constant. On the other hand, in the lower panel, the MP curve continues to fall and cuts AP from its maximum point Z, where MP equal AP. When TP attains its maximum point, corresponding to it, MP becomes zero. AP, in this stage initially rises, attains its maximum point at Z and thereafter, starts falling. This stage is known as the economic zone as any rational producer produces in this stage.

Reasons for Decreasing Returns to a Factor

- 1. Full utilization of fixed factor :** In this stage, the fixed factor is utilized to its maximum level as more and more of labour inputs are employed.

2. Imperfect substitutability between labour and capital : The variable factors are imperfect substitute for the fixed factor. Therefore, the firm cannot substitute labour for capital and as a result diminishing returns takes place.

3. Optimum Proportion/Ideal Factor Ratio : The optimum proportion (or ideal factor ratio) is a fixed ratio in which the labour and capital inputs are employed. These factors will be the most efficient if they are employed as per the optimum proportion. If this proportion is disturbed (by combining more of labour inputs to the fixed units of capital), then the efficiency of the factors will fall, thereby to the diminishing returns to the factor.

IIIrd Stage : Negative Returns to a Factor This stage begins from the point B on the TP curve. Throughout this stage, TP curve falls and MP curve becomes (crosses the *x*-axis) negative. Simultaneously, the AP curve continues to fall and approaches the *x*-axis (but does not touch it). This stage is also known as non-economic zone as any rational producer would not operate in this zone. The addition to the total output in this stage by the additional labour unit (*i.e.* marginal product) is negative. This implies that employing more labour would not contribute anything to the total product but will add to cost of the production in form of additional wage.

14. Explain why is an indifference curve (a) downward sloping and (b) convex. [6]

OR

Explain the concept of 'Marginal Rate of Substitution' with the help of a numerical example. Also explain its behaviour along an indifference curve.

Answer : (a) Indifference curves are downward sloping from left to right. This reflects the fact that the consumer cannot simultaneously have more of both the goods. In other words, an increase in the quantity of one good is associated with the decrease in the quantity of the other good. This is in accordance with the assumption of monotonic preferences.

(b) Indifference curve is convex to the origin because as we move with the Indifference curve towards the right, the slope of IC (MRS) decreases. This is because as the consumer consumes more and more of one good, the marginal utility of the good falls. On the other hand, the marginal utility of the good sacrificed will rise. In other words, the consumer is willing to sacrifice less and less for each additional unit

of the other good consumed. Thus, as we move down the IC, MRS diminishes. This suggests the convex shape of indifference curve.

OR

Marginal rate of substitution refers to the rate at which a consumer is willing to substitute one good for each additional unit of other good.

Algebraically, it is represented as follows :

$$MRS = \Delta x_2 / \Delta x_1$$

This can be better understood with the help of the following numerical example.

Bundles	Good X ₁ (Units)	Good X ₂ (Units)
A	5	1
B	2	2
C	1	3

Now as we can see, a movement from Bundle A to Bundle B, in order to get one more units of Good X₂, the consumer must sacrifice 3 units of Good X₁. This implies that $MRS = -3/1 = -3$.

As we move down along the Indifference curve to the right, Marginal Rate of Substitution decreases. This is because as the consumer consumes more and more of one good, the marginal utility of that good falls. On the other hand, the marginal utility of the good sacrificed will rise. In other words, the consumer is willing to sacrifice less and less for each additional unit of the other good consumed. Thus, as we move down the IC, MRS diminishes. This suggests the convex shape of indifference curve. For instance, in the example given above, a further movement from bundle B to bundle C suggests that with one unit of increase in good 2, the consumer is willing to sacrifice good 1 falls to 1 unit. Thus, MRS falls.

15. From the following information about a firm, find the firm's equilibrium output in terms of marginal cost and marginal revenue. Give reasons. Also find profit at this output. [6]

Output (units)	Total Revenue (₹)	Total Cost (₹)
1	6	7
2	12	13
3	18	17
4	24	23
5	30	31

Answer :

Output (units)	Total Revenue (₹)	Total Cost (₹)	Marginal Revenue (₹)	Marginal Cost (₹)	Profits (TR-TC)
1	6	7	—	—	-1
2	12	13	6	6	-1
3	18	17	6	4	1
4	24	23	6	6	1
5	30	31	6	8	-1

According to the MR-MC approach, the firm (or producer) will attain its equilibrium in two conditions.

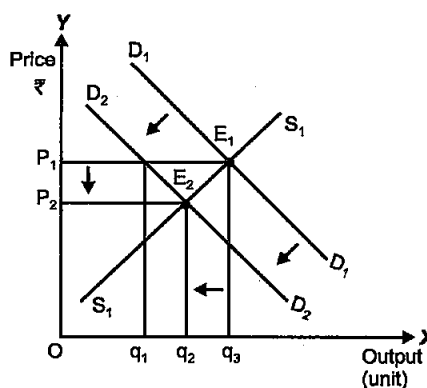
- MR = MC
- MC must be rising after the equilibrium level of output.

Thus, by looking at the table, we can say that the firm is in equilibrium where output equal to 4 units. When output is 4 units, MR = MC (thus, the first condition is satisfied) and MC increases after the 4th unit of output (therefore, the second condition is satisfied).

When output is less than 4 units, if the firm produces slightly lesser level of output than 4 units, then the firm is facing price that exceeds the MC. This implies that higher profits can be achieved by increasing the level of output to 4 units. On the other hand, if the firm produces slightly higher level of output than 4 units, then the firm is facing price that falls short of the MC. This implies that higher profits can be achieved by reducing the output level to 4 units. Thus, only at 4 units of output, the producer will be in equilibrium and the profit maximizing output level, where Price (P) = MC and also MC curve is rising.

16. Market of a commodity is in equilibrium. Demand for the commodity 'decreases'. Explain the chain of effects of this change till the market again reaches equilibrium. Use diagram. [6]

Answer :



A decrease in the demand for the commodity leads to a fall in the equilibrium price and quantity. Let us understand how it happens : D_1D_1 and S_1S_1 represent the market demand and market supply respectively. The initial equilibrium occurs at E_1 , where the demand and the supply intersect each other. Due to the decrease in the demand for the commodity, the demand curve will shift leftward parallel from D_1D_1 to D_2D_2 , while the supply curve will remain unchanged. Hence, there will be a situation of excess supply, equivalent to $(q_3 - q_1)$. Consequently, the price will fall due to excess supply. The price will continue to fall until it reaches E_2 (new equilibrium), where D_2D_2 intersects the supply curve S_1S_1 . The equilibrium price falls from P_1 to P_2 and the equilibrium output falls from q_3 to q_2 .

SECTION B

- 17. What are the time deposits? [1]
Answer : Time Deposits refer to those deposits that are held for a fixed (specific) period of time (called maturity period).
- 18. Define inflationary gap. [1]
Answer : Due to the excess of aggregate demand, there exists a difference (or gap) between the actual level of aggregate demand and full employment level of demand. This difference is termed as inflationary gap.
- 19. What is full employment? [1]
Answer : Full employment refers to the situation where the resources of a country *i.e.*, labour are fully and efficiently employed. But, it is not a situation of zero unemployment. In other words, full employment can be said to take place when cyclical unemployment is zero while the structural and frictional unemployment are minimum.
- 20. Define fiscal deficit. [1]
Answer : Fiscal deficit refer to the excess of total budget expenditure over the total revenue receipts excluding borrowings during a given fiscal year.
 Fiscal Deficit = Total Budget Expenditure – Revenue Receipts + Capital Receipts excluding borrowings.
- 21. Define foreign exchange rate. [1]
Answer : Foreign exchange rate refers to the rate at which price of one currency is measured in terms of other currency.
- 22. What are externalities? Give an example of a positive externality and its impact on welfare of the people. [3]
Answer : An externality is said to occur when the action of one entity made an impact on other entity. These externalities can be positive as well as negative. A positive externality occurs

when the action of one person positively affects the other. For instance, plantation by a person provides fresh air to others. Also, it contributes to the environment along with increasing the welfare of people. Thus, plantation by a person affects the life of the people living on the surrounding areas, it enhances the overall welfare of the society and creates positive externality.

- 23. Explain the significance of the 'Unit of Account' function of money.** [3]

OR

Explain the significance of the 'Standard of Deferred Payment' function of money.**

- 24. Is the following a revenue receipt or a capital receipt in the context of government budget and why? [3]

(i) Tax receipts

(ii) Disinvestment

Answer : (i) Tax receipts are revenue receipts as these receipts neither creates any liability nor it creates any reduction in the assets of the government.

(ii) Disinvestment is treated as capital receipts because it results in the reduction of government assets.

- 25. Distinguish between 'autonomous' and 'accommodating' Balance of Payments transactions. [3]

Answer :

Autonomous Transactions	Accommodating Transactions
Autonomous transactions refer to those international economic transactions that are undertaken with the sole motive of earning profit.	Accommodating transactions refer to those international economic transactions that are undertaken to correct the disequilibrium in the autonomous items.
Autonomous transactions are classified 'above the line items' in BOP.	Accommodating items are classified 'below the line items' in BOP.
Such transactions are independent of the BOP status of a country.	Such transactions depend on the BOP status of a country as they are compensating short-term capital transactions that are undertaken to correct the disequilibrium in the autonomous items.

