STATE BOARD OF TECHNICAL EDUCATION & TRAINING, TAMILNADU
DIPLOMA IN ENGINEERING - SYLLABUS
M-SCHEME
(Implements from the Academic year 2015 - 2016 onwards)

Course Name: All Branches of Diploma in Engineering and Technology and Special Programmes except DMOP, HMCT and Film & TV

Subject Code: **30028**

Semester : II Semester

Subject Title: **ENGINEERING CHEMISTRY – II PRACTICAL**

SCHEME OF INSTRUCTIONS AND EXAMINATION:

No. of Weeks per Semester: 15 Weeks

Subject	Instructions		Examination			
			Marks			Duration
	Hours/ Week	Hours/ Semester	Internal Assessment/ Record	Board Examination	Total	
ENGINEERING CHEMISTRY - II PRACTICAL	2	30	25	75	100	3 Hours

OBJECTIVES:

1. At the end of the program the student will be able to identify the acid and basic radical present in the given Inorganic simple salt.
2. To analyse the given effluent and to find out presence of heavy metal ion present it.
3. To study about the harmful effects of the metallic pollutant.

30028 ENGINEERING CHEMISTRY – II PRACTICAL

CONTENTS

Intellectual Skills

1. Studying the effect of heating on substances and reagents
2. Study of the reactions of the following radicals leading to qualitative analysis of the given Inorganic simple salt soluble in water or dilute acids
3. Studying the harmful effects of effluents

Acid Radicals : Carbonate, Chloride, Nitrate and Sulphate

Basic Radicals : Lead, Copper, Aluminium, Zinc, Barium, Calcium, Magnesium and Ammonium

Motor Skills

1. Handling the apparatus carefully
2. Awareness on Industrial safety

I. Analysis of Inorganic simple salt (QUALITATIVE ANALYSIS)

Analysis of eight inorganic simple salts containing any one acid radical and basic radical without omitting any of the above mentioned radicals.

II. Analysis of Effluent containing Lead, Cadmium, Copper and Zinc metal ions (EFFLUENT ANALYSIS)

Analysis of four effluents, each containing the above mentioned metal ions. Report on the metallic pollutant with procedure (Basic Radical Analysis Procedure) and their harmful effects.

MODEL QUESTION PAPER **3 Hours**

1. Analyse the given Inorganic simple salt and report the acid radical and basic radical present in it.

2. Analyse the given sample of effluent and report the metallic pollutant present in it with procedure and its harmful effects.

SCHEME OF EVALUATION

FOR	MARKS
ANALYSIS OF SIMPLE SALT	46
ANALYSIS OF EFFLUENT	24
VIVA-VOCE	05
TOTAL	75

I. QUALITATIVE ANALYSIS:

FOR	MARKS
Identification of Acid Radical with Systematic Procedure	23
Identification of Basic Radical with Systematic Procedure	23

Identification of Acid Radical with confirmatory test	10
Identification of Basic Radical with confirmatory test	10
Mere Spotting of Acid Radical and Basic Radical (3+3)	06

II. EFFLUENT ANALYSIS:

FOR	MARKS
Identification of metallic pollutant with systematic procedure	20
Harmful effects of metallic pollutant	04

Group Identification Tests of metallic pollutant	10
Confirmatory Test of metallic pollutant	10
Mere Spotting of the pollutant	03

List of Apparatus to be provided for each student in Chemistry Laboratory during the Engineering Chemistry – II Practical Classes/Board Examination in addition to the required Reagents:

Sl.No.	Name of the Item	Quantity (Nos.)
1	Funnel	1
2	Glass Rod	1
3	Test Tubes (15 x 1.5 mm)	4
4	Test Tubes (15 x 1.5 mm)	1
5	Test Tube cleaning Brush	1
6	Test Tube Holder	1
7	Test Tube Stand	1
8	Wash Bottle	1

FIRST YEAR ENGINEERING CHEMISTRY LABORATORY

LIST OF EQUIPMENTS

LIST OF EQUIPMENTS REQUIRED FOR A BATCH OF 30 STUDENTS

NON-CONSUMBALE ITEMS

Sl.No.	Name of the Item	Quantity (Nos.)
1	LPG Connection	
2	Exhaust Fan (High Capacity)	Sufficient Nos.
3	Fire Extinguisher	1
4	First Aid Box (Full Set)	2
5	Safety Chart	1
6	Chemical Balance	1
7	Fractional Weight Box	1
8	pH Meter	5
9	Working Table with all accessories	8

GLASSWARE AND OTHER ITEMS

Sl.No.	Name of the Item	Quantity (Nos.)
1	Burette (50 ml)	35
2	Burette Stand	35
3	Pipette (20 ml) (With safety Bulb)	35
4	Pipette (10 ml)	5
5	Conical Flask (250 ml)	35
6	Funnel (3”)	50
7	Porcelain Tile	35
8	Measuring Cylinder (10 ml)	5
9	Measuring Cylinder (1000 ml)	2
10	Reagent Bottle (White) (250 ml)	60
11	Reagent Bottle (White) (125 ml)	100
12	Reagent Bottle (Amber) (250 ml)	80
13	Test Tube (15 mm x 1.5 mm)	1000
14	Test Tube (15 mm x 2.5 mm)	500
15	Test Tube Stand	35
16	Test Tube Holder	35
17	Test Tube cleaning brush	35
18	Glass Trough	5
19	Beaker (100 ml)`	35
20	Glass Rod (15 cm)	100
21	Watch Glass (3”)	35
22	Wash Bottle (Polythene)	35
23	Nickel Spatula	35
24	Bunsen Burner for Gas connection	35
25	Plastic Bucket (15 L)	10
26	Filter Papers (Round)	Sufficient Nos.
27	Standard Flask (100 ml)	35