

Registration No :

--	--	--	--	--	--	--	--	--	--

Total Number of Pages : 02

B.Pharm  
15PH601

6<sup>th</sup> Semester Regular / Back Examination 2018-19

PHARMACEUTICS-III

BRANCH : B.Pharma

Max Marks : 100

Time : 3 Hours

Q CODE : F105

Answer Question No.1 (Part-1) which is compulsory, any EIGHT from Part-II and any TWO from Part-III.

The figures in the right hand margin indicate marks.

**Part- I**

**Q1 Only Short Answer Type Questions (Answer All-10) (2 x 10)**

- a) Define the term microencapsulation and give four of its application
- b) What do you mean by flash point test what is its significance
- c) What is the principle of fill-O-seal systems workability and How does it ensure sterility
- d) Define sol-gel-sol system and state its advantages
- e) Type-I and Type-II glasses are both subjected for water attack test. (True/False)
- f) Explain the term salting out effect and how does it influence microencapsulation
- g) What do you mean by the term PMMA and how do they find utility in design of contact lenses
- h) Define and classify clean rooms based on USP and BP
- i) How are thermo setting plastics and thermo plastic plastics different
- j) Give examples of two non aqueous vehicles used in parenteral preparations

**Part- II**

**Q2 Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve) (6 x 8)**

- a) Differentiate between type I and type II glasses
- b) Naso-lacrimal drainage system influences bio-availability of active principles from ophthalmic delivery systems. Justify
- c) Illustrate with neat diagram the air suspension technique of microencapsulation
- d) Explain the layout of a parenteral manufacturing area with a neat diagram
- e) What are the various parts of an aerosol canister, explain with neat diagram
- f) Distinguish between all three types of contact lenses with a brief note on each
- g) Explain the two methods by which sterility testing is carried out as per IP
- h) What do you mean by the term Iso-tonicity? Explain cryoscopic method for its calculation
- i) Classify the types of propellants used in manufacturing of aerosols and add a brief note on Roults law of vapour pressure
- j) What are plastics, write a note on the evaluation of plastics for parenteral and non-parenteral preparations
- k) Define the process coacervation phase separation and explain how it is utilized in formulating microencapsulated products
- l) Based on which parameters can evaluation of microencapsulated products done explain

**Part-III**

**Only Long Answer Type Questions (Answer Any Two out of Four)**

- 257 **Q3** 257 What are the steps to evaluate the aerosol products, explain any four of them in details (16) 257
- Q4** What are the various routes of administration of parenteral preparation explain each with suitable diagram (16)
- Q5** Discuss briefly the formulation aspect of ophthalmic preparations (16)
- 257 **Q6** 257 Explain briefly the influence of light, temperature, oxygen and water on selection of packing materials (16) 257

257 257 257 257 257 257 257 257

257 257 257 257 257 257 257 257

257 257 257 257 257 257 257 257

257 257 257 257 257 257 257 257

257 257 257 257 257 257 257 257

257 257 257 257 257 257 257 257

		257			257			257	
--	--	-----	--	--	-----	--	--	-----	--

Total Number of Pages : 01

B.Pharm  
15PH6026<sup>th</sup> Semester Regular / Back Examination 2018-19

MEDICINAL CHEMISTRY-II

BRANCH : B.Pharma

Max Marks : 100

Time : 3 Hours

Q.CODE: F245

Answer Question No.1 (Part-1) which is compulsory, any EIGHT from Part-II and any TWO from Part-III.

The figures in the right hand margin indicate marks.

Part-I

Q1 Only Short Answer Type Questions (Answer All-10)

(2 x 10)

- Outline the synthesis and uses of Thiopental sodium.
- Why adrenaline is used with procaine?
- Outline the synthesis and mechanism of action of 5-Fluorouracil
- Outline the synthesis and uses of Zidovudine.
- Give the structure, nomenclature and uses of chloramphenicol.
- Give the structure and nomenclature of alprazolam.
- Give the structure, nomenclature and uses of amantadine.
- Outline the synthesis and uses of nikethamide.
- Give the structure and nomenclature of imipramine.
- Give the structure and uses of Haloperidol.

