Sangola Taluka Shetkari shikshan Prasarak Mandal's

VIDNYAN MAHAVIDYALA, SANGOLA

(Teaching Plan)

Department Of chemistry

Name of Faculty**: Dr. Kadam S. N. (**Assistant Professor)

Academic Year**: 2021 – 22** Class: **B.Sc. III** Semesters**: V**

Paper No. **: XII DSE-4A(I)** Paper Name**: Analytical Chemistry**

Sr.No.	Class	Month	Chapter Details
1	B.Sc. III	July	**3 Electroplating [14]** 3.1 Introduction. 3.2 Electrolysis, Faraday's laws, Cathode currentefficiency. 3.3 Basic principles of electroplating, cleaning ofarticles. 3.4 Electroplating of Nickel andChromium. 3.5 Anodising.
2	B.Sc. III	August	**2. Potentiometry [12]** 2.1 Introduction. 2.2 Detail study of calomel, quinhydrone and glass electrodes and their use in determination of pH. 2.3 Basic circuit diagram of direct readingpotentiometer 2.4 Potentiometric titrations : Classical and analytical methods for locating endpoints, i) Acid - Basetitrations. ii) Redox - titrations. iii) Precipitationtitrations. 2.5 Advantages of potentiometrictitrations.
3	B.Sc. III	September	**1. Colorimetry. [10]** 1.1 Introduction 1.2 General discussion of theory of colorimetry : Lambert law, Beer's law (Derivation not expected),

			Terms used in Colorimetry, Application of Beer's law, Deviation from Beer'slaw. 1.3Classification of methods of color measurement or comparison, Photoelectric photometer method - single cell photo-electriccolorimeter. **4 Flame photometry [12]** 4.1 Generalprinciples. 4.2 Instrumentation : Block diagram, Burners: Total consumption burner, premix or laminar-flow burner and Lundergraph burner, Mirrors, Slits, Monochromators, Filters Detectors. 4.3 Applications in qualitative and quantitativeanalysis. 4.4 Limitations of flamephotometry.
4	B.Sc. III	October	**5. Conductometry: [12]** 5.1 Basic circuit of D.C. Wheatstone bridge, Measurement of conductance by Wheatstone bridge, use of alternating current, conductivity water, Different types of conductivity cells, cell constant and its determination. Experimental determination of specific, equivalent and molarconductance. 5.2 Conductometric acid-basetitrations i. Strong acid against strongbase ii. Strong acid against weak base iii. Weak acid against strongbase. iv. Weak acid against weakbase. 5.3 Advantages of conductometrictitrations

Sangola Taluka Shetkari shikshan Prasarak Mandal's

VIDNYAN MAHAVIDYALA, SANGOLA

(Teaching Plan)

Department Of Chemistry

Name of Faculty**: Dr. Kadam S. N. (**Assistant Professor)

Academic Year**: 2020 – 21** Class: **B.Sc. III** Semesters**: VI**

Paper No. **: XVI: DSE 4 B(I)** Paper Name**: Chemistrty**

Sr.No.	Class	Month	Chapter Details
1	B.Sc. III	December	**1. Soaps and Detergents [11]** 1.1 Soaps i) Rawmaterials ii) Types ofsoaps iii) Manufacture of soap – Hotprocess iv) Cleansing action ofsoaps 1.2 Detergents i) Rawmaterials ii) Types of detergents - Cationic, anionic, amphoteric, neutraldetergents iii) Preparation of teepol andderiphat 1.3 Comparison between soaps anddetergents
2	B.Sc. III	January	**2. Synthetic Polymers [11]** 2.1 Introduction 2.2 Classification: i) According to origin, composition, method of preparation and general physicalproperties ii) Classification based uponstructure 2.3 Process of addition polymerisation - free radical polymerisation of alkenes andDienes 2.4 Ionicpolymerisation 2.5 Ziegler – Nattapolymerisation 2.6 Methods of preparation and uses of: i) Polystyrene ii) PVC iii) Phenol formaldehyde resin iv)Polyurethane 2.7 Natural rubber : General idea andvulcanisation 2.8 Synthetic rubbers : Synthesis and uses of: i) Polychloroprene ii) Buna rubber - Buna N and BunaS

3	B.Sc. III	February	**5. Green Chemistry [06]** 5.1 Introduction - Twelve principles of greenchemistry 5.2 PTC: Introduction, Role in organic reactionscatalysis 5.3 Biocatalytic reactions - Hydroxylation and oxidation usingenzymes 5.4 Introduction to microwave assistedreactions 5.5 Ionic liquids – Introduction and examples of ionicliquids **6 Chromatography [12]** 6.1 Introduction 6.2 Generalprinciples 6.3 Classification 6.4 Study of following chromatographic techniques with reference to principle, methodology andapplications i) Paperchromatography ii) Columnchromatography iii) Thin layerchromatography iv) Gas chromatography
4	B.Sc. III	March	**3. Sugar andAlcoholIndustry [11]** 3.1 Manufacture of raw canesugar 3.2 Refining of rawsugar 3.3 Whitesugar 3.4 By-products of sugarindustry 3.4.1 Manufacture of ethyl alcohol frommolasses 3.4.2 Rectified spirit, Denatured spirit absolute alcohol and poweralcohol 3.4.3 By-products of alcoholindustry. **4. SyntheticReagents [09]** 4.1 Sodium borohydride: Use in reduction of aldehydes andketones 4.2Lithium aluminium hydride: Use in reduction of aldehydes, ketones,acids, amides andesters 4.3 Osmium tetroxide : Hydroxylation ofalkenes 4.4 1,3-dithiane : Umpolung concept, reactions with alkyl halide and acylhalide 4.5 Selenium dioxide : Oxidation of carbonyl compounds and allylicoxidation