BHUBANANDA ORISSA SCHOOL OF ENGINEERING, CUTTACK

DEPARTMENT: HUMANITIES AND SCIENCES

LESSON PLAN

SUBJECT: - APPLIED CHEMISTRY & EVS LAB (PR-3)

ACADEMIC SESSION:-2026-27

1ST YEAR

SECTION: C, F, I1, I2, J (GROUP 1)

BRANCH: AUTOMOBILE, DIGITAL MANUFACTURING TECHNOLOGIES(DMT), MECHANICAL and MECHATRONICS

Prepared by Smt. SULAGNA DAS

(Senior Lecturer in Chemistry)

Lesson Plan- APPLIED CHEMISTRY LAB

Discipline: Automobile Engineering- Sec C - GROUP-1			Year: 1st Name of Faculty : Smt. Sulagna Das
Subject: Applied Chemistry Lab(PR-3)		No. of days per week Class allotted: 01 (2 Hours) (Monday) Total Period: 64	Session From Date: 17-08-2026 To date : 17-04-2027
Week	**Period per week**	**EXPERIMENTS**	**Activity to be performed**
1st	2	**EXPERIMENT- 1 : Preparation of standard solution of oxalic acid or potassium permanganate.**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
2nd	2	**EXPERIMENT- 1 : Preparation of standard solution of oxalic acid or potassium permanganate.**	Record writing by the students,Record checking and viva voce of Expt. 1
3rd	2	**EXPERIMENT - 2 : To determine strength of given sodium hydroxide solution by titrating against standard oxalic acid solution using phenolphthalein indicator.**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
4th	2	**EXPERIMENT - 2 : To determine strength of given sodium hydroxide solution by titrating against standard oxalic acid solution using phenolphthalein indicator.**	Record writing by the students,Record checking and viva voce of Expt. 2
5th	2	**EXPERIMENT - 3 : Standardization of KMnO4 solution using standard oxalic acid and Determine the percentage of iron present in given Hematite ore by KMnO4 solution.**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
6th	2	**EXPERIMENT - 3 : Standardization of KMnO4 solution using standard oxalic acid and Determine the percentage of iron present in given Hematite ore by KMnO4 solution.**	Record writing by the students,Record checking and viva voce of Expt. 3
7th	2	**EXPERIMENT - 4: Iodometric estimation of copper in the copper pyrite ore.**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
8th	2	**EXPERIMENT - 4: Iodometric estimation of copper in the copper pyrite ore.**	Record writing by the students,Record checking and viva voce of Expt. 4

Week	Period per week	EXPERIMENTS	Activity to be performed
9th	2	**EXPERIMENT - 5: Volumetric estimation of total acid number (TAN) of given oil.**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
10th	2	**EXPERIMENT - 5: Volumetric estimation of total acid number (TAN) of given oil.**	Record writing by the students,Record checking and viva voce of Expt. 5
11th	2	**EXPERIMENT - 6: Volumetric estimation of total hardness of given water sample using standard EDTA solution.**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
12th	2	**EXPERIMENT - 6: Volumetric estimation of total hardness of given water sample using standard EDTA solution.**	Record writing by the students,Record checking and viva voce of Expt. 6
13th	2	**EXPERIMENT - 7:Volumetric estimation of alkalinity of given water sample using 0.01M sulphuric acid**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
14th	2	**EXPERIMENT - 7:Volumetric estimation of alkalinity of given water sample using 0.01M sulphuric acid**	Record writing by the students,Record checking and viva voce of Expt. 7
15th	2	**EXPERIMENT - 8: Proximate analysis of coal** **a) Gravimetric estimation of moisture in given coal sample** **b) Gravimetric estimation of ash in given coal sample**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
16th	2	**EXPERIMENT - 8: Proximate analysis of coal** **a) Gravimetric estimation of moisture in given coal sample** **b) Gravimetric estimation of ash in given coal sample**	Record writing by the students,Record checking and viva voce of Expt. 8
17th	2	**EXPERIMENT - 9: Determine the conductivity of given water sample.**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
18th	2	**EXPERIMENT - 9: Determine the conductivity of given water sample.**	Record writing by the students,Record checking and viva voce of Expt. 9

