CBSE Test Paper-03

Class – 11 Economics (Consumer's Equilibrium)

General Instruction: All questions are compulsory. Marks are given alongwith their questions.

1. Which of the following statement is incorrect?(1)
   a. An indifference curve must be downward-sloping to the right.
   b. Convexity of a curve implies that the slope of the curve diminishes as one moves from left to right.
   c. The elasticity of substitution between two goods to a consumer is zero.
   d. The total effect of a change in the price
2. An indifference curve slopes down towards right since more of one commodity and less of another result in: (1)
   a. Same satisfaction, b. Greater satisfaction.
   c. Maximum satisfaction, d. Decreasing expenditure.
3. When a consumer is below the budget line, what does it mean? (1)
4. What happens to the budget set if both the prices as well as the income double? (1)
5. How many units of the commodity should a consumer buy to get maximum utility? Explain with the help of a numerical example. (4)
6. Can an indifference curve be concave to the origin, if so then when? (3)
7. Define a budget line. When can it shift towards the right? (4)
8. How will a consumer reach to the equilibrium point if the market rate of exchange is not equal to MRS? (4)
9. A consumer wants to consume two goods. The prices of the two goods are Rs 4 and Rs 5 respectively. The consumer's income is Rs 20.
   a. Write down the equation of the budget line.
   b. How much of good 1 can she consume if she spends her entire income on that goods?
   c. How much of good 2 can she consume if she spends her entire income on that goods?
   d. What is the slope of the budget line? (6)
10. Explain consumers equilibrium through indifference curve analysis. (6)

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Answers

1. C) The elasticity of substitution between two goods to a consumer is zero
2. A) Same satisfaction.
3. It means that consumer is not spending his entire income.
4. There will be no change in the budget set.
5. Total utility refers to the total satisfaction that a consumer derives from consumption of certain units of a commodity. Marginal utility refers to the additional satisfaction which a consumer derives from consumption of an additional unit of a commodity.
   Both TU and MU are related in following ways:
   1. As long as MU is positive, TU increases but at declining rate.
   2. When MU=0, then TU is maximum
   3. When MU becomes negative, TU declines.

   It means a consumer will be at the highest point of satisfaction when MU derived from that commodity becomes 0.

Units of commodity X	0	1	2	3	4	5	6
Total Utility	0	10	18	23	26	26	24
Marginal Utility	0	10	8	5	3	0	(-2)

   For example: In above case, the consumer will buy 5 units of commodity X, as here TU is maximum and MU is zero. beyond this TU will fall. Therefore, by buying 5 units of commodity X, the consumer will get maximum utility.
6. An indifference curve can be concave to the origin only when Marginal Rate of Substitution is rising, i.e. a consumer is willing to sacrifice greater and greater units of other good(Y) for every additional unit of a good(X). This generally happens in the case of economic bad.
7. A budget line indicates the quantity of goods X and Y that a consumer can buy at a given level of income. Budget line is a limiting factor for a consumer beyond which he cannot go, that means a consumer can only afford to buy combination that falls along his budget line or inside it. He cannot afford to buy combination that is above his budget line.
   It can shift to the right due to following reasons:

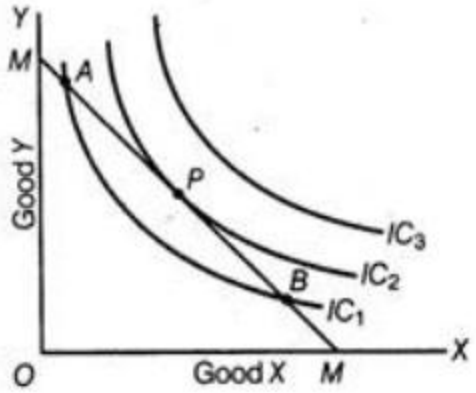
1. When the level of income increases.
2. When price of both goods falls.

8. The market rate of exchange refers to price ratio, while Marginal Rate of Substitution is the rate at which a consumer is willing to exchange one commodity for the other. If, Px/Py is not equal to MRS, then two cases arise which are given below:
   1. When MRS > Px/Py In this case, consumer will buy more of one good X than of good Y, as he is getting more worth of good X, paying price of X, hence satisfaction from X(Mux) will fall and MUy will rise, till the time, MRS = Px/Py.
   2. When MRS < Px/Py in this case, consumer will consume more of good Y than off good X, as he is now getting more worth buying good Y, paying price Py, as a result, MUy will fall and Mux will rise till the time, MRS= PX/Py.
9. 1. Assume Good 1 be X and Good 2 be Y Price of X = Rs 4 (P= Rs 4) Price of Y= Rs 5 (P= Rs 5) Income of the consumer= Rs 20 Budget line = Px + Py = M(income) Budget line will be 4X + 5Y = 20
   2. If she spends her entire income on good 1 (X) then the consumption of good 2 (Y) will be zero. Budget line = Px + Py=M(Income)(from(i) 4X + 5(0) = 20, X = 20/4 = 5 units
   3. If she spends her entire income on good 2 (Y). then the consumption of good 1 (X) will be zero. Budget line =Px + Py =M(Income) (from (i) 4(0)+5Y= 20, Y = 20/5 = 4 units
   4. Slope of budget line = Units of good 1 Willing to sacrifice/units of good 2 willing to gain = ΔPx/ΔPy = 4/5= 0.8.
10. According to indifference curve analysis, consumer's equilibrium is at a point where the slope of, the indifference curve is equal to the slope of the budget line or price line. Two conditions of the consumer's equilibrium are.
    1. $MRS_xy = \frac{P_x}{P_y}$
    2. At the point of equilibrium, indifference curve must be convex to the origin. It implies that at the point of equilibrium, MRS must be diminishing.

       P is the equilibrium point at which budget line touches the higher Indifference Curve IC_2 within the consumer budget and IC_3 is not affordable curve as his income does not permit, Point A could not be the point of equilibrium because at point A, MRS> Px/Py hence consumer will prefer to consume more of good X and less of good Y, as a result MU_X will fall and MUy, will rise, this process will continue till the time MRS = P_X/P_y.

       At point B, MRS <P_X/P_y hence consumer will demand more of good Y and less of good

X, MU_y will and MU_X will rise till the time MRS = P_x/P_y.



$IC_3 > IC_2 > IC_1$