

GUJARAT TECHNOLOGICAL UNIVERSITY
BACHELOR OF PHARMACY
Semester: VII

Subject Name: **Pharmaceutical Technology- I**

Subject Code: **270002**

[THEORY]

Sr. No	Course Content	Total Hrs.
1.	Liquid dosage forms: Introduction, advantages and disadvantages, types of additives used- vehicles, stabilizers, preservatives, suspending agents, emulsifying agents, solubilizers, colors, flavors, etc; manufacturing, packaging and evaluation of clear liquids, suspensions and emulsions (including microemulsion and multiple emulsion) and brief outline of other liquid products such as extracts, tincture, infusion etc., I.P. Products.	9
2.	Semisolid dosage forms: Definition, Advantages and disadvantages, types, mechanisms of drug penetration through skin, factors influencing penetration, semisolid bases, their selection and ideal requirements of bases. General formulation of semisolids, clear gels, suppositories; Manufacturing procedure, evaluation and packaging. I.P. products.	9
3.	Pharmaceutical aerosols: Definition, propellants, general formulation of aerosols, containers, manufacturing (cold filling and pressure filling technique) and packaging methods, pharmaceutical applications, evaluation of aerosol.	7
4.	Sterile dosage forms: Definitions, Advantages, Disadvantages, Ideal requirements and Formulation of sterile dosage forms, Water for injection-Preparation and quality control, Design and requirements for production area- Aseptic techniques, sources of contamination and methods of prevention, design of aseptic area, laminar flow benches, services and maintenance, containers and closures, methods of filling including form fill and seal technology. Evaluation of sterile dosage forms, Parenteral suspensions, Prefilled syringes, Parenteral nutrients, Freeze dried products, Nanosuspensions etc, I.P. Products. Ophthalmic preparations: Requirements, formulations, methods of preparations, containers and evaluation. I.P. Products.	20

[PRACTICAL]

Remark: Wherever the preparation is official in the Indian Pharmacopoeia (I.P.), it shall be assumed as to be prepared as per I. P.

1	Formulation and evaluation of syrup
2	Formulation and evaluation of emulsion (o/w, w/o)
3	Formulation and evaluation of turpentine liniment
4	Formulation and evaluation of calamine lotion
5	Formulation and evaluation of milk of magnesia/aluminium hydroxide gel antacid suspension
6	Formulation and evaluation of dry suspension
7	Formulation and evaluation of diclofenac sodium gel
8	Formulation and evaluation of transdermal spray
9	Formulation and evaluation of calcium gluconate injection
10	Formulation and evaluation of dextrose injection
11	Formulation and evaluation of NaCl injection
12	Formulation and evaluation of dextrose saline injection
13	Formulation and evaluation of menadion injection
14	Formulation and evaluation of eye drops
15	Formulation and evaluation of multidose injection of chloroquine phosphate
16	Formulation and evaluation of metronidazole infusion
17	Formulation and evaluation of microemulsion

Text Book:

1. The Theory and Practice of Industrial Pharmacy by L Lachman, H Lieberman and J Kanig.

Reference Books:

1. Pharmaceutical Dosage Forms and Drug Delivery Systems by Ansel & others.
2. Pharmaceutics: The Science of Dosage Form Design by Michael E. Aulton
3. Gennaro, Alfonso R., Remington: The Science and Practice of Pharmacy, Vol-I & II, Lippincott Williams & Wilkins, New York.
4. Pharmaceutical Dosage Forms: Disperse systems: Vol.1, Vol. 2 and Vol.3, Ed. by Lieberman, Leon Lachman and Joseph B. Schwartz, Marcel Dekker Inc., New York.
5. Pharmaceutical Dosage Forms: Parenteral Medication: Vol.1, Vol. 2 and Vol.3, Ed. by Lieberman, Leon Lachman and Joseph B. Schwartz, Marcel Dekker Inc., New York.
6. Modern Pharmaceutics by Gilbert S. Banker and Christopher T. Rhodes, Marcel Dekker, Inc., New York.