Part- II

Q2 Short Answer Type Questions- (Answer Any Eight out of Twelve)

(6 x 8)

- Classify Local Anaesthetics chemically with suitable examples. Discuss the structure activity relationship of local anaesthetics.
- Classify anti-malarial agents with suitable examples. Outline the synthesis of Chloroquine.
- Classify antineoplastic agents with suitable examples. Outline the synthesis of Busulfan.
- Discuss briefly Immunosuppressives and immunostimulants.
- Discuss the different theories of mode of action of General anaesthetics.
- Discuss briefly antiparkinsonism agents with suitable examples.
- Define and classify opioid analgesics with suitable examples.
- Define and classify neuroleptics with suitable examples.
- Define and classify antiviral agents with suitable examples and add a note on Anti-HIV drugs.
- Outline the synthesis and uses of Thyroxine.
- Discuss briefly about the drugs and uses of Phosphodiesterase inhibitors.
- Discuss briefly about the drugs and uses of Angiotensin Converting Enzyme inhibitors.

Part-III

Q3 Only Long Answer Type Questions (Answer Any Two out of Four)

(16)

Define and classify antibiotics chemically with suitable examples. Discuss chemical features of  $\beta$ -lactam antibiotics. Describe the mechanism of action and structure activity relationship of penicillins. Outline the synthesis of Ampicillin and Methicillin.

Q4 Define and differentiate Sedative and Hypnotics. Classify them chemically with suitable examples. Outline the synthesis and uses of Phenobarbitone and Diazepam. Discuss the structure activity relationship of Barbiturates.

(16)

Q5 What are the different types of epileptic seizures? Define and Classify chemically anticonvulsants with suitable examples. Outline the synthesis of Phenytoin and Ethosuximide.

(16)

Q6 Define and Classify Oral hypoglycemic agents with suitable examples. Outline the synthesis of Chlorpropamide, Tolbutamide and Phenformin. Discuss briefly different types of Insulin preparations.

(16)

Registration No :

--	--	--	--	--	--	--	--	--	--

Total Number of Pages : 02

**B.Pharm  
15PH603**

**6<sup>th</sup> Semester Regular / Back Examination 2018-19**

**PHARMACOLOGY-II**

**BRANCH : B.Pharma**

**Max Marks : 100**

**Time : 3 Hours**

**Q.CODE : F380**

**Answer Question No.1 (Part-1) which is compulsory, any EIGHT from Part-II and any TWO from Part-III.**

**The figures in the right hand margin indicate marks.**

**Part- I**

**Q1 Only Short Answer Type Questions (Answer All-10) (2 x 10)**

- a) State the Mechanism of action of Nifedipine.
- b) Tachycardia and Hypotension are possible adverse effects of nitroglycerine state T/F and justify.
- c) Why Combination of Magnesium hydroxide and aluminum hydroxide is preferred over their single use.
- d) Furosemide increases ca<sup>2+</sup> as well as mg<sup>2+</sup> excretion state T/F and Justify.
- e) Enumerate the diuretics inducing rapid diuresis and highly effective in Pulmonary edema.
- f) Justify the statements "Chronic alcoholism causes folate deficiency".
- g) Enumerate any two Prokinetic drugs.
- h) State the the term compensated respiratory alkalosis.
- i) Enumerate any two 5-HT and DA antagonist.
- j) What do you mean by Raynaud's Phenomena?

**Part- II**

**Q2 Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve) (6 x 8)**

- a) Illustrate the Mechanism of action and uses of Potassium sparing diuretics.
- b) Explain the complications of high ceiling and thiazide diuretic therapy.
- c) Classify Antihypertensive drugs. Write the mechanism of action and adverse effects of CCBs
- d) Explain the role of  $\beta_2$  agonists and leukotriene antagonists in treatment of Bronchial Asthma.
- e) Illustrate the Pharmacological action and toxicity of H<sub>1</sub> antihistaminics.
- f) Illustrate the Pathophysiological role and actions of Prostaglandins.
- g) Write the different metabolic functions of Vitamin B<sub>12</sub>.
- h) Write the adverse effects and Drug interactions of Oral anticoagulants.
- i) Write the possible therapeutic use and adverse effects of Streptokinase and Urokinase.
- j) Explain the Mechanism Of Actions and uses of Ibuprofen and Ketorolac.
- k) Illustrate the Pharmacological actions and adverse effects of Preferential cox-2 inhibitors.
- l) What do you mean by Wolff-Parkinson-White Syndrome write the drug therapy for WPW Syndrome?

