

GOVERNMENT POLYTECHNIC, BARGARH
DEPARTMENT OF MATHEMATICS & SCIENCE



LESSON PLAN
ENGINEERING CHEMISTRY PRACTICAL
FOR
1ST & 2ND SEMESTERS
(BRANCH: COMMON)
(SESSION 2022-23)

PREPARED BY

Gouranga Badhei

Sr. Lecturer in Chemistry

Sr. Lect. (Math & Science)-cum-HOD
Govt. Polytechnic, Bargarh

GOVERNMENT POLYTECHNIC BARGARH

VISION

To be a reputed polytechnic institute imparting quality technical education to produce diploma engineers with dynamic personalities and innovative competencies in the state of Odisha.

MISSION

- To offer the best and advanced lab facilities adhering to the curriculum to make future engineers.
- To engage highly qualified and competent faculties to make the student acquire the skillful knowledge required.
- To develop an excellent teaching learning environment leading to create the best institute.

SYLLABUS

NAME OF THE COURSE: ENGINEERING CHEMISTRY PRACTICAL			
COURSE CODE	Pr 2 (b)	SEMESTER	1st & 2nd
THEORY PERIODS	4 Periods/Week	EXAMINATION	3 Hrs
TOTAL PERIODS	60	SESSIONAL	50 Marks
MAXIMUM MARKS	100	END SEMESTER EXAMINATION	50 Marks

SI No.	Experiment
1	Preparation and study of physical and chemical properties CO ₂ gas.
2	Preparation and study of physical and chemical properties NH ₃ gas.
3	Crystallization of Copper sulphate from copper carbonate.
4	Simple acid-base titrations (i) Acidimetry (ii) Alkalimetry
5	Tests for acid radicals (Known): (i) Carbonate, (ii) Sulphide, (iii) Chloride, (iv) Nitrate and (v) Sulphate.
6	Test for Basic radicals (Known): (i) Ammonium, (ii) Zinc, (iii) Magnesium, (iv) Aluminium, (v) Calcium, (vi) Sodium and (vii) potassium.
7	Test for unknown Acid radicals
8	Test for unknown basic radicals
9	Test for unknown salt (composed of one basic radical and one acid radical)

LESSON PLAN
Session: 2022- 23

Course Name : Engineering Chemistry	Name of the Faculty: Gouranga Badhei,
Course Code : Pr 2 (b)	Sr. Lecturer (Chemistry)
Semester : 1st & 2nd Semesters	Session : 2022-23
Periods/Week : 04	
Total Periods : 60	

CHEMISTRY LABORATORY SCHEDULE

GROUPING OF STUDENTS: GROUP-2

PERIOD	SUB-GROUP - 4	SUB-GROUP - 5	SUB-GROUP - 6
1-2	Preparation of CO ₂ , NH ₃ and Titration (1)		
3-4	Theory by Lecturer and demo by Lab. Assistant		
5-6	Preparation of CO ₂ gas	Preparation of NH ₃ gas	Titration-1
7-8	Preparation of NH ₃ gas	Titration-1	Preparation of CO ₂ gas
9-10	Titration-1	Preparation of CO ₂ gas	Preparation of NH ₃ gas
11-12	Titration-2 and crystallization. Theory by Lecturer and demo by Lab Assistant		
13-14	Titration-2	Crystallization	Viva-voce
15-16	Viva-voce	Titration-2	Crystallization
17-18	Crystallization	Viva-voce	Titration-2
19-20	Known Acid radicals (CO ₃ ²⁻ , S ²⁻ , Cl ⁻ , NO ₃ ⁻ , SO ₄ ²⁻) Theory by Lecturer and demo by Lab Assistant.		
21-22	CO ₃ ²⁻ , S ²⁻ , Cl ⁻ , NO ₃ ⁻ , SO ₄ ²⁻	Viva-voce	Viva-voce
23-24	Viva-voce	CO ₃ ²⁻ , S ²⁻ , Cl ⁻ , NO ₃ ⁻ , SO ₄ ²⁻	Viva-voce
25-26	Viva-voce	Viva-voce	CO ₃ ²⁻ , S ²⁻ , Cl ⁻ , NO ₃ ⁻ , SO ₄ ²⁻
27-28	Known Basic radicals (NH ₄ ⁺ , Zn ²⁺ , Mg ²⁺ , Ca ²⁺ , Al ³⁺ , Na ⁺ , K ⁺) Theory by Lecturer and demo by Lab Assistant.		
29-30	NH ₄ ⁺ , Zn ²⁺ , Mg ²⁺ , Ca ²⁺ , Al ³⁺ , Na ⁺ , K ⁺	Viva-voce	Viva-voce
31-32	Viva-voce	NH ₄ ⁺ , Zn ²⁺ , Mg ²⁺ , Ca ²⁺ , Al ³⁺ , Na ⁺ , K ⁺	Viva-voce
33-34	Viva-voce	Viva-voce	NH ₄ ⁺ , Zn ²⁺ , Mg ²⁺ , Ca ²⁺ , Al ³⁺ , Na ⁺ , K ⁺
35-36	Unknown acid radicals Theory by Lecturer and demo by Lab Assistant.		
37-38	Unknown acid radical	Viva-voce	Viva-voce
39-40	Viva-voce	unknown acid radical	Viva-voce
41-42	Viva-voce	Viva-voce	unknown acid radical
43-44	Unknown basic radicals Theory by Lecturer and demo by Lab Assistant.		
45-46	unknown basic radical	Viva-voce	Viva-voce
47-48	Viva-voce	unknown basic radical	Viva-voce
49-50	Viva-voce	Viva-voce	unknown basic radical
51-52	Unknown salt detection. Theory by Lecturer and demo by Lab Assistant.		
53-54	Unknown salt	Viva-voce	Viva-voce
55-56	Viva-voce	Unknown salt	Viva-voce
57-58	Viva-voce	Viva-voce	Unknown salt
59-60	Viva-voce	Viva-voce	Viva-voce

