

Class – XI

Lesson Plan

TOPIC: LIMITS AND DERIVATIVES

Brief Description: In this chapter students will be acquainted with Calculus. It is that branch of mathematics which mainly deals with the study of change in the value of a function as the points in the domain change. First limits then derivatives will be explained in this chapter.

UN Sustainable Goals to be achieved (if any): Quality Education

Objectives: (put Bloom's level)

I - Specific Objectives

Students will be able to understand:

- ❖ Algebra of limits
- ❖ Limits of polynomials and rational functions
- ❖ Limits of Trigonometric Functions
- ❖ Limits of Logarithmic and Exponential Functions
- ❖ Algebra of derivative of functions
- ❖ Derivative of the functions from first principle
- ❖ Derivatives of functions

II - Behavioral Objectives

Through this chapter students will be able to develop:

1. Own Visualization skill, as effect of one parameter on other
2. Dependency

Process / Activities:

Activity (to introduce the lesson)

For introducing the chapter (Limits and Derivatives), students will be asked to:

1. Calculate the value of $(x^2-1)/(x-1)$ in the neighborhood of 1

Skills (as per subject)

- ❖ Observation
- ❖ Understanding
- ❖ Problem solving

Exercise for Notebook (put Bloom's level)

- ❖ Glossary
- ❖ R.T.C (Reference to Context)
- ❖ Typology of questions
- ❖ Value based question

Expected Learning Outcomes

Students would be able to learn:

- ❖ Algebra of limits
- ❖ Limits of polynomials and rational functions
- ❖ Limits of Trigonometric Functions
- ❖ Limits of Logarithmic and Exponential Functions
- ❖ Algebra of derivative of functions
- ❖ Derivative of the functions from first principle
- ❖ Derivatives of functions
- ❖ Visualization of change
- ❖ Dependency

Assessment: (put Bloom's level)

Q1. Evaluate $x + 3$ when $\lim x \rightarrow 3$ (PS)

Q2. Evaluate $\lim_{x \rightarrow 0} \frac{\sin ax}{bx}$ (US)

Q3. Find the derivative of $\cos x$ from first principle. (R)

Q4. Find the derivative of $(x + \sec x)(x - \tan x)$. (MS)