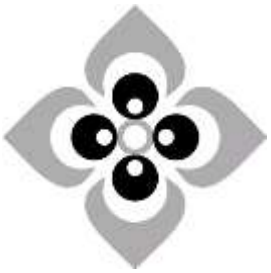

[Frequently Asked Questions]

[Partial Differentiation of Functions of Function and Implicit Function]

Subject:	Business Economics
Course:	B. A. (Hons.), 6th Semester, Undergraduate
Paper No. & Title:	Paper – 631 Advanced Mathematical Techniques
Unit No. & Title:	Unit – 2 Function of Two Variables
Lecture No. & Title:	Lecture – 2 Partial Differentiation of Functions of Function and Implicit Function

Frequently Asked Questions (FAQ)

1. **What do you mean by total differential of a function of two variables?**

   Ans. Let u(x, y) be a function of two variables. $\frac{\partial u}{\partial x}\frac{dx}{dt}$ will be the amount of change in u due to a small change in t that is transmitted through x. $\frac{\partial u}{\partial y}\frac{dy}{dt}$ will be the amount of change in u due to a small change in t that is transmitted through y. Total differential is sum of these two effects.

2. **What do you mean by homogeneous function of two variables?**

   Ans. A function is said to be homogeneous function of degree n if f (tx,ty) = t^nf(x,y), t is any positive number.

3. **State Euler's theorem.**

   Ans. Let u = u(x,y) be a homogeneous function of degree n. Then $xu_x + yu_y = nu$.

4. **Discuss concept of elasticity.**

   Ans. Let $q_a = u(P_a, P_b)$ where q_a is the quantity of good A demanded, P_a is its price, and P_b is the price of good B.

   Price elasticity is defined as $\eta = -\frac{\partial q_a}{\partial P_a}\frac{P_a}{q_a}$.