Signature of Jr. Lab Assistant

Signature of Class Teacher

Signature of HOD
Sr. Lect.(Math & Science)-cum-HOD
Govt. Polytechnic, Bargarh

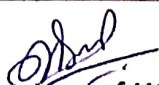
CHEMISTRY LABORATORY SCHEDULE

GROUPING OF STUDENTS: GROUP-1

PERIOD	SUB-GROUP - 1	SUB-GROUP - 2	SUB-GROUP - 3
1-2	Preparation of CO ₂ , NH ₃ and Titration (1)		
3-4	Theory by Lecturer and demo by Lab. Assistant		
5-6	Preparation of CO ₂ gas	Preparation of NH ₃ gas	Titration-1
7-8	Preparation of NH ₃ gas	Titration-1	Preparation of CO ₂ gas
9-10	Titration-1	Preparation of CO ₂ gas	Preparation of NH ₃ gas
11-12	Titration-2 and crystallization. Theory by Lecturer and demo by Lab Assistant		
13-14	Titration-2	Crystallization	Viva-voce
15-16	Viva-voce	Titration-2	Crystallization
17-18	Crystallization	Viva-voce	Titration-2
19-20	Known Acid radicals (CO ₃ ²⁻ , S ²⁻ , Cl ⁻ , NO ₃ ⁻ , SO ₄ ²⁻) Theory by Lecturer and demo by Lab Assistant.		
21-22	CO ₃ ²⁻ , S ²⁻ , Cl ⁻ , NO ₃ ⁻ , SO ₄ ²⁻	Viva-voce	Viva-voce
23-24	Viva-voce	CO ₃ ²⁻ , S ²⁻ , Cl ⁻ , NO ₃ ⁻ , SO ₄ ²⁻	Viva-voce
25-26	Viva-voce	Viva-voce	CO ₃ ²⁻ , S ²⁻ , Cl ⁻ , NO ₃ ⁻ , SO ₄ ²⁻
27-28	Known Basic radicals (NH ₄ ⁺ , Zn ²⁺ , Mg ²⁺ , Ca ²⁺ , Al ³⁺ , Na ⁺ , K ⁺) Theory by Lecturer and demo by Lab Assistant.		
29-30	NH ₄ ⁺ , Zn ²⁺ , Mg ²⁺ , Ca ²⁺ , Al ³⁺ , Na ⁺ , K ⁺	Viva-voce	Viva-voce
31-32	Viva-voce	NH ₄ ⁺ , Zn ²⁺ , Mg ²⁺ , Ca ²⁺ , Al ³⁺ , Na ⁺ , K ⁺	Viva-voce
33-34	Viva-voce	Viva-voce	NH ₄ ⁺ , Zn ²⁺ , Mg ²⁺ , Ca ²⁺ , Al ³⁺ , Na ⁺ , K ⁺
35-36	Unknown acid radicals Theory by Lecturer and demo by Lab Assistant.		
37-38	Unknown acid radical	Viva-voce	Viva-voce
39-40	Viva-voce	unknown acid radical	Viva-voce
41-42	Viva-voce	Viva-voce	unknown acid radical
43-44	Unknown basic radicals Theory by Lecturer and demo by Lab Assistant.		
45-46	unknown basic radical	Viva-voce	Viva-voce
47-48	Viva-voce	unknown basic radical	Viva-voce
49-50	Viva-voce	Viva-voce	unknown basic radical
51-52	Unknown salt detection. Theory by Lecturer and demo by Lab Assistant.		
53-54	Unknown salt	Viva-voce	Viva-voce
55-56	Viva-voce	Unknown salt	Viva-voce
57-58	Viva-voce	Viva-voce	Unknown salt
59-60	Viva-voce	Viva-voce	Viva-voce


Signature of Jr. Lab Assistant


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