**Part-III**

**Only Long Answer Type Questions (Answer Any Two out of Four)**

**Q3** Classify Antihypertensive drugs. Write details Mechanism of action, Adverse effects, and uses of  $\beta$  adrenergic Blockers and angiotensin(AT1 receptor) Blockers. **(16)**

**Q4** Classify Diuretics Write the Pharmacological action, Mechanism of action and therapeutic uses of Loop diuretics. **(16)**

**Q5** Classify Drugs used in Bronchial Asthma. Write the Mechanism of action, Pharmacological action, adverse effects and uses of Theophylline. **(16)**

**Q6** Differentiate between antifibrinolytic drugs and antiplatelet drugs. Write the mechanism of action, adverse effects and uses of aspirin and Clopidogrel. **(16)**

Registration No :

--	--	--	--	--	--	--	--	--	--

Total Number of Pages : 01

B.Pharm  
15PH604

6<sup>nd</sup> Semester Regular/Back Examination 2018-19

PHARMACOGNOSY-IV

BRANCH : B.Pharma

Max Marks : 100

Time : 3 Hours

Q.CODE : F125

Answer Question No.1 (Part-1) which is compulsory, any EIGHT from Part-II and any TWO from Part-III.

The figures in the right hand margin indicate marks.

Part- I

Q1 Only Short Answer Type Questions (Answer All-10)

(2 x 10)

- Write the biological source of Rauwolfia?
- What are the applications of paper chromatography?
- State the source and utilization of Quinine.
- Write the biological source and uses of Satavari.
- What are the chemical constituents and uses of Gokhru?
- State the preparation of Asava?
- Write the botanical source and uses of Tulsi.
- Name few marketed products of Taila.
- Write the chemical constituents and uses of Lobelia.
- What is the biological source of Spirulina?

Part- II

Q2 Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve)

(6 x 8)

- Write a note on production and utilization of Podophylo toxin.
- Illustrate the method of preparation of Arista.
- Write the botanical source, uses and marketed formulations of Punarnava.
- Explain the biological source, chemical constituents and uses of Colchicum.
- Write the biological source, chemical test and uses of Ipecac.
- Illustrate the utilization and production of Tropane alkaloid.
- Write the botanical source, chemical constituents and marketed formulations of Brahmi.
- What are the principles of column chromatography?
- Explain the cultivation, collection and uses of Coca.
- Write the biological source, chemical constituents and chemical test of Kurchi.
- Enumerate the botanical name, chemical constituents and uses of Gymnema.
- Write the vernacular names, biological source and marketed formulations of Amla

Part-III

Only Long Answer Type Questions (Answer Any Two out of Four)

Q3 Explain the general methods of extraction and isolation of Alkaloids. Write the biological source, chemical constituents and uses of Nux-vomica. (16)

Q4 Describe the detail and systematic Pharmacognostic study of Cinchona. Write the biological source, chemical constituents and uses of Arjuna. (16)

Q5 Write the detail pharmacognosy of Belladonna. Describe the method of preparation of Bhasma. (16)

Q6 Discuss the biological source, life cycle and chemical constituents of Ergot. Write the applications of TLC in evaluation process of herbal drugs. (16)

Registration No :

--	--	--	--	--	--	--	--	--	--

Total Number of Pages : 02

B.Pharm  
15PH605

6<sup>th</sup> Semester Regular / Back Examination 2018-19

PHARM. BIOTECH  
BRANCH : B.Pharma  
Max Marks : 100  
Time : 3 Hours  
Q.CODE : F116

Answer Question No.1 (Part-1) which is compulsory, any EIGHT from Part-II and any TWO from Part-III.

The figures in the right hand margin indicate marks.

Part- I

Q1 Only Short Answer Type Questions (Answer All-10) (2 x 10)

- a) Define Haptens and give few examples.
- b) What is immunological tolerance?
- c) All immunogens are antigens but all antigens are not immunogens - Comment.
- d) Differentiate Cellular and Humoral immunity.
- e) What are plasmids and its role in gene cloning?
- f) What are Mutagens? Write some examples.
- g) What is HAT media and its use?
- h) What is the role of Baffles in a fermenter design?
- i) Write the advantages of microbial biotransformation?
- j) What are the uses of amylases?

