

B.A. Part I (Economics Honours)
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Consumer's Equilibrium through Indifference Curve Analysis

Definition:

"The term **consumer's equilibrium** refers to the amount of goods and services which the consumer may buy in the market with given his income and given prices of goods in the market".

"A **consumer is said to be in equilibrium** at a point where the price line is touching the highest attainable indifference curve from below".

Conditions for consumer equilibrium:

1. A given price line should be tangent to an indifference curve or marginal rate of satisfaction of good X for good Y (MRS_{xy}) must be equal to the price ratio of the two goods. i.e.

$$MRS_{xy} = P_x / P_y$$

2. Indifference curve must be convex to the origin at the point of tangency.

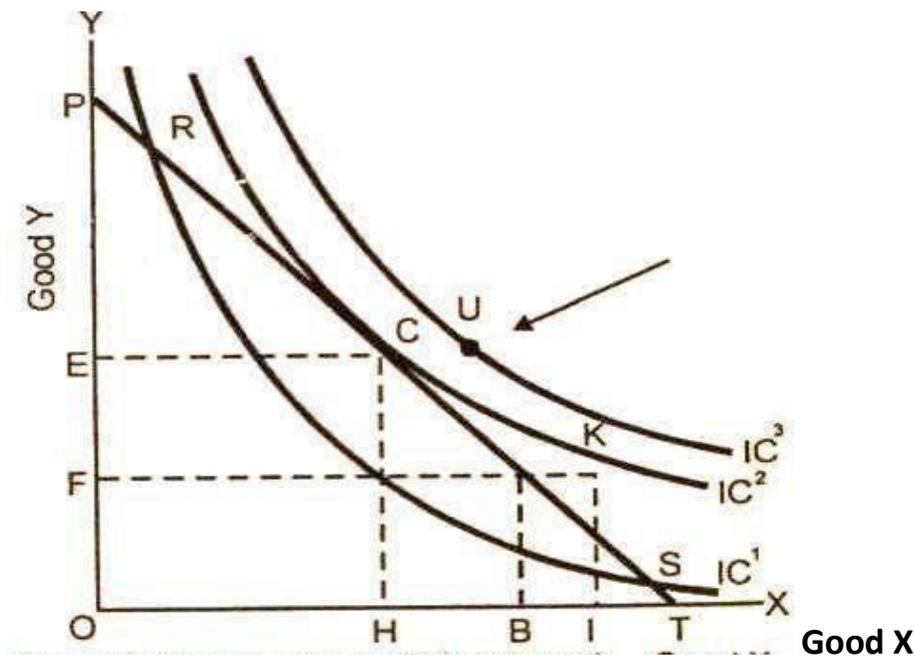
Explanation:

The consumer's consumption decision is explained by combining the budget line and the indifference map. The consumer's equilibrium position is only at a point where the price line is tangent to the highest attainable indifference curve from below.

(1) Budget Line Should be Tangent to the Indifference Curve:

The consumer's equilibrium is explained by combining the budget line and the indifference map.

Diagram



In the diagram, there are three indifference curves IC^1 , IC^2 and IC^3 . The price line PT is tangent to the indifference curve IC^2 at point C . The consumer gets the maximum satisfaction or is in equilibrium at point C by purchasing OE units of good Y and OH units of good X with the given money income.

The consumer cannot be in equilibrium at any other point on indifference curves. For instance, point R and S lie on lower indifference curve IC^1 but yield less satisfaction. As regards point U on indifference curve IC^3 , the consumer no doubt gets higher satisfaction but that is outside the budget line and hence not achievable to the consumer. The consumer's equilibrium position is only at point

C where the price line is tangent to the highest attainable indifference curve IC^2 from below.

(2) Slope of the Price Line to be Equal to the Slope of Indifference Curve:

The second condition satisfies at a point where the price line is a tangent to the highest possible indifference curve. In diagram, the price line PT is touching the highest possible indifferent curve IC^2 at point C.

Geometrically, at tangency point C, the consumer's substitution ratio is equal to price ratio P_x / P_y . It implies that at point C, what the consumer is willing to pay i.e., his personal exchange rate between X and Y (MRS_{xy}) is equal to what he actually pays i.e., the market exchange rate. So the equilibrium condition being P_x / P_y being satisfied at the point C is:

$$\text{Price of X / Price of Y} = \text{MRS of X for Y}$$

The equilibrium conditions given above states that the rate at which the individual is willing to substitute commodity X for commodity Y must equal the ratio at which he can substitute X for Y in the market at a given price.

Summing up, the consumer is in equilibrium at point C where the budget line PT is tangent to the indifference IC^2 . The market basket OH of good X and OE of good Y yields the greatest satisfaction because it is on the highest attainable indifference curve. At point C:

$$MRS_{xy} = P_x / P_y$$