



GOVERNMENT POLYTECHNIC, KENDRAPARA, DEPARTMENT OF HUMANITIES AND SCIENCE

Discipline:	Semester: 2ND COMMON	Name of the Teaching Faculty: KSHYANA PRAVA SAHOO (GF in Chemistry) RABINARAYAN PANDA (GF in Chemistry)	
Subject: APPLIED CHEMISTRY-II LAB (Pr-5)	No. of days/per week class allotted: 02	Semester From date: 09.01.2026 to Date: 08.05.2026 No. of Weeks: 15	
PRE-REQUISITES	Basic knowledge of Science and Mathematics.		
COURSE OUTCOMES	CO1	Explain various methods of volumetric analysis i.e. Redox, Iodometric, complexometric, Neutralization etc. and use of conductivity meter for measurement of conductance of water sample.	
	CO2	Apply the use of internal and external indicators and their comparison for redox titrations and mechanisms of iodometric titrations and use of double indicator method in a single titration.	
	CO3	Estimate the % values of moisture, volatile matter, ash and carbon of fuel by Proximate analysis and instrument handling.	
	CO4	Analyse the properties of lubricants viz. Flash & fire point, viscosity, cloud & pour point and their significance.	
Week	Class Day	Practical Topics	DELIVERY METHOD
1ST	1ST	Introduction to syllabus	PPT
	2ND	Preparation of standard solution of oxalic acid or potassium permanganate	DEMONSTRATION
2ND	1ST	Preparation of standard solution of oxalic acid or potassium permanganate	DEMONSTRATION
	2ND	Preparation of standard solution of oxalic acid or potassium permanganate	Record & Viva
3RD	1ST	Preparation of standard solution of oxalic acid or potassium permanganate	DEMONSTRATION
	2ND	Preparation of standard solution of oxalic acid or potassium permanganate	DEMONSTRATION
4TH	1ST	Preparation of standard solution of oxalic acid or potassium permanganate	Record & Viva
	2ND	To determine strength of given sodium hydroxide solution by titrating against standard oxalic acid solution using phenolphthalein indicator.	DEMONSTRATION
5TH	1ST	To determine strength of given sodium hydroxide solution by titrating against standard oxalic acid solution using phenolphthalein indicator.	DEMONSTRATION
	2ND	To determine strength of given sodium hydroxide solution by titrating against standard oxalic acid solution using phenolphthalein indicator.	Record & Viva
6TH	1ST	Standardization of KMnO ₄ solution using standard oxalic acid and Determine the percentage of iron present in given Hematite ore by KMnO ₄ solution.	DEMONSTRATION
	2ND	Standardization of KMnO ₄ solution using standard oxalic acid and Determine the percentage of iron present in given Hematite ore by KMnO ₄ solution.	DEMONSTRATION
7TH	1ST	Standardization of KMnO ₄ solution using standard oxalic acid and Determine the percentage of iron present in given Hematite ore by KMnO ₄ solution.	Record & Viva
	2ND	Volumetric estimation of total acid number (TAN) of given oil.	DEMONSTRATION

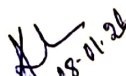
8TH	1ST	Volumetric estimation of total acid number (TAN) of given oil.	DEMOSTRATION
	2ND	Volumetric estimation of total acid number (TAN) of given oil.	Record & Viva
9TH	1ST	Volumetric estimation of a) Total hardness of given water sample using standard EDTA solution.	DEMOSTRATION
	2ND	Volumetric estimation of a) Total hardness of given water sample using standard EDTA solution.	DEMOSTRATION
10TH	1ST	Volumetric estimation of a) Total hardness of given water sample using standard EDTA solution.	Record & Viva
	2ND	Volumetric estimation of b) Alkalinity of given water sample using 0.01M sulphuric acid	DEMOSTRATION
11TH	1ST	Volumetric estimation of b) Alkalinity of given water sample using 0.01M sulphuric acid	DEMOSTRATION
	2ND	Volumetric estimation of b) Alkalinity of given water sample using 0.01M sulphuric acid	Record & Viva
12TH	1ST	Volumetric estimation of b) Alkalinity of given water sample using 0.01M sulphuric acid	DEMOSTRATION
	2ND	Volumetric estimation of b) Alkalinity of given water sample using 0.01M sulphuric acid	DEMOSTRATION
13TH	1ST	Volumetric estimation of b) Alkalinity of given water sample using 0.01M sulphuric acid	Record & Viva
	2ND	To verify the first law of electrolysis of copper sulfate using copper electrode.	DEMOSTRATION
14TH	1ST	To verify the first law of electrolysis of copper sulfate using copper electrode.	DEMOSTRATION
	2ND	To verify the first law of electrolysis of copper sulfate using copper electrode.	Record & Viva
15TH	1ST	Repeat Experiment/ Record Checking/ Viva/ Sessional Evaluation	Record & Viva
	2ND	Repeat Experiment/ Record Checking/ Viva/ Sessional Evaluation	Record & Viva

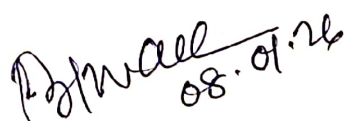
LEARNING RESOURCES:

1. Applied Chemistry by Dr. Anju Rawley (Download from <https://ekumbh.aicteindia.org/dbook.php>).
2. Text Book of Chemistry for Class XI & XII(Part-I, Part-II); N.C.E.R.T., Delhi, 2017-18.
3. Agnihotri, Rajesh, Chemistry for Engineers, Wiley India Pvt.Ltd., 2014.


07.11.26
R.N.PANDA


07.11.26
K.P.SAHOO


18.11.26
HOD


08.11.26
Principal
GP,KENDRAPARA

Signature of Faculty concerned
GP,KENDRAPARA

Dept. of Humanities & Science
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