



D.B.F. Dayanand College of Arts and Science, Solapur

Department of Chemistry

Subject	Chemistry
Paper No. and Title	XIII: Physical Chemistry
Module (Flipped classroom) Title	Chemical Kinetics
Module Tag	DAYA.CHEM._SVG2

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Module No. 2

Title – Chemical Kinetics

- Prerequisites –

. Chemical kinetics and its scope:

Chemical kinetics is a branch of physical chemistry which deals with study of velocity of reaction or rate of chemical reactions. Such studies help to understand the mechanism through which the reactants are transferred to Products. Almost all the chemical reactions take place under a set of conditions for example temperature, pressure, concentration of reacting substances, presence of catalyst etc. An increase in temperature will increase the rate of reaction similarly; increase in concentration increases the rate of reaction. However, it is observed that many reactions take place as such fast rate that it is not possible to measure the rate of such reactions that is ionic reactions.

- Objectives of the Module

Students should learn about the details of the chemical kinetics

Content	Objectives (Learner should be able to)	Cognitive Level
Chemical kinetics	Definition	Remembering
Introduction	Introduction about Chemical Kinetics	Remembering
Order of reaction	Definition	Remembering
Molecularity of reaction	Definition	Remembering
Third order reaction	Proper thought process	Understanding
	Asking question and some simple concept	Evaluating

Detailed Plan of Out-of-class and In-class activities

Sub Unit 1 -

Objectives –

- What is Chemical Kinetics?
- Understanding of basic terms in Chemical Kinetics .
- Derivation of third order reaction.

Resources Needed –

→ Title and Nature of Resources –

1) Syllabus of B. Sc. III P-XIII physical Chemistry

<https://drive.google.com/file/d/1enO6PImsm17rpblIBmmU5Gsy-gcLc95H/view?usp=sharing>

2) Instructor-made -

Vedio You tube -

1. https://youtu.be/RRywY-Ego_8
2. <https://classroom.google.com/c/MTQ1NTc3MzM3MDQy?cjc=ioyodwl>
3. https://drive.google.com/file/d/1ZZ8PVt_G3MOMrw5Q7oTIMBgXRKOyQ9c-/view?usp=sharing

4. https://drive.google.com/file/d/1z2_oYUaTJ49ppdlZ1iFM0Is37N5CGMw9/view?usp=sharing

3) Assignment:

1) <https://drive.google.com/file/d/1wykDVKg4V2YGDB8mLaf8edBI9S8RnkB3/view?usp=sharing>

2. https://docs.google.com/forms/d/e/1FAIpQLSdThsBLO8UqYiZ0MVBkAw_U46toM9qhEq_nB7eapwsmRKK5FQ/viewform?usp=sf_link

4) Know more:

Suggested readings,

1. Chemical kinetics by K.J. Laidler

2. Principles of physical Chemistry by Puri, Sharma and Pathania, Vishal Pub. Co.

Units	Out-of-class activity Details of Activity	In-class activity Details of Activity	Assessment
1.1	Students should read out the topic from a Text book Students should listen to the recordings	Discussion on the topic Check the level of understanding through Question – answer session	Question – answer session
1.2	Students should read out the topic from a Text book Students should listen to the recordings	Same as above Help students to apply the definition	Question to write in detail