- 26. Foreign exchange rate in India is on the rise recently. What impact is it likely to have on exports and how? [3]

** Answer is not given due to change in present syllabus

Answer : A rise in the exchange rate say from \$1 = ₹40 to \$1 = ₹50 implies that domestic country's export to foreign countries have become cheaper because now foreigners can purchase ₹50 worth of goods for \$1, as compared to the earlier situation where they could purchase only ₹40 worth of goods for \$1. Thus, this raises the demand for exports.

27. Explain 'Banker to the Government' function of the central bank. [4]

OR

Explain 'Bankers' Bank' function of the central bank.

Answer : Central bank acts as a banker and financial advisor to the government. As a banker to the government, it performs the following functions.

- (i) It manages the account of the government.
- (ii) It accepts receipts from the government and makes payment on behalf of it.
- (iii) It grants short-term loans and credit to the government. It performs the task of managing the public debt.
- (iv) The central bank advises the government on all the banking and financial matters. RBI gives loans to government when its expenditure exceeds its revenue. This is called deficit financing through funding from RBI.

OR

Central bank is the apex bank of all the commercial banks and financial institutions in the country. It holds the same relationship with the commercial banks as a commercial bank holds with its customer. The central bank accepts deposits from the commercial banks and holds it as reserves for them. The commercial banks are compulsorily required to hold a part of their deposits as reserve with the central bank in accordance with the cash reserve ratio (CRR). In addition to the CRR requirements, the commercial banks hold reserves with the central bank for clearing their settlements with other banks and to fulfill their requirements of inter-bank transfers.

28. Calculate Marginal Propensity to Consume from the following data about an economy which is in equilibrium: [4]

National income	= 2000
Autonomous consumption expenditure	= 200
Investment expenditure	= 100

Answer : Given,

National Income (Y)	= 2000
Autonomous consumption expenditure	= 200
Investment expenditure	= 100

As we know in equilibrium,

$$Y = C + I$$

Since, $C = C + cY$

We get

$$Y = C + cY + I$$

$$2000 = 200 + c(2000) + 100$$

$$1700 = 2000c$$

⇒

$$c = 0.85$$

Therefore, marginal propensity to consume is 0.85.

29. Tax rates on higher income group have been increased. Which economic value does it reflect? Explain. [4]

Answer : Increasing the tax rate on higher income groups leads to an increase in the tax revenue of the government without hurting the tax group. The government can in turn use the revenue thus, generated from this taxation to finance the welfare activities in the nation. Thus, by increasing the tax rate on the higher income groups, the government can bridge the gap between the rich and the poor, thereby moving the society towards being an egalitarian society. Moreover, the government can reallocate resources to maintain a balance between the social objectives of welfare maximization and economic objective of profit maximization.

Thus, we can say that by increasing the tax rate on higher income groups, the government satisfies the value of equality and welfare.

30. Calculate 'Net National Product at Factor Cost' and 'Gross National Disposable Income**' from the following: [6]

(₹ in Arab)

(i) Social security contributions by employees	90
(ii) Wages and salaries	800
(iii) Net current transfers to abroad	(-) 30
(iv) Rent and royalty	300
(v) Net factor income to abroad	50
(vi) Social security contributions by employers	100
(vii) Profit	500
(viii) Interest	400
(ix) Consumption of fixed capital	200
(x) Net indirect tax	250

Answer : $NNP_{FC} = \text{Wages and Salaries} + \text{Social security contribution by employers} + \text{Rent and}$

** Answer is not given due to change in present syllabus

Royalty + Profit + Interest – Net factor income to abroad
 = 800 + 100 + 300 + 500 + 400 – 50
 = ₹2050 Arab

31. How should the following be treated in estimating national income of a country? You must give reasons for your answer. [6]

- (i) Taking care of aged parents
- (ii) Payment of corporate tax
- (iii) Expenditure on providing police services by the government

Answer : (i) **Taking care of aged parents :** This will not be included in national income as it does not involve any production of goods and services. Moreover, these services that are meant for self-consumption and it is difficult to estimate the market value of such services.

(ii) **Payment of corporate tax :** Corporate tax is a part of corporate profit and therefore, it is included in national income of the country.

(iii) **Expenditure on providing police services by the government :** It is included in national income of a country as it forms a part of Government Final Consumption Expenditure.

32. When is an economy in equilibrium? Explain with the help of Saving and Investment functions. Also explain the changes that take place in an economy when the economy is not in equilibrium. Use diagram.

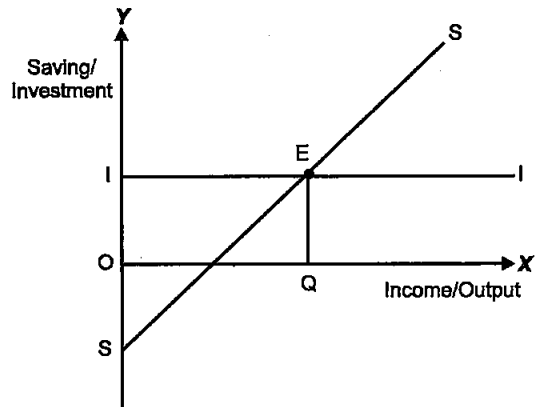
OR

Outline the steps required to be taken in deriving the Consumption Curve from the given Saving Curve. Use diagram.

Answer : An economy is in equilibrium when either of the two conditions are satisfied.

1. Aggregate Demand = Aggregate Supply
2. Saving = Investment (Saving and Investment Approach)

According to this approach, the equilibrium is determined at that point, where the saving and investment are equal to each other. In other words, the equilibrium is established, where leakages are equal to the injections.



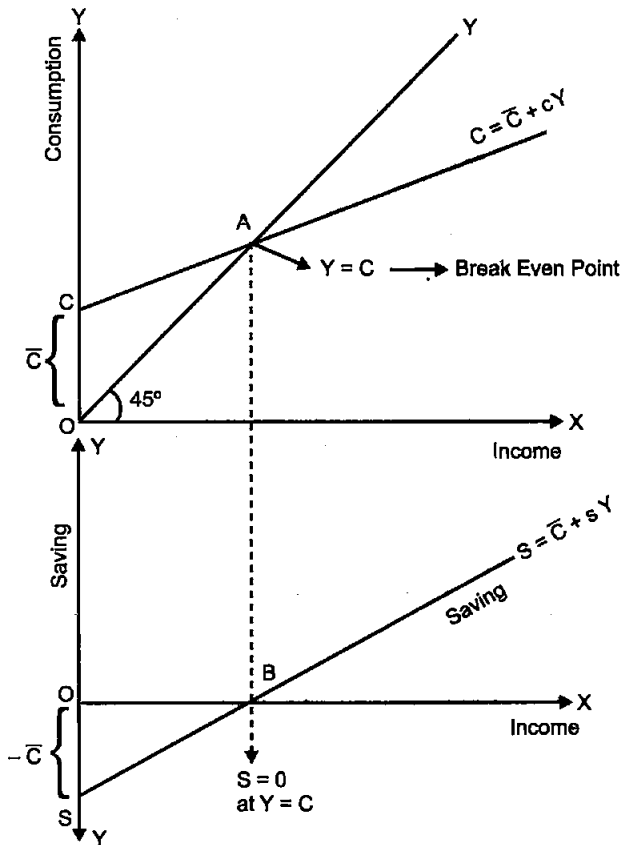
In the diagram, SS represents the saving curve and II represents the investment curve. The investment curve is a horizontal line as it represents the autonomous investment. At point E, Savings = Investment, thus point E represents the equilibrium point, where the saving curve SS and the investment curve II intersect. Accordingly, OQ is the equilibrium level of income (output).

To the left of point E, saving is less than investment. When I exceeds S i.e., when injections into the circular flow of income is greater than withdrawal from the income, implies that available supply of goods and services is less than what is required to meet the current demand for goods and services. In other words, we can understand this as low saving implies high consumption, which means that the output demand (due to high consumption) is greater than the planned output. Thus, there exists a portion of demand that remains unsatisfied, thereby, leading to an unplanned decline in the inventory. Thus to prevent inventories from falling, savings in the economy must be increase. This will happen till savings are again equal to investment and the equilibrium is restored.

To the right of point E, savings is greater than investment. When S exceeds I i.e., when withdrawal from the income is greater than injections into the circular flow of income, implies that total consumption expenditure is less than what is required to purchase the available supply of goods and services. In other words, we can understand this as high saving implies low consumption, which means that the output sold (due to low consumption) is less than the planned output. Thus, there exists a portion of produced output that remained unsold, thereby, leading to accumulation of unplanned inventory. Thus to prevent accumulation of inventories, savings in the economy will be reduced. This will happen till savings are again equal to investment and the equilibrium is restored.

OR

Derivation of Consumption Curve from Saving Curve



In the lower part of the diagram, $-\bar{C} + sY$ is the saving curve. OS equal to $-\bar{C}$ represents the saving at zero level of income.