Week	Period per week	EXPERIMENTS	Activity to be performed
19th	2	**EXPERIMENT No.-10 :Verification of the first law of electrolysis of copper sulfate using copper electrode**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
20th	2	**EXPERIMENT No.-10 :Verification of the first law of electrolysis of copper sulfate using copper electrode**	Record writing by the students,Record checking and viva voce of Expt. 10
21st	2	**EXPERIMENT No.-11 : Construction and measurement of emf of elector chemical cell (Daniel cell)**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
22nd	2	**EXPERIMENT No.-11 : Construction and measurement of emf of elector chemical cell (Daniel cell)**	Record writing by the students,Record checking and viva voce of Expt. 11
23rd	2	**EXPERIMENT No.-12 : Determination of Viscosity of Lubricating Oil using Redwood viscometer**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
24th	2	**EXPERIMENT No.-12 : Determination of Viscosity of Lubricating Oil using Redwood viscometer**	Record writing by the students,Record checking and viva voce of Expt. 12
25th	2	**EXPERIMENT No.-13 : Determination of amount of dissolved oxygen present in a water sample**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
26th	2	**EXPERIMENT No.-13 : Determination of amount of dissolved oxygen present in a water sample**	Record writing by the students,Record checking and viva voce of Expt. 13
27th	2	**EXPERIMENT No.-14: Determination of amount of BOD present in a water sample**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
28th	2	**EXPERIMENT No.-14: Determination of amount of BOD present in a water sample**	Record writing by the students,Record checking and viva voce of Expt. 14
29th	2	**EXPERIMENT No.-15: Determination of amount of dissolved chlorine present in a water sample**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.

Week	Period per week	EXPERIMENTS	Activity to be performed
30th	2	**EXPERIMENT No.-15: Determination of amount of dissolved chlorine present in a water sample**	Record writing by the students,Record checking and viva voce of Expt. 15
31st	2	**Final Record Assessment and Allocation of Sessional Mark**	Record checking and viva voce along with final record evaluation and allocation of sessional marks.
32nd	2	**Final Record Assessment and Allocation of Sessional Mark**	Record checking and viva voce along with final record evaluation and allocation of sessional marks.

BOOK REFERNCE:

Applied Chemistry by Anju Rawlley & Devdatta Vinayakrao Saraf

Sat 31/07/2026

Concerned faculty:
Smt. Sulagna Das
Sr. Lect. Chemistry

31/7/26

HOD
Dept. of Humanities & Sc
BOSE, Cuttack

Lesson Plan- APPLIED CHEMISTRY LAB

Discipline: Digital Manufacturing Technologies- Sec F - GROUP-1			**Year: 1st** **Name of Faculty : Smt. Sulagna Das**
Subject: Applied Chemistry Lab(PR-3)		**No. of days per week Class allotted: 01 (2 Hours) (Wednesday)** **Total Period: 64**	**Session From Date: 17-08-2026 To date : 17-04-2027**
Week	**Period per week**	**EXPERIMENTS**	**Activity to be performed**
1st	2	**EXPERIMENT- 1 : Preparation of standard solution of oxalic acid or potassium permanganate.**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
2nd	2	**EXPERIMENT- 1 : Preparation of standard solution of oxalic acid or potassium permanganate.**	Record writing by the students,Record checking and viva voce of Expt. 1
3rd	2	**EXPERIMENT - 2 : To determine strength of given sodium hydroxide solution by titrating against standard oxalic acid solution using phenolphthalein indicator.**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
4th	2	**EXPERIMENT - 2 : To determine strength of given sodium hydroxide solution by titrating against standard oxalic acid solution using phenolphthalein indicator.**	Record writing by the students,Record checking and viva voce of Expt. 2
5th	2	**EXPERIMENT - 3 : Standardization of KMnO4 solution using standard oxalic acid and Determine the percentage of iron present in given Hematite ore by KMnO4 solution.**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
6th	2	**EXPERIMENT - 3 : Standardization of KMnO4 solution using standard oxalic acid and Determine the percentage of iron present in given Hematite ore by KMnO4 solution.**	Record writing by the students,Record checking and viva voce of Expt. 3
7th	2	**EXPERIMENT - 4: Iodometric estimation of copper in the copper pyrite ore.**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
8th	2	**EXPERIMENT - 4: Iodometric estimation of copper in the copper pyrite ore.**	Record writing by the students,Record checking and viva voce of Expt. 4