Part- II

Q2 Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve) (6 x 8)

- a) What are immunoglobulins? Give an illustration on different isotypes of immunoglobulins with their specific characteristics.
- b) Classify Immunity. Give a note on Active and passive immunization with examples.
- c) Define Hypersensitivity. Discuss different types of Hypersensitivity reactions.
- d) Write about Components and steps involved in protein synthesis and add note on inhibition of protein synthesis.
- e) Give a Brief account of objectives and process of protein engineering with examples.
- f) Explain the term 'Recombination'. Write briefly the steps involved in Gene cloning and its applications.
- g) What are Immuno blotting techniques? List different types and write in detail about Southern blotting.
- h) Write note on Microbial biotransformation and applications
- i) Write a note of principle and types of ELISA with their respective advantages.
- j) Discuss in detail about production and isolation of Vitamin B12 with reference to fermentation technology.
- k) What are Biosensors? Write about its components, working principle and application in pharmaceutical industry.
- l) Write about the source, production and uses of Pencillinase.

**Part-III**

**Only Long Answer Type Questions (Answer Any Two out of Four)**

- Q3** Give a brief account on principle involved and procedure of polymerase chain reactions along with its applications in different fields. **(16)**
- Q4** What is Hybridoma Technology? Discuss in detail steps for production of Monoclonal Antibodies with a suitable example and add a note on applications of monoclonal antibodies. **(16)**
- Q5** With a neat and labeled diagram discuss the design and control of parameters in a fermenter. Describe the method of production of penicillin by fermentation. **(16)**
- Q6** What is Enzyme immobilization? Discuss methods of immobilization of enzymes with their advantages and disadvantages. Write few applications of immobilized enzymes. **(16)**



Registration No :

		257			257			257	
--	--	-----	--	--	-----	--	--	-----	--

257

257

Total Number of Pages : 01

**B.Pharm  
15PH606**

**6<sup>th</sup> Semester Regular / Back Examination 2018-19**

**PHARMACEUTICAL JURISPRUDENCE**

**BRANCH : B.Pharma**

**Max Marks : 100**

**Time : 3 Hours**

**Q.CODE : F518**

**Answer Question No.1 (Part-1) which is compulsory, any EIGHT from Part-II and any TWO from Part-III.**

**The figures in the right hand margin indicate marks.**

**Part- I**

**Q1 Only Short Answer Type Questions (Answer All-10)**

**(2 x 10)**

- Write the objectives of Pharmacy Act, 1948.
- Give the legal definition of patent and proprietary medicines (allopathic).
- What is Loan license for manufacture of new drugs?
- Write the functions of Drug Consultative Committee.
- Enumerate the term "Drugs" and "Magic remedies".
- Define schedule "H" and schedule "X"
- What is the role of De-addiction centre?
- What do you mean by manufacturing outside bond under Excise Duty Act?
- State the definition of bulk drug.
- Define misbranded drug?

**Part- II**

**Q2 Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve)**

**(6 x 8)**

- Describe the various aspects and provisions for Termination of Pregnancies according to Medical Termination of Pregnancy Act, 1975.
- Write the formula for calculation of Retail price of a drug formulation.
- What are the differences between bonded and non bonded laboratory?
- Describe the operation controlled by Central govt. and State govt. under Narcotic Psychotropic Substances Act and Rules, 1985.
- Illustrate classes of advertisements which are prohibited according to Drugs and Magic Remedies (Objectionable Advertisement) Act and Rules.
- Write the constitution and functions of DTAB.
- Describe the important points on experimentation on animals.
- Write in details about First Register.
- Write the qualification and duties of Government Analyst.
- Explain the offence and panalties of Narcotic Psychotropic Substances Act and Rules.
- What are the various functions of PCI?
- Describe the functions of health survey and development committee.