Steps for the derivation of consumption curve from the saving curve are as follows :

- (i) **Corresponding to $-\bar{C}$** : in the saving function, we have \bar{C} in the consumption function. That is, it represents the autonomous consumption or the consumption at zero level of income. The autonomous consumption is financed by drawing down savings.
- (ii) At point B, saving equals zero. This suggests that whole of income is spent on consumption. That is, $Y = C$. This point is also known as the break-even point. This is shown by point A in the upper panel denoting $Y = C$.
- (iii) By joining the points C and A we derive the straight upward sloping consumption curve.
- (iv) CC is the required consumption curve.



Economics 2014 (Outside Delhi)

SET II

Time allowed : 3 hours

Maximum marks : 70

Note : Except for the following questions, all the remaining questions have been asked in previous set.

SECTION—A

- 3. Give the meaning of 'inelastic demand'. [1]
Answer : When the percentage change in quantity demanded is less than the percentage change in prices; it is said to be inelastic demand.
- 5. Define marginal revenue. [1]
Answer : Marginal revenue refers to an addition to the total revenue from producing one more unit of output.
- 8. When the price of a good rises from ₹10 to ₹12 per unit, its demand falls from 25 units to 20

units. What can you say about price elasticity of demand of the good through the 'expenditure approach'?** [3]

- 13. How does change in price of a substitute good affect the demand of the given good? Explain with the help of an example. [4]

Answer : Substitute goods refer to those goods that can be consumed in place of each other. In other words, they can be substituted with each other. For example, tea and coffee, colgate and pepsodent, cello pens and reynolds pen, etc. In case of substitute goods, if the price of one good increases, the consumer shifts his demand to the other (substitute) good *i.e.*, rise in the price of one good results in a rise in the demand of the other good and vice-versa.

** Answer is not given due to change in present syllabus

For example, if price of tea increases, then the demand for tea will decrease. As a result, consumers will shift their consumption towards coffee and the demand for coffee will increase. (Price of tea $\uparrow \Rightarrow$ Demand for coffee \uparrow). It should be noted that the demand for a good moves in the same direction as that of the price of its substitute.

18. What is floating exchange rate ? [1]

Answer : When the market forces of demand and supply determine the conversion rate of currencies, it is called floating exchange rate.

SECTION B

20. Define deflationary gap. [1]

Answer : Due to the deficiency in the aggregate demand, there exists a difference (or gap) between the actual level of aggregate demand and full employment level of demand. This difference is termed as deflationary gap.

24. When foreign exchange rate in a country is on the rise, what impact is it likely to have on imports and how? [3]

Answer : When foreign exchange rate in a country is on the rise then the demand for foreign currencies will be low. A rise in the exchange rate *i.e.*, \$1 = ₹ 40 to \$1 = ₹ 50 implies that the goods of abroad become more expensive *i.e.*, it now cost ₹ 50 to purchase a commodity worth \$1 instead of ₹ 40 earlier. This would result in a reduction in the demand for the foreign commodities. Thus, there will be fall in imports.

29. Calculate investment expenditure from the following data about an economy which is in equilibrium. [4]

National Income = 1000
Marginal propensity to save = 0.20

Autonomous consumption expenditure = 100

Answer : Given,
National Income (Y) = 1000
Marginal propensity to save (MPS) = 0.20
Autonomous consumption expenditure = 100
MPC (c) = 1 - MPS = 1 - 0.20 = 0.8
As we know in equilibrium,

$$Y = C + I$$

Since, $C = C + cY$

$$\begin{aligned} \text{We } Y &= C + cY + I \\ 1000 &= 100 + 0.8(1000) + I \\ 1000 &= 900 + I \end{aligned}$$

$$\Rightarrow I = 100$$

Therefore, investment expenditure is ₹100.

31. Calculate 'National Income' and 'Net National Disposable Income' from the following : [6]

(₹ in Arab)

- (i) Net change in stocks 50
- (ii) Government final consumption expenditure 100
- (iii) Net current transfers to abroad 30
- (iv) Gross domestic fixed capital formation 200
- (v) Private final consumption expenditure 500
- (vi) Net imports 40
- (vii) Depreciation 70
- (viii) Net factor income to abroad (-) 10
- (ix) Net indirect tax 120
- (x) Net capital transfers to abroad 25

Answer : $NNP_{FC} =$ Private final consumption expenditure + Government final consumption expenditure + Gross domestic fixed capital formation + Net change in stocks - Net imports - Depreciation - Net indirect tax - Net factor income to abroad
 $= 500 + 100 + 200 + 50 - 40 - 70 - 120 - (-10)$
 $= ₹ 630 \text{ Arab}$

Economics 2014 (Outside Delhi)

SET III

Time allowed : 3 hours

Maximum marks : 70

Note : Except for the following questions, all the remaining questions have been asked in previous set.

SECTION—A

1. Define variable cost. [1]

Answer : Variable cost always changes with the change in the level of output of a good.

5. What is meant by monotonic preferences? [1]

Answer : Some goods offer high level of satisfaction to the consumer then he prefers more of that good. This is known as monotonic preferences.

10. A consumer buys 27 units of a good at a price of ₹10 per unit. When the price falls to ₹9 per unit, the demand rises to 30 units. What can you

say about price elasticity of demand of the good through the 'expenditure approach'? [3]

11. How does change in price of a complementary good affect the demand of the given good? Explain with the help of an example. [4]

Answer : If we use a pair of goods together to satisfy a particular want or need then these goods are known as complementary goods. When one commodity's price falls then the other good's demand rises. e.g., car and petrol.

SECTION B

17. What is 'excess demand' in macroeconomics? [1]

Answer : At full employment level of output, the excess of aggregate demand over aggregate supply is called excess demand in macroeconomics.

19. What is 'managed floating exchange rate'? [1]

Answer : It is a system in which the foreign exchange rate is determined by market forces. In this system the central bank stabilises the value of currency like appreciation or depreciation.

23. Explain the effect of appreciation of domestic currency on exports? [3]

Answer : When the price of domestic currency rises, it is called the appreciation of domestic currency. The benefit of appreciation of domestic currency is that we will require less currency to buy foreign currency. Because of this foreign buyer will have to pay high price for the domestic good. It will decrease in their demand. i.e. reduces exports.

27. Calculate Autonomous Consumption Expenditure from the following data about an economy which is in equilibrium: [4]

National income = 500

Marginal Propensity to save = 0.30

Investment expenditure = 100

Answer : Given :

National income, Y = 500 MPS = 0.30

Investment expenditure, I = 100

Marginal propensity to consume, MPC = 1 - MPS
= 1 - 0.30 = 0.70

We know that, Y = C + I...[AD = AS and AD = CI]

$$\Rightarrow Y = \bar{C} + b(Y) + I \dots [Q C = \bar{C} + I]$$

$$\Rightarrow 500 = \bar{C} + 0.70 (500) + 100$$

$$\bar{C} = 500 - 350 - 100$$

$$\bar{C} = 50$$

32. Calculate the 'Net National Product at Market Price' and 'Gross National Disposable Income' from the following: [4,2]

(₹ in Arab)

(i) Closing stock	10
(ii) Consumption of fixed capital	40
(iii) Private final consumption expenditure	600
(iv) Exports	50
(v) Opening stock	20
(vi) Government final consumption expenditure	100
(vii) Imports	60
(viii) Net domestic fixed capital formation	80
(ix) Net current transfers to abroad	(-) 10
(x) Net factor income from abroad	30

Answer : NNP_{MP}

= Private final consumption expenditure + Government final consumption expenditure + Net domestic fixed capital formation + [Closing stock - Opening stock] + [Exports - Imports] - Net factor income from abroad

$$= (iii) + (vi) + (viii) + [(i) - (v)] + [(iv) - (vii)] - (x)$$

$$= 600 + 100 + 80 + [10 - 20] + [50 - 60] - 30$$

$$= 780 - 10 - 10 - 30 = ₹ 730 \text{ Arab}$$



Economics 2014 (Delhi)

SET I

Time allowed : 3 hours

Maximum marks : 70

SECTION—A

1. Unemployment is reduced due to the measures taken by the government. State its economic value in the context of production possibilities

frontier. [1]

Answer : Due to the measures taken by the government to reduce the unemployment, the point which was earlier below the production possibility curve (indicating under utilisation

** Answer is not given due to change in present syllabus

of resources) will shift close to or on the PPC (indicating better utilisation of resources). Hence, economic value is reflected in terms of increased output and income.

2. Define budget set. [1]

Answer : A budget set or opportunity set includes all possible consumption bundles that someone can afford with the given the prices of goods and the person's income level.

3. What is meant by revenue in microeconomics? [1]

Answer : In microeconomics, revenue(R) refers to money receipts of a producer from the sale of his output.

4. Give meaning of 'returns to a factor'. [1]

Answer : Returns to a factor means the change in output when an additional unit of variable input is employed. The Law of Variable Proportion can be regarded as 'Returns to a Factor'.