Week	Period per week	EXPERIMENTS	Activity to be performed
9th	2	**EXPERIMENT - 5: Volumetric estimation of total acid number (TAN) of given oil.**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
10th	2	**EXPERIMENT - 5: Volumetric estimation of total acid number (TAN) of given oil.**	Record writing by the students,Record checking and viva voce of Expt. 5
11th	2	**EXPERIMENT - 6: Volumetric estimation of total hardness of given water sample using standard EDTA solution.**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
12th	2	**EXPERIMENT - 6: Volumetric estimation of total hardness of given water sample using standard EDTA solution.**	Record writing by the students,Record checking and viva voce of Expt. 6
13th	2	**EXPERIMENT - 7:Volumetric estimation of alkalinity of given water sample using 0.01M sulphuric acid**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
14th	2	**EXPERIMENT - 7:Volumetric estimation of alkalinity of given water sample using 0.01M sulphuric acid**	Record writing by the students,Record checking and viva voce of Expt. 7
15th	2	**EXPERIMENT - 8: Proximate analysis of coal** **a) Gravimetric estimation of moisture in given coal sample** **b) Gravimetric estimation of ash in given coal sample**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
16th	2	**EXPERIMENT - 8: Proximate analysis of coal** **a) Gravimetric estimation of moisture in given coal sample** **b) Gravimetric estimation of ash in given coal sample**	Record writing by the students,Record checking and viva voce of Expt. 8
17th	2	**EXPERIMENT - 9: Determine the conductivity of given water sample.**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
18th	2	**EXPERIMENT - 9: Determine the conductivity of given water sample.**	Record writing by the students,Record checking and viva voce of Expt. 9
19th	2	**EXPERIMENT No.-10 :Verification of the first law of electrolysis of copper sulfate using copper electrode**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.

Week	Period per week	EXPERIMENTS	Activity to be performed
20th	2	**EXPERIMENT No.-10 :Verification of the first law of electrolysis of copper sulfate using copper electrode**	Record writing by the students,Record checking and viva voce of Expt. 10
21st	2	**EXPERIMENT No.-11 : Construction and measurement of emf of elector chemical cell (Daniel cell)**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
22nd	2	**EXPERIMENT No.-11 : Construction and measurement of emf of elector chemical cell (Daniel cell)**	Record writing by the students,Record checking and viva voce of Expt. 11
23rd	2	**EXPERIMENT No.-12 : Determination of Viscosity of Lubricating Oil using Redwood viscometer**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
24th	2	**EXPERIMENT No.-12 : Determination of Viscosity of Lubricating Oil using Redwood viscometer**	Record writing by the students,Record checking and viva voce of Expt. 12
25th	2	**EXPERIMENT No.-13 : Determination of amount of dissolved oxygen present in a water sample**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
26th	2	**EXPERIMENT No.-13 : Determination of amount of dissolved oxygen present in a water sample**	Record writing by the students,Record checking and viva voce of Expt. 13
27th	2	**EXPERIMENT No.-14: Determination of amount of BOD present in a water sample**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
28th	2	**EXPERIMENT No.-14: Determination of amount of BOD present in a water sample**	Record writing by the students,Record checking and viva voce of Expt. 14
29th	2	**EXPERIMENT No.-15: Determination of amount of dissolved chlorine present in a water sample**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
30th	2	**EXPERIMENT No.-15: Determination of amount of dissolved chlorine present in a water sample**	Record writing by the students,Record checking and viva voce of Expt. 15
31st	2	**Final Record Assessment and Allocation of Sessional Mark**	Record checking and viva voce along with final record evaluation and allocation of sessional marks.

Week	Period per week	EXPERIMENTS	Activity to be performed
32nd	2	**Final Record Assessment and Allocation of Sessional Mark**	Record checking and viva voce along with final record evaluation and allocation of sessional marks.

BOOK REFERNCE:

Applied Chemistry by Anju Rawlley & Devdatta Vinayakrao Saraf

Das 31/07/2026

Concerned faculty:
Smt. Sulagna Das
Sr. Lect. Chemistry

31/7/26

HOD
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Lesson Plan- APPLIED CHEMISTRY LAB

