Class – XI
Lesson Plan
Session 2023 – 24

Topic: Calculus
Brief Description of the lesson:

The topic will start with a quick brief about the importance of topic in real – life. Why study of calculus is important followed by explanation of basics of limits, continuity, concept of derivatives, some standard derivatives and its application part

Then concept of anti – derivatives i.e. integration will be explained followed by application of integration and differential equations and modeling

Objectives:

I - Specific Objectives:

The students will be able to:
1) S1 Recalling the concept of limits, continuity and derivatives **(Knowledge/Recalling)**
2) S2Find out the derivative of given function **(Apply/Execution)**
3) S3 Understand implicit function, logarithmic differentiation, parametric functions. **(Understand/Classifying)**
4) S4 By using the concept derivative to calculate higher order derivatives. **(Apply/Execution)**
5) S5 Understand the meaning of rate of change of a quantity with respect to other **(Understand/Interpreting)**
6) S6 Find the maximum and minimum value of the function by using derivative. **(Apply/Execution)**
7) S7 Understand difference between the marginal and average cost **(Analysis/Comparing)**
8) S8 Calculate the area of the given resign by using integrals **(Apply/Execution)**
9) S9 Construct the linear equations from the daily life situations **(Synthesis/Producing)**
10) S10 Find the order and degree of the given differentiation **(Apply/Execution)**
11) S11 Understand the application of differential equations **(Understand/Interpreting)**

II - Behavioral Objectives:
By understanding and solving variety of problems, students will attain following behavioral objectives:
They will be able to:
1) B1 Understand the law of demand and supply in real life situation as they will be able to understand that why price of any specific vegetable increases (say Tomato, Lemon etc) **(Analysis)**
2) B2 Derivatives are used in economics to find out cost function and application skill will develop **(Apply/Implementation)**
3) B3 Understand the meaning of consumer surplus and producer surplus **(Understand/Classifying)**
4) B4 Can apply the concept of increasing and decreasing and maxima and minima in various model making and project making **(Apply/Implementation)**

Process / Activities:

ACT1 Various concept explained in the form of an activity through Transum Graph Plotter **(Analysis)**

ACT2 To construct an open box of maximum volume from a given rectangular sheet by cutting equal squares from each corner **(Synthesis/Producing)**

Skills:

1) Computation
2) Application
3) Problem solving
4) Analysis
5) Synthesis

Assessment:

Assessment of activity will be done on the basis of decided rubrics, to check

1) **Analysis** skill of student
2) **Synthesis/Producing** skill of student

Expected Learning Outcomes:

Students would be able to:

1) Recalling the concept of limits, continuity and derivatives **(Knowledge/Recalling)**
2) Find out the derivative of given function **(Apply/Execution)**
3) Understand implicit function, logarithmic differentiation, parametric functions. **(Understand/Classifying)**
4) By using the concept derivative to calculate higher order derivatives. **(Apply/Execution)**
5) Understand the meaning of rate of change of a quantity with respect to other **(Understand/Interpreting)**
6) Find the maximum and minimum value of the function by using derivative. **(Apply/Execution)**
7) Understand difference between the marginal and average cost **(Analysis/Comparing)**
8) Calculate the area of the given resign by using integrals **(Apply/Execution)**
9) Construct the linear equations from the daily life situations **(Synthesis/Producing)**
10) Find the order and degree of the given differentiation **(Apply/Execution)**
11) Understand the application of differential equations **(Understand/Interpreting)**

Placements of Objectives, Instructional Activities and Assessment:

Topic/Start Date/Assessment					
Knowledge	**Understanding**	**Application**	**Analysis**	**Synthesis**	**Evaluation**
S1	S3	S2	S7	S9	
	S5	S4	B1	ACT2	
		S6	ACT1	A2	
		S8	A1		
	S11	S10			
	B3	B2			
		B4			

REVIEW OF THE LESSON PLAN

(TO BE DONE WHEN THE LESSON GETS OVER)

Problems faced –

1) Understanding the basic concepts of limits and derivatives

2) Memorizing the different formulas and rules for limits and derivatives

3) Applying the formulas and rules to specific problems.

4) Understanding the geometric and physical meaning of limits and derivatives

Success- 85%

Failure-15%

Real Learning Outcomes

ELO-

1) Define the limit of a function

2) Calculate limits of functions using algebraically equivalent expressions

3) Use graphical and numerical methods to estimate limits.

4) Determine whether a function is continuous at a point.

5) Apply limits to solve real-world problems

Students' response/ participation

1) students were able to Solve practice problems.

2) Students were able to Create their own problems.

3) Tutor other students.

Teacher's Learning

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