5. What is perfect oligopoly? [1]

Answer : Perfect oligopoly is a market form in which a market or industry is dominated by a small number of sellers (oligopolists) who produce homogenous products. For example, Cement industry or Chemical industry.

6. Explain the central problem 'for whom to produce' [3]

Answer : The central problem being "for whom to produce" basically throws light on the distribution mix of the final goods and services produced. The distribution of the final goods and services is equivalent to the distribution of National Income (or National Product) among the factors of production such as land, labour, capital and entrepreneur.

For instance, imagine an economy producing two goods – normal rice (priced at ₹15/kg) and graded rice (priced at ₹100/kg). If the economy decided to cater to the needs of the lower section of the society, then it would produce more of normal rice and less of the graded rice.

On the other hand, if the economy decided to cater to the needs of the higher section of the society, then it would produce more of the graded rice and less of the normal rice.

7. A consumer buys 18 units of a good at a price of ₹9 per unit. The price elasticity of demand for the good is (-)1. How many units the consumer will buy a price of ₹10 per unit? Calculate. [3]

Answer : Given, $Q_1 = 18$, $Q_2 = ?$, $P_1 = ₹9$ and $P_2 = ₹10$

Therefore, $DQ = Q_2 - Q_1$
 $DP = P_2 - P_1 = ₹1$

$$E_d = \frac{\Delta Q}{Q} \times \frac{P}{\Delta P}$$

$$-1 = \frac{Q_2 - Q_1}{Q} \times \frac{P}{P_2 - P_1}$$

$$-1 = \frac{(Q_2 - 18)}{18} \times \frac{9}{10 - 9}$$

$$-1 = \frac{Q_2 - 18}{18} \times \frac{9}{1}$$

$$-2 = Q_2 - 18$$

$$-2 + 18 = Q_2$$

$$Q_2 = 16$$

Therefore, the consumer will buy 16 units of the good at a price of ₹10

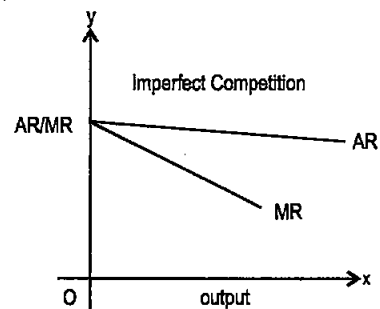
8. State the relation between marginal revenue and average revenue. [3]

OR

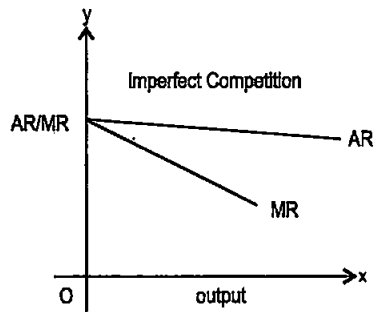
State the relation between total cost and marginal cost.

Answer : The relationship between marginal revenue and average revenue can be divided under two forms of market – under Perfect Competition market and under Imperfect Competition market.

Under Perfect Competition market, average revenue equals marginal revenue throughout all output levels. Graphically, marginal revenue curve is a straight horizontal line parallel to the x-axis and coincides with the average revenue curve.



Under Imperfect Competition market, as output increases both average revenue and marginal revenue fall. However, average revenue remains greater than marginal revenue at all levels of output. Graphically, both average revenue curve and marginal revenue curve are downward sloping but the AR curve remains above the marginal revenue curve.



MR may even go to zero or negative but AR curve continues to be positive.

OR

In economics and finance, marginal cost is the change in the total cost that arises when the quantity produced has an increment by unit. Marginal Cost is derived from Total Cost by using the following formula :

$$MC_n = TC_n - TC_{n-1}$$

where,

MC_n represents Marginal Cost of producing 'n' units of output

TC_n represents Total Cost of producing 'n' units of output

TC_{n-1} represents Total Cost of producing 'n-1' units

While, Total Cost refers to the total cost of production that is incurred by a firm in the short run to carry out the production of goods and services. It is the aggregate of expenditure incurred on fixed factors as well as variable factors. Total cost can be derived by summing up marginal cost at all the levels of output.

9. What is the behaviour of average fixed cost as output is increased ? Why is it so? [3]

Answer : Average Fixed Cost can be described as the fixed cost per unit of output produced. It is described by dividing the entire Fixed Cost by quantity of output produced. That is,

$$AFC = TFC / Q$$

where, TFC represents Total Fixed Cost

Q represents units of output produced

Average fixed cost continues to fall with an increase in the level of output but, it never reaches to zero because average fixed cost is a rectangular hyperbola. That is, it can never be zero. This happens because AFC is defined as the ratio of TFC to output. We know that TFC remains constant throughout all the output levels and as output increases, with TFC being constant, AFC decreases. When output level is close to zero, AFC is infinitely large and by

contrast when output level is very large, AFC tends to be zero but never becomes zero. AFC can never be zero because it is a rectangular hyperbola and it never intersects the x-axis and thereby it can never be equal to zero.

10. Why are the firms said to be interdependent in an oligopoly market? Explain. [3]

Answer : Firms are said to be interdependent in an oligopoly market because the firms under such a market structure experience a high degree of mutual interdependence. It is because the price and the output decisions of the firms are interdependent on each other. The price and output policy of a firm affects the policies and profit of another firm. This is because when one firm lowers (or rises) its prices, the rival firms may or may not follow suit. This makes the demand curve under the oligopoly market structure indeterminate, thereby making the firms mutually interdependent in an oligopoly market.

11. A consumer consumes only two goods. Explain consumer's equilibrium with the help of utility analysis. [4]

OR

A consumer consumes only two goods A and B and is in equilibrium. Show that when price of good B falls, demand for B rises. Answer this question with the help of utility analysis.

Answer : The consumer's equilibrium in this scenario can be explained by the Law of Equi-Marginal Utility. According to this, a consumer allocates his expenditure between two commodities in such a manner that the utility derived from each additional unit of the rupee spent on each of the commodities is equal to the marginal utility of money. This is algebraically described as follows :

$$MU_x / P_x = MU_y / P_y = MU_n / P_n = MU_M$$

where,

MU_M represents the marginal utility of money

MU_x represents the marginal utility of good x

MU_y represents the marginal utility of good y

Let us suppose that MU_M is ₹ 10 and the price of both the goods i.e., P_x and P_y is same at ₹ 5. MU_x and MU_y for different units of goods consumed is tabulated below.

Units	MU_x	MU_y
1	57	62
2	55	58
3	50	53
4	47	51
5	42	50
6	35	45
7	30	40

From the schedule, we can conclude that the consumer attains equilibrium when he consumes 3 units of good x and 5 units of good y. At this consumption bundle, the consumer's equilibrium is Featured by :

$$\frac{MU_x}{P_x} = \frac{MU_y}{P_y} = MU_M$$

i.e., $\frac{50}{5} = \frac{50}{5} = 10$

OR

In this situation, the consumer's equilibrium is attained at that point, where Q the utility derived from each additional unit of the rupee spent on each of the goods is equal. That is, Marginal Utility of a Rupee spent on the good A (i.e., MU_A/P_A) is equal to the Marginal Utility of a Rupee spent on the good B (i.e., MU_B/P_B), which in turn is equal to the Marginal Utility of Money (MU_M). That is, $MU_A/P_A = MU_B/P_B = MU_M$

If price of the good B falls, then the value of the fraction (i.e., MU_B/P_B) increases.

Mathematically, this implies : $MU_B/P_B > MU_A/P_A = MU_M$

In such a situation, the demand for good B rises and consumer would increase his consumption of good B. He will continue to increase the consumption of good B until the equality between the marginal utilities of each of the goods become equal to the marginal utility of money. At this situation, the equilibrium is restored. That is, $MU_A/P_A = MU_B/P_B = MU_M$

12. What happens to the demand of a good when consumer's income changes? Explain. [4]

Answer : The demand for goods is affected by change in the income of the buyer. The effect of change in income on the demand depends on the Quality of the good.

Demand for normal goods makes a positive relationship with buyer's income. As income increases, the demand for normal goods also increases and vice-versa.

Demand for inferior goods (such as coarse cereals) shares a negative relationship with consumer's income. As the income increases, the demand for inferior goods falls and vice-versa.

Giffen goods are those goods which are highly inferior. Similar to the inferior goods, demand for Giffen goods also shares a negative relationship with the income.

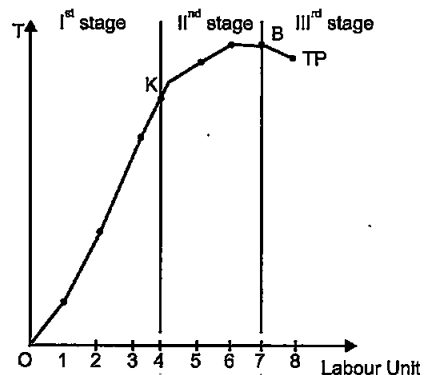
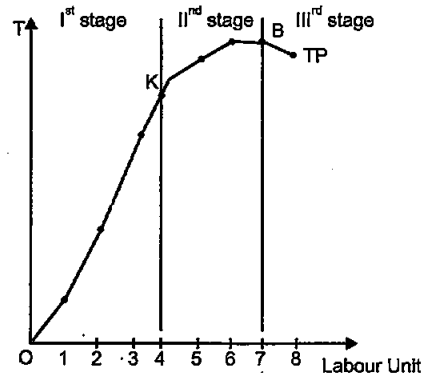
13. State the behaviour of marginal product in the law of variable proportions. Explain the cause of this behaviour. [4]

Answer : Law of variable proportions

As per the law of variable proportion, if more and more units of variable factor (labour) are combined with the same quantity of fixed factor (capital) then initially the total product will increase. But gradually, after a point, the total product will fall.

