



VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN  
(Autonomous Institution, Affiliated to Anna University, Chennai)  
Elayampalayam, Tiruchengode – 637 205



**DEPARTMENT OF BIOTECHNOLOGY**

**Course Code / Name : U13BTE17-BIOPHARMACEUTICAL TECHNOLOGY AND DRUG DEVELOPMENT**

**Class (Year / Programme / Department / Section): II/ B.TECH/ BT**

**UNIT-1 INTRODUCTION**

<b>S.No</b>	<b>Topics To Be Covered</b>	<b>Duration in Minutes</b>	<b>Teaching Aid</b>	<b>Books Referred</b>
1.	Introduction to Biopharmaceutical And Drug	45	BB	T1
2.	Definition of drug	45	BB	T1,R1
3.	Drug target lipid	45	BB	T1
4.	Drug target protein	45	BB	T1
5.	Drug target carbohydrate	45	PPT	T1,R1
6.	Drug target Nucleic acids	45	BB	R1
7.	Routes of drug administration	45	PPT	T1,R1
8.	Drug administration-A Review	45	BB	T1
9.	Quiz test	45	PPT	T1

**UNIT-II MECHANISM AND METABOLISM OF DRUGS**

	<b>Topics To Be Covered</b>	<b>Duration in Minutes</b>	<b>Teaching Aid</b>	<b>Books Referred</b>
10.	Mechanism of drug action	45	BB	T1
11.	Biotransformation	45	PPT	T1,R1

12.	Absorption metabolism	45	BB	T1
13.	Biotransformation- removal of drugs from body	45	PPT	T1
14.	Drug metabolism.	45	BB	T1,R1
15.	Toxicity testing	45	PPT	R1
16.	Toxicity testing	45	BB	T1,R1
17.	Practical applications	45	PPT	T1
18.	Quiz test	45	BB	T1

### UNIT-III--PHARMACOKINETICS AND DRUG DESIGN

	Topics To Be Covered	Duration in Minutes	Teaching Aid	Books Referred
19.	Introduction; Types of reaction-Zero order reaction	45	PPT	T1
20.	First, Second order reaction	45	BB	T1,R1
21.	Compartment modeling and their types	45	PPT	T1
22.	Drug design: Pharmacokinetic issues	45	BB	T1
23.	solubility and membrane permeability	45	PPT	T1,R1
24.	making drug more resistance to hydrolysis and drug metabolism	45	BB	R1
25.	making drugs less resistant to drug metabolism, targetting drug	45	PPT	T1,R1
26.	reducing toxicity. Combinatorial drug design	45	BB	T1
27.	Cimetidine –a rational approach to drug design	45	PPT	T1

### UNIT-IV -DRUG MANUFACTURE: PRINCIPLES, PROCESS AND APPLICATION

	Topics To Be Covered	Duration in Minutes	Teaching Aid	Books Referred
28.	Tablets - principle, process	45	BB	T1
29.	Compression and granulation of tablets	45	BB	T1,R1

30.	tablet presses' coating of tablets	45	PPT	T1
31.	Capsule preparation-principle, process and types	45	BB	T1
32.	Oral liquids and Semisolids-process and topical applications	45	BB	T1,R1
33.	Radio pharmacology	45	PPT	R1
34.	Over view of 4 <sup>th</sup> unit	45	BB	T1,R1
35.	Quiz test for 3 <sup>rd</sup> and 4 <sup>th</sup> lesson	45	BB	T1
36.	Revision for internal	45	BB	T1

#### UNIT-V -PACKING OF DRUGS AND BIOPHARMACEUTICALS

	Topics To Be Covered	Duration in Minutes	Teaching Aid	Books Referred
37.	Preservation of drugs; Analytical methods	45	BB	T1
38.	other tests used in drug manufacture	45	BB	T1,R1
39.	Packing techniques	45	BB	T1
40.	Quality management; GMP-cGMP	45	BB	T1
41.	Economics and regulatory aspects	45	PPT	T1,R1
42.	Various categories of therapeutics-Mode of action	45	BB	R1
43.	Various categories of therapeutics-metabolism with one example	45	PPT	T1,R1
44.	vitamins, laxatives, analgesics, contraceptives	45	BB	T1
45.	antibiotics and hormones	45	PPT	T1

#### TEXT BOOKS:

1) Katzung, B.G., —Basic and Clinical Pharmacology, 9th Edition., McGraw- Hill, Inc., New York, 2004

#### REFERENCE:

1) Troy, D. B [Ed], Remington : The Science and Practice of Pharmacy, 21<sup>st</sup> edition ., Vol I & II., Lippincott Williams & Wilkins., New York 2006

