

## **Third Year B.Pharm (VI Semester)**

### **361T Industrial Pharmacy-II**

#### **Students will able to Know**

- CO 1:** To become familiar with classification, theories, thermodynamic v/s kinetic stability of disperse systems.
- CO 2:** To study types, formulation development, manufacturing & evaluation of suspensions.
- CO 3:** To acquire knowledge of physicochemical properties, theory of emulsification, formulation, equipments used & evaluation of emulsions.
- CO 4:** To be acquainted with formulation development & evaluation of semisolid dosage forms.
- CO 5:** To study equipments & layout for manufacturing of suspensions, emulsions & semi-solids as per schedule M.

### **361P Industrial Pharmacy-II**

#### **Students will able to Know**

- CO 1:** To become familiar with various equipments used in pharmaceuticals laboratory relevant to suspensions, emulsions & semi-solid dosage forms.
- CO 2:** To expertise in formulation and evaluation of suspensions, emulsions & semi-solid dosage forms.
- CO 3:** To discuss use of ingredients, category and the labels so as to suit the regulatory requirements of suspensions, emulsions & semi-solid dosage forms.

### **362T Pharmaceutical Analysis-IV**

#### **Students will able to Know**

- CO 1:** Devoted to miscellaneous instrumental methods with emphasis on thermal, radiochemical and automated methods
- CO 2:** familiarize students with the fundamental principles of separation processes used in analytical chemistry such as chromatography and electrophoresis.

**CO 3:** Gain an understanding of method validation requirements per ICH and US Pharmacopoeia (USP), such as the classification of methods (e.g. assay, identity) and various characterizations (e.g. accuracy, precision, specificity, etc.)

### **362P Pharmaceutical Analysis-IV**

#### **Students will able to Know**

**CO 1:** to develop in the students an appreciation for the importance of often difficult task of judging the accuracy and precision of experimental data

**CO 2:** Application of different chromatographic separation process for analyzing amino acids, carbohydrate and dyes

**CO 3:** Elucidating The Structure of organic sample By X-Ray Diffraction

### **363T Medicinal Chemistry-II**

#### **Students will able to Know**

**CO 1:** knowledge and understanding of the enzymes of drug metabolism and its application in new drug discovery

**CO 2:** To study classification, nomenclature, SAR, MOA, therapeutic uses, adverse effects, recent development in CNS acting drugs

**CO 3:** To describe the terminology, mechanism of clot formation, clinical uses, adverse effects of drugs acting on blood

### **363P Medicinal Chemistry-II**

#### **Students will able to Know**

**CO 1:** Synthesis of medicinally important compounds and its purification

**CO 2:** Microwave assisted synthesis of drugs and its application in drug discovery

**CO 3:** To elucidate structure of synthesized compound by spectroscopy

### **364T Pharmacology-III**

### **Students will able to Know**

- CO 4:** To study pharmacology and pharmacotherapy of different drugs of specific CNS disorders as well as various general and local anesthetics.
- CO 2:** To learn Pharmacological features of different classes of NSAIDs including the essential pharmacotherapy of Rheumatoid Arthritis, Osteoarthritis and Gout.
- CO 3:** To get knowledge about mechanism of action, adverse effects and contraindications of the drugs used in the treatment of Parkinson's Disease, Migraine and Alzheimer's disease.

### **364P Pharmacology-III**

#### **Students will able to Know**

- CO 1:** To study basic principles of bioassay, types of bioassay along with advantages and disadvantages
- CO 2:** To determine unknown concentration of Acetylcholine/ Histamine using suitable isolated tissue preparations by different method like Matching, Bracketing and Interpolation bioassay
- CO 3:** To get information about different instruments using suitable computerized simulated software programme/ demonstration including different instruments in mice like Eddy's hot plate, analgesiometer, actophotometer , rotarod ,electroconvulsimeter

### **365T Natural Product Chemistry**

#### **Students will able to Know**

- CO 1:** Understand & explain various physical, chemical, spectroscopic means & methods used in structural elucidation of natural products.
- CO 2:** Explain source, chemistry & applications of drugs from marine origin. Compare & contrast marine & terrestrial sources of medicinal materials.
- CO 3:** Explain source, extraction, processing, chemistry & applications of natural products used in pharmaceutical & allied industry such as coloring & sweetening agents

### **365P Natural Product Chemistry**

#### **Students will able to Know**

**CO 1:** Extract & subsequently conduct experiments to derive various physical constants required in characterization of natural products.

**CO 2:** Charge, elute & gather pure material using column chromatography.

**CO 3:** Record UV/IR spectrum of given sample, interpret them & interpret NMR/Mass spectrum

### **366T Bio-organic Chemistry and Drug Design**

#### **Students will able to Know**

**CO 1:** Study the significance of bioorganic chemistry & its relevance to drug design.

**CO 2:** Understand various drug targets & their biochemical features, physiological role & their significance in drug design.

**CO 3:** Discuss various approaches in rational drug design.

**CO 4:** Explain prodrug concept in drug design.

### **367T Pharmaceutical Biotechnology**

#### **Students will able to Know**

**CO 1:** To know the basics of biotechnology techniques & scope of biotechnology in pharmacy.

**CO 2:** To study gene transfer, genetic engineering techniques and recombinant DNA technology including monoclonal antibodies production.

**CO 3:** To learn about biotechnology derived products, human gene therapy & transgenic animals.

**CO 4:** To acquire knowledge of enzyme technology, fermentation technology and general application of fermentation in manufacturing of antibiotics and vitamins