

# RAJASTHAN UNIVERSITY OF HEALTH SCIENCE

## D. Pharm I<sup>st</sup> Year Syllabus

### PHARMACEUTICS – THEORY (ER20-11T)

Chapter No.	TOPICS	
<b>1</b>	<b>1.1</b>	History of the profession of Pharmacy in India in relation to Pharmacy education, industry, pharmacy practice, and various professional associations.
	<b>1.2</b>	Pharmacy as a career
	<b>1.3</b>	<b>Pharmacopoeia:</b> Introduction to IP, BP, USP, NF and Extra Pharmacopoeia. Salient features of Indian Pharmacopoeia
<b>2</b>	<b>Packaging materials:</b> Types, selection criteria, advantages and disadvantages of glass, plastic, metal, rubber as packaging materials	
<b>3</b>	<b>3.1</b>	<b>Pharmaceutical aids:</b> Organoleptic (Colouring, flavouring, and sweetening) agents
	<b>3.2</b>	<b>Preservatives:</b> Definition, types with examples and uses
<b>4</b>	<b>Unit operations:</b> Definition, objectives/applications, principles, construction, and workings of:	
	<b>4.1</b>	<b>Size Reduction:</b> hammer mill and ball mill
	<b>4.2</b>	<b>Size Separation:</b> Classification of powders according to IP, Cyclone separator, Sieves and standards of sieves
	<b>4.3</b>	<b>Mixing:</b> Double cone blender, Turbine mixer, Triple roller mill and Silverson mixer homogenizer
	<b>4.4</b>	<b>Filtration:</b> Theory of filtration, membrane filter and sintered glass filter
	<b>4.5</b>	<b>Drying:</b> working of fluidized bed dryer and process of freeze drying
	<b>4.6</b>	<b>Extraction:</b> Definition, Classification, method, and applications
<b>5</b>	<b>5.1</b>	<b>Tablets</b> – coated and uncoated, various modified tablets (sustained release, extended-release, fast dissolving, multilayered, etc.)
	<b>5.2</b>	<b>Capsules</b> - hard and soft gelatine capsules
	<b>5.3</b>	<b>Liquid Oral Preparations</b> - solution, syrup, elixir, emulsion, suspension, dry powder for reconstitution
	<b>5.4</b>	<b>Topical Preparations</b> - ointments, creams, pastes, gels, liniments and lotions, suppositories, and pessaries
	<b>5.5</b>	Nasal preparations, Ear preparations
	<b>5.6</b>	<b>Powders And Granules</b> - Insufflations, dusting powders, effervescent powders, and effervescent granules
	<b>5.7</b>	<b>Sterile Formulations</b> – Injectables, eye drops and eye ointments
	<b>5.8</b>	<b>Immunological Products:</b> Sera, vaccines, toxoids, and their manufacturing methods.
<b>6</b>	<b>6.1</b>	Basic structure, layout, sections, and activities of pharmaceutical manufacturing plants
	<b>6.2</b>	<b>Quality control and Quality Assurance:</b> Definition and concepts of quality control and quality assurance, current good manufacturing practice (cGMP), Introduction to the concept of calibration and validation
<b>7</b>	<b>Novel Drug Delivery Systems:</b> Introduction, Classification with examples, advantages, and challenges.	