Behaviour of MP

Stages	Stage's Name	MP	Range
I	Increasing Returns to a factor	MP increases till point U	From 0 to point U
II	Diminishing Returns to a factor	MP falls and touches x-axis	From U onwards
III	Negative Returns to a factor	MP becomes negative	Beyond x-axis



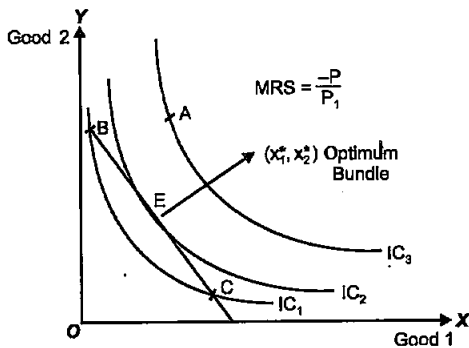
The main reason behind this behaviour of MP is Law of Diminishing Marginal Product. According to the Law of Diminishing Marginal Product, if the employment of variable factor is kept on increasing along with the constant level of the fixed factor, then finally a point will be reached where after, the marginal product of the variable factor will start falling and after this point the marginal product of any additional variable factor can be zero and even be negative.

14. Explain the conditions of consumer's equilibrium with the help of the indifference curve analysis. [6]

OR

Explain the three properties of the indifference curves.

Answer : As per the Indifference Curve Approach, a consumer attains equilibrium at the point where the budget line is tangent to the indifference curve and the IC is convex to the origin at the point of tangency. This optimum point is characterized by the following equality : It is, Absolute value of the slope of the IC = Absolute value of the slope of the budget line.



In the above figure, point E depicts consumer's equilibrium. At this point, the budget line is tangent to the indifference curve IC_2 . The optimum bundle is denoted by (x_1^*, x_2^*) . This point is the optimum or the best possible consumption bundle, where the consumer is maximizing his satisfaction.

All other points lying on the budget line (such as point B and point C) are inferior to (x_1^*, x_2^*) as they lie on a lower IC (i.e., IC_1). Thus, the consumer will rearrange his consumption and will attempt to reach the equilibrium point, where the marginal rate of substitution is equal to the price ratio.

Let's suppose that instead of point E, the consumer is at point B. At this point, MRS is greater than the price ratio. In this case, the consumer would tend to move towards point E by giving-up some amount of good 2 in order to consume more units of good 1. The consumer will continue to give-up the consumption of good 2. Until, he reaches the point E, where, MRS becomes equal to the price ratio.

On the other hand, for all other points C, MRS is lesser than the price ratio. In this case, the consumer would tend to move towards point E by giving up some amount of good 1 to consume more units of good 2.

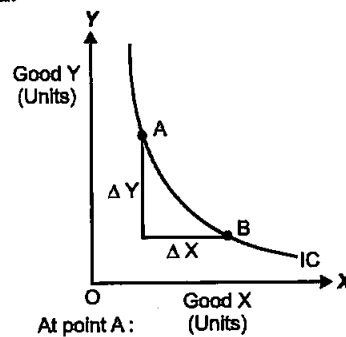
Thus, we can conclude that if the consumer is consuming any bundle other than the optimum one, then he would rearrange his consumption bundle in such a manner that the equality between the MRS and the price ratio is established and he

attains that state of equilibrium.

OR

There are three properties of Indifference Curve because increase relation between good x & Y .

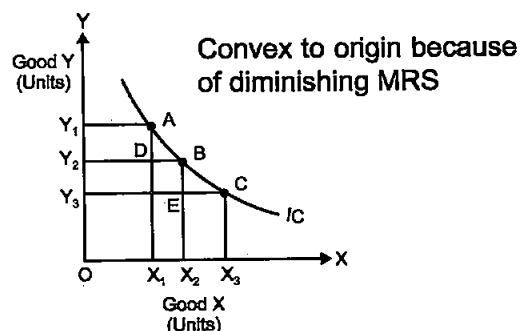
- 1. Indifference curves are downward sloping to the right :** Downward slope of the indifference curve to the right implies that a consumer cannot simultaneously have more of both the goods. An increase in the quantity of one good is associated with the decrease in the quantity of the other good. This is in accordance with the assumption of monotonic preferences.
- 2. Slope of IC :** The Slope of an IC is given by the Marginal Rate of Substitution (MRS). Marginal rate of substitution refers to the rate at which a consumer is willing to substitute one good for each additional unit of the other good.



At point A :

Slope of Indifference Curve (MRS) = $\Delta Y / \Delta X$
i.e., MRS shows the rate at which the consumer is willing to sacrifice good Y for an additional unit of good X.

- 3. Shape of Indifference Curve :** As we move down along the Indifference curve to the right, the slope of IC (MRS) decreases. This is because as the consumer consumes more and more of one good, the marginal utility of the good falls. On the other hand, the marginal utility of the good which is sacrificed rises. In other words, the consumer is willing to sacrifice less and less for each additional unit of the other good consumed. Thus, as we move down the IC, MRS diminishes. This suggests the convex shape of indifference curve.



In the above figure, IC is the Indifference Curve.

At point A, $MRS_{xy} = AD / AB$
 At point B, $MRS_{xy} = BE / BC$
 $BE / EC < AD / DB$
 MRS at B $<$ MRS at A, so MRS has fallen.

15. From the following information about a firm, find the firm's equilibrium output in terms of marginal cost and marginal revenue. Give reasons. Also find profit at this output. [6]

Output (units)	Total Revenue (₹)	Total Cost (₹)
1	7	8
2	14	15
3	21	21
4	28	28
5	35	36

Answer :

Output (units)	Total Revenue (₹)	Total Cost (₹)	Marginal Revenue (₹)	Marginal Cost (₹)	Profits (TR-TC)
1	7	8	—	—	-1
2	14	15	7	7	-1
3	21	21	7	6	0
4	28	28	7	7	0
5	35	36	7	8	-1

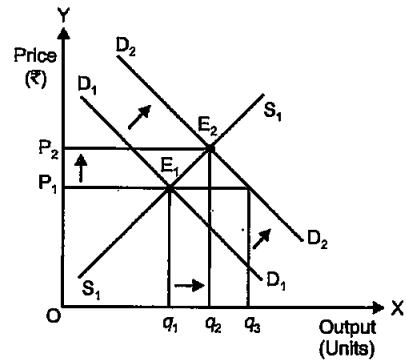
According to the $MR-MC$ approach, the firm (or producer) attains its equilibrium, where the following two necessary and sufficient conditions are fulfilled.

- $MR = MC$
- MC must be rising after the equilibrium level of output.

Thus, by looking at the table given above, we can say that the firm is in equilibrium at output equal to 4 units. When output is 4 units, $MR = MC$ (thus, the first condition is satisfied) and MC increases after the 4th unit of output (therefore, the second condition is satisfied).

At output less than 4 units, if the firm produces slightly lesser level of output than 4 units, then the firm is facing price that exceeds the MC . This implies that higher profits can be achieved by increasing the level of output to 4 units. On the other hand, if the firm produces slightly higher level of output than 4 units, then the firm's MC exceeds its MR , thereby making profits negative. This implies that higher profits can be achieved by reducing the output level to 4 units. Thus, 4 unit of output is the producer's equilibrium and 4 units of output is the profit maximizing output level, where $Price = MC$ and also MC is rising.

16. Market of a commodity is in equilibrium. Demand for the commodity "increases". Explain the chain of effects of this change till the market again reaches equilibrium. Use diagram. [6]
 Answer :



An increase in the demand for the commodity leads to an increase in the equilibrium price and quantity.

Let us understand how it happens : D_1D_1 and S_1S_1 represent the market demand and market supply respectively. The initial equilibrium occurs at E_1 , where the demand and the supply intersect each other. Due to the increase in the demand for the commodity, the demand curve will shift rightward parallelly from D_1D_1 to D_2D_2 , while the supply curve will remain unchanged. Hence, there will be a situation of excess demand, equivalent to $(q_3 - q_1)$. Consequently, the price will rise due to excess demand. The price will continue to rise until it reaches E_2 (new equilibrium), where D_2D_2 intersects the supply curve S_1S_1 . The equilibrium price increases from P_1 to P_2 and the equilibrium output increases from q_1 to q_2 .