Discipline: Mechanical- Sec I1 - GROUP-1			**Year: 1st** **Name of Faculty : Smt. Sulagna Das**
Subject: Applied Chemistry Lab(PR-3)		**No. of days per week Class allotted: 01 (2 Hours) (Friday)** **Total Period: 64**	**Session From Date: 17-08-2026 To date : 17-04-2027**
Week	**Period per week**	**EXPERIMENTS**	**Activity to be performed**
1st	2	**EXPERIMENT- 1 : Preparation of standard solution of oxalic acid or potassium permanganate.**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
2nd	2	**EXPERIMENT- 1 : Preparation of standard solution of oxalic acid or potassium permanganate.**	Record writing by the students,Record checking and viva voce of Expt. 1
3rd	2	**EXPERIMENT - 2 : To determine strength of given sodium hydroxide solution by titrating against standard oxalic acid solution using phenolphthalein indicator.**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
4th	2	**EXPERIMENT - 2 : To determine strength of given sodium hydroxide solution by titrating against standard oxalic acid solution using phenolphthalein indicator.**	Record writing by the students,Record checking and viva voce of Expt. 2
5th	2	**EXPERIMENT - 3 : Standardization of KMnO4 solution using standard oxalic acid and Determine the percentage of iron present in given Hematite ore by KMnO4 solution.**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
6th	2	**EXPERIMENT - 3 : Standardization of KMnO4 solution using standard oxalic acid and Determine the percentage of iron present in given Hematite ore by KMnO4 solution.**	Record writing by the students,Record checking and viva voce of Expt. 3
7th	2	**EXPERIMENT - 4: Iodometric estimation of copper in the copper pyrite ore.**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.

Week	Period per week	EXPERIMENTS	Activity to be performed
8th	2	**EXPERIMENT - 4: Iodometric estimation of copper in the copper pyrite ore.**	Record writing by the students,Record checking and viva voce of Expt. 4
9th	2	**EXPERIMENT - 5: Volumetric estimation of total acid number (TAN) of given oil.**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
10th	2	**EXPERIMENT - 5: Volumetric estimation of total acid number (TAN) of given oil.**	Record writing by the students,Record checking and viva voce of Expt. 5
11th	2	**EXPERIMENT - 6: Volumetric estimation of total hardness of given water sample using standard EDTA solution.**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
12th	2	**EXPERIMENT - 6: Volumetric estimation of total hardness of given water sample using standard EDTA solution.**	Record writing by the students,Record checking and viva voce of Expt. 6
13th	2	**EXPERIMENT - 7:Volumetric estimation of alkalinity of given water sample using 0.01M sulphuric acid**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
14th	2	**EXPERIMENT - 7:Volumetric estimation of alkalinity of given water sample using 0.01M sulphuric acid**	Record writing by the students,Record checking and viva voce of Expt. 7
15th	2	**EXPERIMENT - 8: Proximate analysis of coal** **a) Gravimetric estimation of moisture in given coal sample** **b) Gravimetric estimation of ash in given coal sample**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
16th	2	**EXPERIMENT - 8: Proximate analysis of coal** **a) Gravimetric estimation of moisture in given coal sample** **b) Gravimetric estimation of ash in given coal sample**	Record writing by the students,Record checking and viva voce of Expt. 8
17th	2	**EXPERIMENT - 9: Determine the conductivity of given water sample.**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.

Week	Period per week	EXPERIMENTS	Activity to be performed
18th	2	**EXPERIMENT - 9: Determine the conductivity of given water sample.**	Record writing by the students,Record checking and viva voce of Expt. 9
19th	2	**EXPERIMENT No.-10 :Verification of the first law of electrolysis of copper sulfate using copper electrode**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
20th	2	**EXPERIMENT No.-10 :Verification of the first law of electrolysis of copper sulfate using copper electrode**	Record writing by the students,Record checking and viva voce of Expt. 10
21st	2	**EXPERIMENT No.-11 : Construction and measurement of emf of elector chemical cell (Daniel cell)**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
22nd	2	**EXPERIMENT No.-11 : Construction and measurement of emf of elector chemical cell (Daniel cell)**	Record writing by the students,Record checking and viva voce of Expt. 11
23rd	2	**EXPERIMENT No.-12 : Determination of Viscosity of Lubricating Oil using Redwood viscometer**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
24th	2	**EXPERIMENT No.-12 : Determination of Viscosity of Lubricating Oil using Redwood viscometer**	Record writing by the students,Record checking and viva voce of Expt. 12
25th	2	**EXPERIMENT No.-13 : Determination of amount of dissolved oxygen present in a water sample**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
26th	2	**EXPERIMENT No.-13 : Determination of amount of dissolved oxygen present in a water sample**	Record writing by the students,Record checking and viva voce of Expt. 13
27th	2	**EXPERIMENT No.-14: Determination of amount of BOD present in a water sample**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
28th	2	**EXPERIMENT No.-14: Determination of amount of BOD present in a water sample**	Record writing by the students,Record checking and viva voce of Expt. 14
29th	2	**EXPERIMENT No.-15: Determination of amount of dissolved chlorine present in a water sample**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.

