

VEER NARMAD SOUTH GUJARAT UNIVERSITY

B.E. - II (TEXTILE PROCESSING) Semester - IV

TP - 405, CHEMISTRY OF INTERMEDIATES & DYES

Teaching Scheme (No. Of Contact hr.)			Theory Exam		Practical/Quiz/Viva Exam		Grand Total
			Duration (hr.)	Marks	Sem. End Exam	Cont. Int. Evaluation	
Theory	Tut.	Pract.					
3	-	2	3	100	20	30	150

Theory

1. Brief description of intermediates, Primary intermediates.
2. **Conversion of intermediates to dyes** : Sulphonation, Nitration, Reduction etc.
3. **Industrial synthesis of intermediates** : Purity of raw materials, Yield of product.
4. Orientation rules in Benzene series.
5. Description of individual unit processes.
 - a. Sulphonating agents, Methods of Sulphonation
 - b. Nitration - Nitrating agents, Importance of mixture of $\text{HNO}_3 + \text{H}_2\text{SO}_4$ as nitrating agents, reaction conditions.
 - c. Halogenation - Halogenating agents.
 - d. Oxidation - Definition, Oxidising Agents
 - e. Reduction - Definition, Reducing Agents, synthesis of Aniline, Toluidines.
 - f. Alkali fusion - Definition, Reagents, Bucherer reaction.
 - g. Alkylation - Definition, Friedel crafts reaction.
 - h. Diazotization - Reagents, Diazotization of Aniline.
6. **Dyes** : Synthesis of a dyes from intermediate compounds, mono & diazo dyes, coupling of diazotised amines.
 - a. Colour - Definition, Colorimetric terms, Theories of colour - Unsaturation, Modern theories of colour.
 - b. Classification of Dyes - Natural Dyes, Chemical Constitution, Application Class.
7. Characteristic Properties, synthesis & application of Ionic & non-ionic Dyes like Direct, Vat, Acid, Disperse, Azoic etc.
8. Characteristic features, Synthesis & uses of dyes like Nitro dyes, Acridine, Azo.
9. **Colourless Dyes** : Concept of fluorescencic, Classification of FWAs as Stilbene based & coumarin based.
10. **Non - textile uses of dyes** :- Laser dyes, Liquid crystal display Non - textile colourants - definition, classification, soners, lakes.
11. Colour in solutions, Lambert - Beer law Absorbance, Quantative estimation of dyes by spectrophotometry, reflectance measurement, Chemical analysis.
12. Eco friendly consideration of dyestuffs & intermediates.

Practical

This shall be based on prescribed syllabii.

Term work

This shall consist of records of practical work done during practical & recorded in the journal.