SECTION B

- What are demand deposits? [1]
 Answer : Funds held in an account from which deposited funds can be withdrawn at any time without any advance notice to the depository institution are demand deposits. The depositor can withdraw the required amount from the account through cheques.
- What is involuntary unemployment? [1]
 Answer : Involuntary unemployment is a situation when a person who is able and is willing to work does not get work at the going wage rate.
- Define marginal propensity to consume. [1]
 Answer : Marginal Propensity to Consume is the ratio of change in the consumption expenditure and change in the disposable income. Algebraically, $MPC = \Delta C / \Delta Y$

20. Define government budget. [1]

Answer : A government budget is a government document presenting the government's proposed revenues and spending for a financial year. It also presents the government's report on the financial performance during the previous fiscal year.

21. Give meaning of balance of trade. [1]

Answer : Balance of trade shows the balance of exports and imports of all the physical or visible goods of a country during a given year.

22. Define externalities. Give an example of negative externality. What is its impact on welfare? [1]

Answer : An externality is said to occur when the actions of one entity bears an impact on other entities. These externalities can be positive as well as negative. A positive externality is when the action of one person positively affects the others. For instance plantation by a person provides fresh air to the neighbours. Also, it contributes to the environment and at the same time, increases the welfare of the neighbours. Thus, plantation by a person affects the life of the people living in the surrounding areas.

23. Explain the significance of 'store of value' function of money.** [3]

OR

Explain the significance or 'medium of exchange' function of money.**

24. Is the following revenue expenditure or capital expenditure in the context of government budget? Give reasons. [3]

- (i) Expenditure on collection of taxes.
- (ii) Expenditure on purchasing computers.

Answer : (i) Expenditure on collection of taxes is a revenue expenditure. This type of expenditure includes the government expenditure which does not cause any reduction in government liabilities and also does not create assets for the government.

(ii) Expenditure on purchasing computers is a capital expenditure. This expenditure includes that government expenditure, which creates assets for the government.

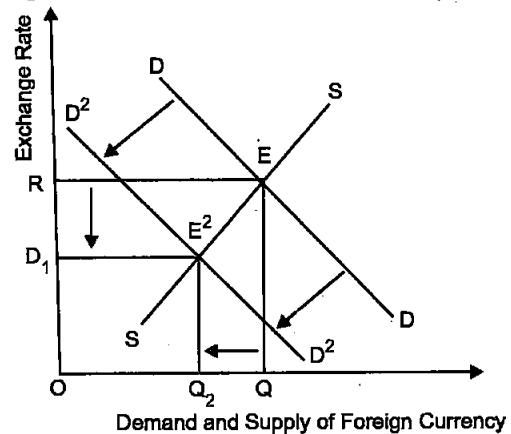
25. Explain the meaning of balance of payments deficit. [3]

Answer : The deficit in the BOP is governed by the balance of autonomous transactions in the BOP. Autonomous items refer to those international economic transactions that are undertaken with the sole motive of earning profit. The BOP would show a deficit if the autonomous receipts are lesser than the autonomous payments. As autonomous receipts implies a receipt of foreign exchange and autonomous payments implies a payment

of foreign exchange, so, it can be said that BOP would show a deficit if the foreign exchange receipts are less than foreign exchange payments. In other words, the BOP deficit would be reflected in a depletion of foreign exchange reserves of the country.

26. Recently Government of India has doubled the import duty on gold. What impact is it likely to have on foreign exchange rate and how? [3]

Answer : With a rise in the import duty of gold, the import of gold will fall. This reduces the demand



for foreign currency. With the supply of foreign currency remaining same, the foreign exchange rate would fall. This implies appreciation of rupees. This can be explained with the help of the following diagram :

In the diagram, DD and SS are the initial demand curve and supply curve for foreign currency respectively. E is the initial equilibrium point, with OR as the equilibrium exchange rate. A fall in the demand for foreign currencies (due to fall in imports) shifts the demand curve from DD to D'D'. With the shift in demand curve, new equilibrium is established at point E', where the exchange rate falls from OR to OR₁. A fall in the exchange rate implies currency appreciation.

27. Define money supply and explain its components. [4]

OR

Explain the 'lender of last resort' function of central bank.

Answer : Supply of money refers to the total stock of money (in the form of currency notes and coins) held by the people of an economy at a particular point of time. The following are the components of money :

(i) **Currency component :** It includes currency notes and coins which are issued by the monetary

** Answer is not given due to change in present syllabus

Authority of a country, collectively called the currency Component of the money supply. In India, RBI issues the currency notes of various denominations (such as ₹ 2, ₹ 5, ₹ 100, ₹ 500, ₹ 2000) and the Government of India issues currency coins and notes of denomination less than and equal to ₹ 1.

(ii) **Deposit component** : The savings or the current account deposits held by the public in various commercial banks of a country. Apart from the currency notes and coins, the stock of money also includes the Saving Deposits and the Current Account Deposits held by the public in various commercial banks.

OR

Lender of last resort function of Central Bank implies that the Central Bank is under the obligation to provide funds against securities to the commercial bank as and when needed by them. When a commercial bank faces financial crisis and fails to obtain funds from other sources, then central bank provides them the financial assistance in the form of credit. This role of the central bank saves the commercial banks from being bankrupt. Thus, the central bank plays the role of a guarantor for the commercial banks and maintains a sound and healthy banking system in the economy.

28. Calculate investment expenditure from the following data about an economy which is in equilibrium : [4]

National income = 1000

Marginal propensity to save = 0.25

Autonomous consumption expenditure = 200.

Answer : We know,

$$Y = C + I$$

$$C = \bar{c} + cY$$

$$\therefore Y = \bar{c} + cY + I$$

Where \bar{c} = autonomous consumption (200)

c = marginal propensity to consume

$(1 - MPS = 1 - 0.25 = 0.75)$

Y = national tricone = ₹ 1000

I = Investment expenditure by putting the value

$$1000 = 200 + 0.75 \times 1000 + I$$

$$I = 1000 - (200 + 750)$$

$$= 1000 - 950$$

$$I = ₹ 50$$

29. Government raises its expenditure on producing public goods. Which economic value does it reflect? Explain.** [4]

30. Calculate national income and gross (national disposable income)** from the following : [6]

	(₹ Arab)
(i) Net current transfers to abroad	(-) 15
(ii) Private final consumption expenditure	600
(iii) Subsidies	20
(iv) Government final consumption expenditure	100
(v) Indirect tax	120
(vi) Net imports	20
(vii) Consumption of fixed capital	35
(viii) Net change in stocks	(-) 10
(ix) Net factor income to abroad	5
(x) Net domestic capital formation	110

Answer : National Income = Private Final Consumption Expenditure + Government Final Consumption Expenditure - Net Imports + (Net Domestic Capital Formation + Depreciation) - Depreciation - (Indirect Taxes - Subsidies) - Net Factor Income to Abroad or,

$$\text{National Income (NNP}_{FC}) = 600 + 100 + (-20) + (110 + 35) - 35 - (120 - 20) - 5 = ₹ 685 \text{ Arab.}$$

31. Giving reason explain how should the following be treated in estimating gross domestic product at market price? [6]

(i) Fees to a mechanic paid by a firm.

(ii) Interest paid by an individual on a car loan taken from a bank.

(iii) Expenditure on purchasing a car for use by a firm.

Answer: (i) Fees paid to a mechanic by a firm will be included while estimating the gross domestic product at market price. This is because the fees in being paid in return for the services offered by the mechanic. Thus, as GDP_{MP} includes the market value of all the goods and services produced in a country, it will be included.

(ii) Interest paid by an individual on a car loan taken from a bank will be included while estimating the gross domestic product at market price. This is because it is an income for the bank. Thus, it will be a part of GDP_{MP} .

(iii) Expenditure on purchasing a car for use by a firm will be included while estimating the gross domestic product at market price. This is because the car is being purchased by the firm for its usage and not for other purposes.

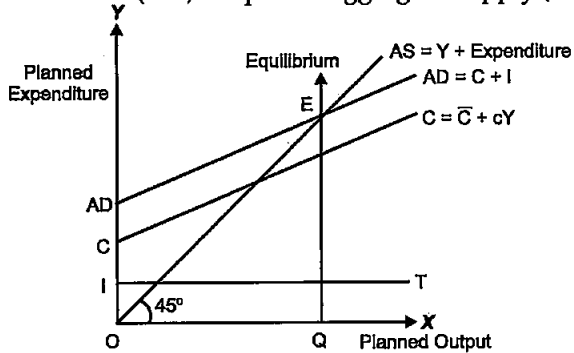
32. Explain national income equilibrium through aggregate demand and aggregate supply. Use diagram. Also explain the changes that take place in an economy when the economy is not in equilibrium. [6]

OR

** Answer is not given due to change in present syllabus

Outline the steps required to be taken in deriving saving curve from the given consumption curve. Use diagram.

Answer : Aggregate Demand and Aggregate Supply approach (AD and AS approach). Under this approach, the equilibrium level of income is determined at the point where Aggregate Demand (AD) is equal to Aggregate Supply (AS).