Week	Period per week	EXPERIMENTS	Activity to be performed
30th	2	**EXPERIMENT No.-15: Determination of amount of dissolved chlorine present in a water sample**	Record writing by the students,Record checking and viva voce of Expt. 15
31st	2	**Final Record Assessment and Allocation of Sessional Mark**	Record checking and viva voce along with final record evaluation and allocation of sessional marks.
32nd	2	**Final Record Assessment and Allocation of Sessional Mark**	Record checking and viva voce along with final record evaluation and allocation of sessional marks.

BOOK REFERNCE:

Applied Chemistry by Anju Rawlley & Devdatta Vinayakrao Saraf

Das 31/07/2026

Concerned faculty:
Smt. Sulagna Das
Sr. Lect. Chemistry

31/7/26

HOD
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BOSE, Cuttack

Lesson Plan- APPLIED CHEMISTRY LAB

Discipline: Mechanical- Sec I2 - GROUP-1			**Year: 1st** **Name of Faculty : Smt. Sulagna Das**
Subject: Applied Chemistry Lab(PR-3)		**No. of days per week Class allotted: 01 (2 Hours) (Saturday)** **Total Period: 64**	**Session From Date: 17-08-2026 To date : 17-04-2027**
Week	**Period per week**	**EXPERIMENTS**	**Activity to be performed**
1st	2	**EXPERIMENT- 1 : Preparation of standard solution of oxalic acid or potassium permanganate.**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
2nd	2	**EXPERIMENT- 1 : Preparation of standard solution of oxalic acid or potassium permanganate.**	Record writing by the students,Record checking and viva voce of Expt. 1
3rd	2	**EXPERIMENT - 2 : To determine strength of given sodium hydroxide solution by titrating against standard oxalic acid solution using phenolphthalein indicator.**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
4th	2	**EXPERIMENT - 2 : To determine strength of given sodium hydroxide solution by titrating against standard oxalic acid solution using phenolphthalein indicator.**	Record writing by the students,Record checking and viva voce of Expt. 2
5th	2	**EXPERIMENT - 3 : Standardization of KMnO4 solution using standard oxalic acid and Determine the percentage of iron present in given Hematite ore by KMnO4 solution.**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
6th	2	**EXPERIMENT - 3 : Standardization of KMnO4 solution using standard oxalic acid and Determine the percentage of iron present in given Hematite ore by KMnO4 solution.**	Record writing by the students,Record checking and viva voce of Expt. 3
7th	2	**EXPERIMENT - 4: Iodometric estimation of copper in the copper pyrite ore.**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.

Week	Period per week	EXPERIMENTS	Activity to be performed
8th	2	**EXPERIMENT - 4: Iodometric estimation of copper in the copper pyrite ore.**	Record writing by the students,Record checking and viva voce of Expt. 4
9th	2	**EXPERIMENT - 5: Volumetric estimation of total acid number (TAN) of given oil.**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
10th	2	**EXPERIMENT - 5: Volumetric estimation of total acid number (TAN) of given oil.**	Record writing by the students,Record checking and viva voce of Expt. 5
11th	2	**EXPERIMENT - 6: Volumetric estimation of total hardness of given water sample using standard EDTA solution.**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
12th	2	**EXPERIMENT - 6: Volumetric estimation of total hardness of given water sample using standard EDTA solution.**	Record writing by the students,Record checking and viva voce of Expt. 6
13th	2	**EXPERIMENT - 7:Volumetric estimation of alkalinity of given water sample using 0.01M sulphuric acid**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
14th	2	**EXPERIMENT - 7:Volumetric estimation of alkalinity of given water sample using 0.01M sulphuric acid**	Record writing by the students,Record checking and viva voce of Expt. 7
15th	2	**EXPERIMENT - 8: Proximate analysis of coal** **a) Gravimetric estimation of moisture in given coal sample** **b) Gravimetric estimation of ash in given coal sample**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
16th	2	**EXPERIMENT - 8: Proximate analysis of coal** **a) Gravimetric estimation of moisture in given coal sample** **b) Gravimetric estimation of ash in given coal sample**	Record writing by the students,Record checking and viva voce of Expt. 8
17th	2	**EXPERIMENT - 9: Determine the conductivity of given water sample.**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
18th	2	**EXPERIMENT - 9: Determine the conductivity of given water sample.**	Record writing by the students,Record checking and viva voce of Expt. 9

