

Gujarat Technological University

M. Pharm. Semester III

Paper code -930107

Paper V (Pharmaceutical Analysis)

PHARMACEUTICAL AND COSMETIC ANALYSIS

THEORY

(Four hours per week, 7 credits)

1. STABILITY OF DRUGS AND DRUG PRODUCTS. **15 Hours.**
 - a. Drug decomposition mechanisms:
 - (i) Hydrolysis and acyltransfers: Nature of reaction, structure and utility, stabilization of Pharmaceutical examples.
 - (ii) Oxidation: Nature of oxidation, kinetics of oxidation, oxidation pathways of pharmaceutical, Interest Inhibition of oxidation
 - (iii) Photolysis: Energetics of photolysis, kinetics photolysis, photolytic reactions of pharmaceutical interest, prevention of photolytic reactions.
 - b. Solid state chemical decomposition: Kinetic of solids state decomposition, Pharmaceutical examples of solid state decomposition, Pure drugs, drug excipient and drug-drug interaction in solid state, methods of stabilization.

Physical stability testing of dosage forms:
 - (1) Solids – tablets, capsules, powder and granules
 - (2) Disperse systems
 - (3) Microbial decomposition
 - (4) Over-view, physical stability of novel drug carriers, liposomes, niosomes, nano-particles.
2. Identification and quantitative determination of preservatives, Antioxidants, colouring materials, emulsifiers and stabilizers in Pharmaceutical formulation. **5 Hours.**
3. Analysis of drugs from biological samples including, selection of biological sample, extraction of drugs by various methods as LLE, SPE and Membrane filtration. Factors affecting extraction of drugs. **5 Hours.**
4. General method of analysis to determine the quality of raw materials used in cosmetic industry. **7 Hours.**
5. Indian Standard Specifications (ISI) laid down for sampling and testing of various cosmetics in finished form by the Bureau of Indian Standards. **7 Hours.**
6. Methods of analysis to determine the quality of cosmetics in the finished forms such as Hair care products, Skin care products, Baby care products, Dental products, Personal hygiene products, Colour cosmetics, Ethnic products, Colour makeup preparation, Lipsticks, Hair setting lotions and Eye shadows. **15 Hours.**

M. Pharm. Semester III
Paper V (Pharmaceutical Analysis)
PHARMACEUTICAL AND COSMETIC ANALYSIS
Practical
(Six hours per week, 8 Credits)

1. Detection and Determination of Preservatives, Antioxidants and Colouring materials in Pharmaceuticals.
2. Physical stability testing of dosage forms:
 - (1) Solids – tablets, capsules, powder and granules
 - (2) Disperse systems
3. Analysis of drugs in biological fluid: Plasma, urine, saliva etc
4. Testing of raw materials used in cosmetic industry.
5. Analysis of cosmetics in the finished forms.

Reference Books :

1. Comprehensive Pharmacy Review 5th Edition by Leon Shargel, Alan H. Mutnick, Paul F. Souney, Larry N. Sawnsen – 2004.
2. A. H. Beckett and J. B. Stenlake Practical Pharmaceutical Chemistry, Part I and Part II, 4th Edition.
3. G. H. Jeffery, J. Basset, J. Mendham, R. C. Denny (Rev. by) Vogels Text Book of Quantitative Chemical Analysis, 5th Edition 1989, ELBS.
4. The Controller of Publications; New Delhi, Govt. of India, Indian Pharmacopoeia, Vol. I and Vol. II - 2010.
5. J. B. Wilkinson and R. J. Moore : Herry's Cosmeticology; Longman Scientific and Technical Publishers, Singapore.
6. P.D. Sethi; Quantitative Analysis of Drugs in Pharmaceutical Formulations, 3rd Edition - 1997,
7. Classification of cosmetics raw materials and adjuncts IS 3958 of Indian Standards Institution (BIS).
8. Cosmetic and toilet goods – methods of sampling IS 3958 of Indian Standards Institution (BIS).
9. Methods of sampling and test for various cosmetics as laid down by Bureau of Indian Standards.
10. Drug stability: Principles and practices by Jens T. Carstensen
11. Stability Testing of Drug Products by W.Grimm.
12. Stability of Drugs and Dosage Forms by Yoshioka and Stella.