In this diagram, consumption curve is depicted by C and the investment curve is depicted by the horizontal straight line parallel to the output/income axis. Summing-up the investment curve and consumption curve, we get the Aggregate Demand curve represented by $AD = C + I$. The Aggregate Supply curve is represented by the 45° line. Throughout this line, the planned expenditure is equal to the planned output. The point E is the equilibrium point, where the planned level of expenditure (AD) is equal to the planned level of output (AS). Accordingly, the equilibrium level of output (income) is OQ.

In case, if $AD > AS$, then it implies a situation, where the total demand for goods and services is more than the total supply of the goods and services. This implies a situation of excess demand. Due to the excess demand, the producers draw down their inventory and increases production. The increase in production requires hiring more factors of production, thereby increases employment level and income. Finally, the income will rise sufficiently to equate the AD with AS, thus the equilibrium is restored back.

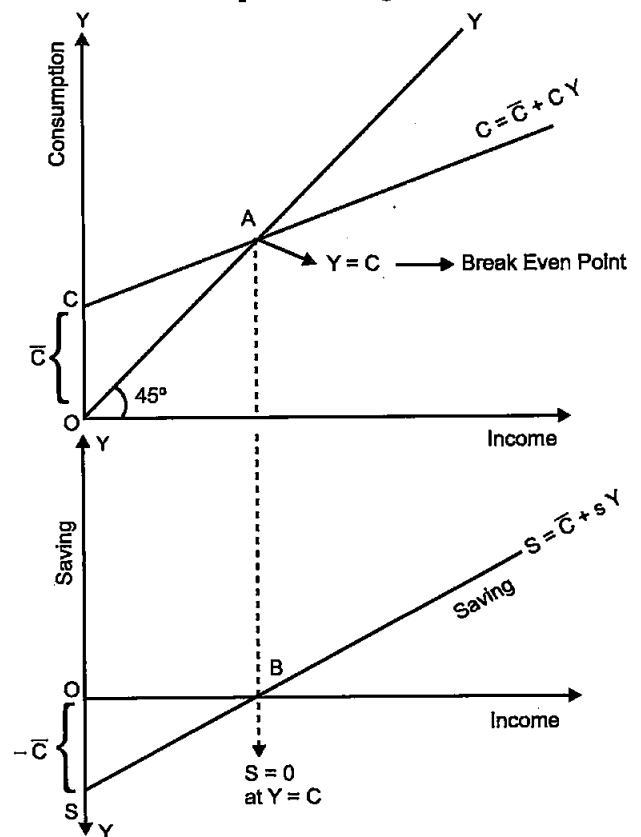
On the other hand, in case, $AS > AD$, then it implies a situation, where the total supply of goods and services is more than the total demand for the goods and services. This implies a situation of deficit demand. Due to the deficit demand, the producers experience piling-up of stock of unsold goods, i.e., inventory accumulation. This would force the producers to cut-back the production,

thereby results in the reduced employment of factors of production. This leads to fall in the income and output. Finally, the income and output will fall sufficiently to equate the AD with AS, thus the equilibrium is restored back.

OR

The following figure, is the consumption curve. The 45° line is the aggregate supply curve. At point A, consumption = income i.e., ($Y = C$) represents the autonomous consumption i.e., consumption at zero level of income. Steps for derivation of supply curve from consumption curve is as follows :

- (i) Corresponding to in the consumption function we have-in the saving function. That is, there are negative savings equal to autonomous consumption at $Y = 0$. This is represented by S on the negative axis in the lower panel.
- (ii) At point A ($Y = C$). This implies that all the income is spent on consumption expenditure. Thus savings equal to zero. This is shown as $S = 0$ in lower panel. This point is also known as the Break-even point.
- (iii) Beyond the break-even point, by connecting points S and B we derive the straight upward sloping saving curve.
- (iv) SS is the required saving curve.



Economics 2014 (Delhi)**SET II****Time allowed : 3 hours****Maximum marks : 70**

Note : Except for the following questions, all the remaining questions have been asked in previous set.

SECTION—A

3. Define budget line. [1]

Answer : A budget line is a line which shows different combination of two goods which a consumer can attain at his given income and market price of the goods.

5. What is meant by cost in economics ? [1]

Answer : Cost refers to the expenditure incurred by a producer on factor and non-factor inputs for a given amount of output of a commodity.

8. Price elasticity of demand of a good is (-)1. When its price per unit falls by one rupee, its demand rises from 16 to 18 units. Calculate the price before change. [3]

Answer : Given,

$$Q_1 = 16$$

$$Q_2 = 18$$

$$DP = -1$$

$$\text{We know, } DQ = Q_2 - Q_1 = 18 - 16 = 2$$

$$E_d = \frac{\Delta Q}{Q} \times \frac{P}{\Delta P}$$

$$-1 = \frac{2}{16} \times \frac{P}{(-1)}$$

$$-1 = \frac{(-P)}{8}$$

$$P = 8$$

Therefore, price before change is ₹ 8

13. Explain the change in demand of a good on account of change in prices of related goods. [4]

Answer : Quantity demanded of a good depends on the price of other goods (*i.e.*, related goods). Any two goods are considered to be related to each other, when the demand for one good changes in response to the change in the price of the other good. The related goods can be classified into following two categories.

1. Substitute Goods

Substitute goods refer to those goods that can be consumed in place of each other. In other words, they can be substituted for each other. For example, tea and coffee, colgate and pepsodent, cello pens and reynolds pen, etc. In case of substitute goods,

if the price of one good increases, the consumer shifts his demand to the other (substitute) good *i.e.*, rise in the price of one good result in a rise in the demand of the other good and vice-versa.

For example, if price of tea increases, then the demand for tea will decrease. As a result, consumers will shift their consumption towards coffee and the demand for coffee will increase. (Price of Tea $\uparrow \Rightarrow$ Demand for Coffee \uparrow). It should be noted that the demand for a good moves in the same direction as that of the price of its substitute. If PT increases \Rightarrow DT decreases \Rightarrow DC increases \Rightarrow Tea and coffee are substitute goods.

2. Complementary Goods

Complementary goods refer to those goods that are consumed together. The joint consumption of these goods satisfies wants of the consumer. For example : Tea and sugar, ink pen and ink, printer and paper, etc. In case of complementary goods, if the price of one good increases then a consumer reduces his demand for the complementary good as well, *i.e.*, a rise in the price of one good results in a fall in demand of the other good and vice-versa.

For example, sugar and tea are complementary goods. Since, sugar and tea is consumed together, so a rise in price of tea reduces the demand of sugar and vice-versa. It should be noted that demand for a good moves in the opposite direction of the price of its complementary goods. (Price of tea $\uparrow \Rightarrow$ demand for sugar \downarrow) If PTea increases $\uparrow \Rightarrow$ DTea decreases $\downarrow \Rightarrow$ DSugar decreases $\uparrow \Rightarrow$ Tea and Sugar are complementary goods.

SECTION B

18. What is 'current account deficit' in the balance of payments? [1]

Answer : When export of visible items, invisible items and unilateral transfers are less and import of these items are more, it leads to current account deficit.

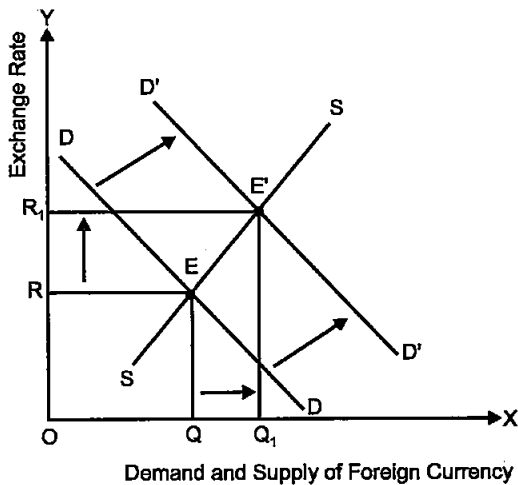
OR

When foreign exchange receipts in current account fall, as compared to foreign exchange payments, it is known as current account deficit.

24. Visits of foreign countries for sightseeing etc., by the people of India is on the rise. What will be its likely impact on foreign exchange rate and how? [3]

Answer : With the increase in the foreign visit by the people India, the demand for foreign

currency increases. With the supply of foreign currency remaining same, the foreign exchange rises, implying a depreciation of rupees. This can be explained diagrammatically as follows.



In the diagram, DD and SS are the initial demand curve and supply curve for foreign currency respectively. E is the initial equilibrium point, with OR as the equilibrium exchange rate. An increase in the demand for foreign currencies shifts the demand curve from DD to $D'D'$. With the shift in demand curve, new equilibrium is established at point E' where the exchange rate rises from OR to OR_1 and the demand and supply of foreign currencies rises from OQ to OQ_1 . A rise in the exchange rate implies currency depreciation.

29. Calculate autonomous consumption expenditure from the following data about an economy which is in equilibrium. [4]

National income = 1200

Marginal propensity to save = 0.20

Investment expenditure = 100

Answer :

We have,

$$Y = C + I$$

where,

I is investment expenditure which is given as 100. Y is income which is given as 1200 and, $C = \bar{C} + cY$ here, \bar{C} is autonomous consumption expenditure is marginal propensity to consumer, $c = 1 - \text{marginal propensity to consume (mps)}$ so, $c = 1 - 0.20 = 0.80$. Thus, putting the values in the equation, $Y = \bar{C} + cY + I$ or, $1200 = \bar{C} + 0.80 \times 1200 + 100$ or, $\bar{C} = 1200 - 1060 = 140$. Thus, autonomous consumption expenditure is 140.