Week	Period per week	EXPERIMENTS	Activity to be performed
19th	2	**EXPERIMENT No.-10 :Verification of the first law of electrolysis of copper sulfate using copper electrode**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
20th	2	**EXPERIMENT No.-10 :Verification of the first law of electrolysis of copper sulfate using copper electrode**	Record writing by the students,Record checking and viva voce of Expt. 10
21st	2	**EXPERIMENT No.-11 : Construction and measurement of emf of elector chemical cell (Daniel cell)**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
22nd	2	**EXPERIMENT No.-11 : Construction and measurement of emf of elector chemical cell (Daniel cell)**	Record writing by the students,Record checking and viva voce of Expt. 11
23rd	2	**EXPERIMENT No.-12 : Determination of Viscosity of Lubricating Oil using Redwood viscometer**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
24th	2	**EXPERIMENT No.-12 : Determination of Viscosity of Lubricating Oil using Redwood viscometer**	Record writing by the students,Record checking and viva voce of Expt. 12
25th	2	**EXPERIMENT No.-13 : Determination of amount of dissolved oxygen present in a water sample**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
26th	2	**EXPERIMENT No.-13 : Determination of amount of dissolved oxygen present in a water sample**	Record writing by the students,Record checking and viva voce of Expt. 13
27th	2	**EXPERIMENT No.-14: Determination of amount of BOD present in a water sample**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
28th	2	**EXPERIMENT No.-14: Determination of amount of BOD present in a water sample**	Record writing by the students,Record checking and viva voce of Expt. 14
29th	2	**EXPERIMENT No.-15: Determination of amount of dissolved chlorine present in a water sample**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
30th	2	**EXPERIMENT No.-15: Determination of amount of dissolved chlorine present in a water sample**	Record writing by the students,Record checking and viva voce of Expt. 15

Week	Period per week	EXPERIMENTS	Activity to be performed
31st	2	**Final Record Assessment and Allocation of Sessional Mark**	Record checking and viva voce along with final record evaluation and allocation of sessional marks.
32nd	2	**Final Record Assessment and Allocation of Sessional Mark**	Record checking and viva voce along with final record evaluation and allocation of sessional marks.

BOOK REFERNCE:

Applied Chemistry by Anju Rawlley & Devdatta Vinayakrao Saraf

Sdas 31/07/2026

Concerned faculty:
Smt. Sulagna Das
Sr. Lect. Chemistry

HOD 31/7/2026
Dept. of Humanities & Sc
BOSE, Cuttack

Lesson Plan- APPLIED CHEMISTRY LAB

Discipline: Mechatronics- Sec J - GROUP-1			**Year: 1st** **Name of Faculty : Smt. Sulagna Das**
Subject: Applied Chemistry Lab(PR-3)		**No. of days per week Class allotted: 01 (2 Hours) (Thursday)** **Total Period: 64**	**Session From Date: 17-08-2026** **To date : 17-04-2027**
Week	**Period per week**	**EXPERIMENTS**	**Activity to be performed**
1st	2	**EXPERIMENT- 1 : Preparation of standard solution of oxalic acid or potassium permanganate.**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
2nd	2	**EXPERIMENT- 1 : Preparation of standard solution of oxalic acid or potassium permanganate.**	Record writing by the students,Record checking and viva voce of Expt. 1
3rd	2	**EXPERIMENT - 2 : To determine strength of given sodium hydroxide solution by titrating against standard oxalic acid solution using phenolphthalein indicator.**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
4th	2	**EXPERIMENT - 2 : To determine strength of given sodium hydroxide solution by titrating against standard oxalic acid solution using phenolphthalein indicator.**	Record writing by the students,Record checking and viva voce of Expt. 2
5th	2	**EXPERIMENT - 3 : Standardization of KMnO4 solution using standard oxalic acid and Determine the percentage of iron present in given Hematite ore by KMnO4 solution.**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
6th	2	**EXPERIMENT - 3 : Standardization of KMnO4 solution using standard oxalic acid and Determine the percentage of iron present in given Hematite ore by KMnO4 solution.**	Record writing by the students,Record checking and viva voce of Expt. 3
7th	2	**EXPERIMENT - 4: Iodometric estimation of copper in the copper pyrite ore.**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
8th	2	**EXPERIMENT - 4: Iodometric estimation of copper in the copper pyrite ore.**	Record writing by the students,Record checking and viva voce of Expt. 4
9th	2	**EXPERIMENT - 5: Volumetric estimation of total acid number (TAN) of given oil.**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
10th	2	**EXPERIMENT - 5: Volumetric estimation of total acid number (TAN) of given oil.**	Record writing by the students,Record checking and viva voce of Expt. 5
11th	2	**EXPERIMENT - 6: Volumetric estimation of total hardness of given water sample using standard EDTA solution.**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.

Week	Period per week	EXPERIMENTS	Activity to be performed
12th	2	**EXPERIMENT - 6: Volumetric estimation of total hardness of given water sample using standard EDTA solution.**	Record writing by the students,Record checking and viva voce of Expt. 6
13th	2	**EXPERIMENT - 7:Volumetric estimation of alkalinity of given water sample using 0.01M sulphuric acid**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
14th	2	**EXPERIMENT - 7:Volumetric estimation of alkalinity of given water sample using 0.01M sulphuric acid**	Record writing by the students,Record checking and viva voce of Expt. 7
15th	2	**EXPERIMENT - 8: Proximate analysis of coal a) Gravimetric estimation of moisture in given coal sample b) Gravimetric estimation of ash in given coal sample**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
16th	2	**EXPERIMENT - 8: Proximate analysis of coal a) Gravimetric estimation of moisture in given coal sample b) Gravimetric estimation of ash in given coal sample**	Record writing by the students,Record checking and viva voce of Expt. 8
17th	2	**EXPERIMENT - 9: Determine the conductivity of given water sample.**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
18th	2	**EXPERIMENT - 9: Determine the conductivity of given water sample.**	Record writing by the students,Record checking and viva voce of Expt. 9
19th	2	**EXPERIMENT No.-10 :Verification of the first law of electrolysis of copper sulfate using copper electrode**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
20th	2	**EXPERIMENT No.-10 :Verification of the first law of electrolysis of copper sulfate using copper electrode**	Record writing by the students,Record checking and viva voce of Expt. 10
21st	2	**EXPERIMENT No.-11 : Construction and measurement of emf of elector chemical cell (Daniel cell)**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
22nd	2	**EXPERIMENT No.-11 : Construction and measurement of emf of elector chemical cell (Daniel cell)**	Record writing by the students,Record checking and viva voce of Expt. 11
23rd	2	**EXPERIMENT No.-12 : Determination of Viscosity of Lubricating Oil using Redwood viscometer**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
24th	2	**EXPERIMENT No.-12 : Determination of Viscosity of Lubricating Oil using Redwood viscometer**	Record writing by the students,Record checking and viva voce of Expt. 12

Week	Period per week	EXPERIMENTS	Activity to be performed
25th	2	**EXPERIMENT No.-13 : Determination of amount of dissolved oxygen present in a water sample**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
26th	2	**EXPERIMENT No.-13 : Determination of amount of dissolved oxygen present in a water sample**	Record writing by the students,Record checking and viva voce of Expt. 13
27th	2	**EXPERIMENT No.-14: Determination of amount of BOD present in a water sample**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
28th	2	**EXPERIMENT No.-14: Determination of amount of BOD present in a water sample**	Record writing by the students,Record checking and viva voce of Expt. 14
29th	2	**EXPERIMENT No.-15: Determination of amount of dissolved chlorine present in a water sample**	Introduction of the instrument and demonstration of Experiment, Experiment performed & Observations taken by students.
30th	2	**EXPERIMENT No.-15: Determination of amount of dissolved chlorine present in a water sample**	Record writing by the students,Record checking and viva voce of Expt. 15
31st	2	**Final Record Assessment and Allocation of Sessional Mark**	Record checking and viva voce along with final record evaluation and allocation of sessional marks.
32nd	2	**Final Record Assessment and Allocation of Sessional Mark**	Record checking and viva voce along with final record evaluation and allocation of sessional marks.

BOOK REFERNCE:

Applied Chemistry by Anju Rawlley & Devdatta Vinayakrao Saraf

Sulagna Das 31/07/2026

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