31. Calculate 'net national product' at factor cost and 'private income**' from the following: [6]

(i) National debt interest 60

(₹ Arab)

(ii) Wages and salaries 600

(iii) Net current transfers to abroad 20

(iv) Rent 200

(v) Transfer payments by government 70

(vi) Interest 300

(vii) Net domestic product at factor cost accruing to government 400

(viii) Social security contribution by employers 100

(ix) Net factor income paid to abroad 50

(x) Profits 300

Answer : $NNP_{FC} = \text{Wages and salaries} + \text{Employers contribution to social security} + \text{Rent} + \text{Interest} + \text{Profit} - \text{Net Factor Income to Abroad}$ or,

$$NNP_{FC} = 600 + 100 + 200 + 300 + 300 - 50 = ₹1,450 \text{ Arab.}$$

●●

Economics 2014 (Delhi)

SET III

Time allowed : 3 hours

Maximum marks : 70

Note : Except for the following questions, all the remaining questions have been asked in previous set.

SECTION—A

1. Define marginal revenue. [1]

** Answer is not given due to change in syllabus

Answer : Marginal Revenue (MR) is an addition to the Total Revenue (TR) from selling an additional unit of output.

5. Define indifference map. [1]

Answer : It is a set of indifference curves, drawn in graph called IDmap corresponding

to different satisfaction levels of a consumer. A higher indifference curve represents higher level of satisfaction.

10. A consumer buys 30 units of a good at a price of ₹10 per unit. Price elasticity of demand for the good is (-1). How many units the consumer will buy at a price of ₹9 per unit? Calculate. [3]

Answer : Given, $Q_1 = 30, Q_2 = ?, P_1 = ₹ 10, P_2 = ₹ 9$ and $E_d = -1$

Therefore, $DQ = Q_2 - Q_1$ and $DP = P_2 - P_1 = ₹ (-1)$

$$E_d = \frac{\Delta Q}{Q} \times \frac{P}{\Delta P}$$

$$-1 = \frac{(Q_2 - Q_1)}{Q_1} \times \frac{P_1}{\Delta P}$$

$$-1 = \frac{(Q_2 - 30)}{30} \times \frac{10}{(-10)}$$

$$3 = Q_2 - 30$$

$$Q_2 = 33 \text{ units}$$

Therefore, the consumer will buy 33 units of the good at a price of ₹ 9.

11. What is market demand for a good ? Name the factors determining market demand. [4]

Answer : Market demand for a good is the sum total of demands of all the consumers in a market at a particular price. Factors determining market demand are :

1. Market Price of Good

Other things remaining constant, as the market price of a good rises (or falls), the quantity demanded of the good falls (or rises).

2. Market Price of Other Goods

Quantity demanded of a good also depends on the market price of other goods (i.e., related goods). The related goods can be classified into following two categories.

(i) Substitute Goods

In case of substitute goods, rise in the price of one good results in a rise in the demand of the other good and vice-versa.

(ii) Complementary Goods

In case of complementary goods, a rise in the price of one good results in a fall in demand of the other good and vice-versa.

3. Income of the consumer

Change in the income of the consumer also affects the market demand for goods. The effect of change in income on the market demand depends on the type of the good.

The market demand for normal goods shares a positive relationship with consumer's income. The market demand for inferior goods (such as

coarse cereals) shares a negative relationship with consumer's income.

The market demand for giffen goods also shares a negative relationship with the income.

4. Consumer's tastes and preferences

Other things being equal, if all the consumers prefer a commodity over other, then the market demand for that commodity increases and vice-versa.

5. Population size – Number of consumers in the market

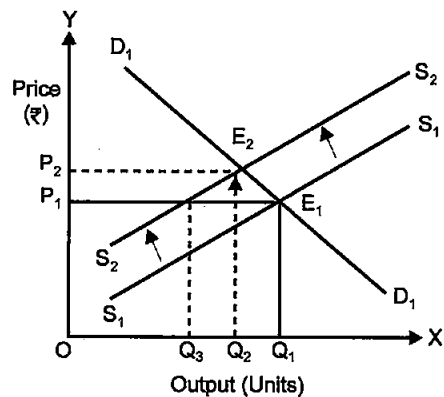
The market demand for a commodity is also affected by the population size. Other things being equal, an increase in the population size increases the market demand of a commodity and a decrease in population decreases the market demand of a commodity.

6. Distribution of Income

If distribution of income in a society is fair and equal, then demand for a commodity is more compared to a situation with unequal distribution of income.

15. Market for a product is in equilibrium. Supply of the product "decreases." Explain the chain of effects of this change till the market again reaches equilibrium. Use diagram. [6]

Answer :



Decrease in the supply of the commodity leads to an increase in the equilibrium price and a fall in the equilibrium quantity. Let us understand how it happens: D_1D_1 and S_1S_1 represents the market demand and market supply respectively. The initial equilibrium occurs at E_1 , where the demand and the supply intersect each other. Due to the decrease in the supply of the commodity, the supply curve will shift leftward parallel from S_1S_1 to S_2S_2 , while the demand curve will remain unchanged. Hence, at the original price (P_1), there will be a situation of excess demand, equivalent to $(q_3 - q_1)$. Consequently, the price will rise due to excess demand. The price will continue to rise

until it reaches, E_2 (new equilibrium), where D_1D_1 intersects the supply curve S_2S_2 . The equilibrium price rises from P_1 to P_2 and the equilibrium output falls from q_1 to q_2 .

SECTION B

17. Define aggregate supply ? [1]

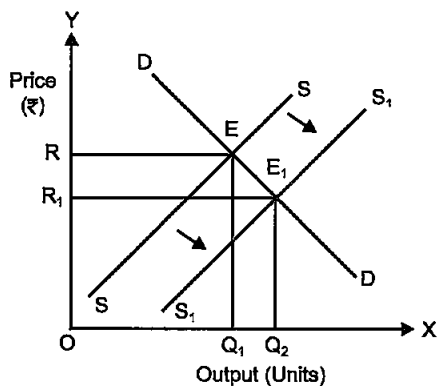
Answer : Aggregate supply refers to the value of all final goods and services produced by all the production unit in an economy in a particular period of time.

19. What is 'devaluation'? [1]

Answer : A deliberate downward adjustment in the value of a country's currency, relative to another country's currency by the government, is called devaluation of domestic currency.

23. How does giving incentives for exports influence foreign exchange rate? Explain. [3]

Answer : The incentives for exports boosts exports for the country. As a result of increase in exports the supply of foreign currency in the country increases. With demand remaining the same, this results in a fall in the exchange rate implying currency appreciation. This can be explained diagrammatically as follows,



With the rise in exports the supply of foreign currency increases. In the diagram DD and SS are the initial demand curve and supply curve for foreign currency respectively. E is the initial equilibrium point, with OR as the equilibrium exchange rate. Rise in the supply of foreign currency would shift the supply curve from SS to $S'S'$. With the shift in supply curve, the new equilibrium is established at point E' , where the exchange rate falls from OR to OR_1 and the demand and supply of foreign currency rises to OQ_2 . This represents a case of currency appreciation.

27. Calculate marginal propensity to consume from the following data about an economy

which is in equilibrium : [4]

National Income = 1500

Autonomous consumption expenditure = 300

Investment expenditure = 300

Answer : We know that in equilibrium,

$$Y = C + I$$

where,

I is investment expenditure, given as 300

Y is national income, given as 1500 and, $C = \bar{C} + cY$

here, \bar{C} is autonomous consumption expenditure, given as 300, c is marginal propensity to consume.

Thus, putting the values in the equation, we have $Y = \bar{C} + cY + I$.

$$\text{or, } 1500 = 300 + c \times 1500 + 300$$

$$\text{or, } c = \frac{1500 - 600}{1500} = 0.6.$$

Thus, marginal propensity to consume is 0.6.

32. Calculate net domestic product at factor cost and (net national disposable income**) from the following :

	(₹ Arab)
(i) Net current transfers to abroad	5
(ii) Government final consumption expenditure	100
(iii) Net indirect tax	80
(iv) Private final consumption expenditure	300
(v) Consumption of fixed capital	20
(vi) Gross domestic fixed capital formation	50
(vii) Net imports	(-) 10
(viii) Closing stock	25
(ix) Opening stock	25
(x) Net factor income to abroad	10
	[6]

Answer : National Domestic Income at Factor Cost = Private Final Consumption Expenditure + Government Final Consumption Expenditure - Net Imports + (Gross Domestic Fixed Capital Formation + Closing stock - Opening stock) - Depreciation - Net Indirect Taxes or,

$$\text{National Income (NDP}_{FC}) = 300 + 100 - (-10) + (50 + 25 - 25) - 20 - 80 = ₹ 360 \text{ Arab.}$$

** Answer is not given due to change in syllabus

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