**Part-III**

**Only Long Answer Type Questions (Answer Any Two out of Four)**

**Q3 Describe the qualification, duties and procedures of Drug Inspector as per Drugs and Cosmetics Act. (16)**

**Q4 Explain the conditions required for obtaining the license for manufacture of Biological and other special products specified in schedule C & C1. (16)**

**Q5 What is Code of Pharmaceutical Ethics? Discuss in details about Code of Pharmaceutical Ethics with special reference to Pharmacist in relation to his Job and Pharmacist in relation to Medical Profession. (16)**

**Q6 Write the constitution and functions of State Pharmacy Council and Joint State Pharmacy Council according to Pharmacy Act, 1948. (16)**

Registration No :

--	--	--	--	--	--	--	--	--	--

Total Number of Pages : 01

B.Pharm  
PH.6.11

6<sup>th</sup> Semester Back Examination 2018-19  
PHARMACEUTICAL JURISPRUDENCE AND ETHICS

BRANCH : B.Pharma

Time : 3 Hours

Max Marks : 70

Q.CODE : F123

Answer Question No.1, which is compulsory, and any FIVE from the rest.  
The figures in the right hand margin indicate marks.

257 Q1 257 Answer the following questions : 257 257 257 (2 x 10) 257

- a) Define Law and Ethics.
- b) Write the objectives of Pharmacy Act, 1948.
- c) Give the legal definition of patent and proprietary medicines (allopathic).
- d) What is Repacking Licence for manufacture of new drugs?
- e) Write the duties of Government Analysts.
- f) Enumerate the term "Drugs" and "Magic remedies".
- g) Define schedule "H" and schedule "M".
- h) What is the role of De-addiction centre?
- i) State the term "Drugs Adulterated".
- j) What is Schedule C & C1?

- Q2 a) Explain the provisions for import, possession and sale of poisons according to Poisons Act, 1919. (5)
- b) Write the constitution and functions of DTAB. (5)

- Q3 a) Discuss in details about Code of Pharmaceutical Ethics with special reference to Pharmacist in relation to his Trade. (5)
- b) Write the offences and panalties of Narcotic and Psychotropic substances Act & Rules 1985. (5)

- Q4 a) Illustrate classes of advertisements which are prohibited according to Drugs and Magic Remedies (Objectionable Advertisement) Act and Rules. (5)
- b) Write a short note on Central Drugs Laboratory. (5)

- Q5 a) Describe the various aspects and provisions for Termination of Pregnancies according to Medical Termination of Pregnancy Act. (5)
- b) Write the difference between Bonded and Non-bonded laboratory. (5)

- Q6 Describe the qualification, duties and procedures of Drug Inspector as per Drugs and Cosmetics Act. (10)

- Q7 Write the constitution and functions of Pharmacy Council of India according to Pharmacy Act, 1948. (10)

- Q8 Write short answer on any TWO : (5 x 2)
- a) Describe the important points on experimentation on animals.
- b) Write notes on Drug Consultative Committee.
- c) Enumerate Patent Act.

Registration No :

--	--	--	--	--	--	--	--	--	--

Total Number of Pages : 01

B.Pharm  
PH.6.3

6<sup>th</sup> Semester Back Examination 2018-19

PHARMA CHEMISTRY - VI

BRANCH : B.Pharma

Time : 3 Hours

Max Marks : 70

Q.CODE : F117

Answer Question No.1 which is compulsory and any FIVE from the rest.

The figures in the right hand margin indicate marks.

**Q1 Answer the following questions : (2 x 10)**

- a) What is Diel's hydrocarbon?
- b) Give the Structure and nomenclature of Halothane.
- c) Give the structure and nomenclature of imipramine.
- d) Outline the synthesis and therapeutic uses of diethylstilbesterol.
- e) Outline the synthesis and uses of Clonidine
- f) Give the structure and nomenclature of Nifedipine
- g) Outline the synthesis of Methyldopa.
- h) Define neuroleptics with examples.
- i) Give two examples of Steroidal anti-inflammatory agents.
- j) Give the structure and uses of alprazolam.

**Q2 a) Define and classify steroids with suitable examples. Discuss the nomenclature and stereoisomerism of steroids. (5)**

**b) Outline the synthesis and uses of Progesterone. (5)**

**Q3 a) Define and classify androgens and anabolic agents with examples. (5)**

**b) Outline the synthesis and give the therapeutic uses of testosterone. (5)**

**Q4 a) Classify local anaesthetics with suitable examples. Discuss the structure activity relationship of local anaesthetics. (5)**

**b) Outline the synthesis and give the uses of benzocaine and procaine. (5)**

**Q5 a) Define and classify anticonvulsants with suitable examples. (5)**

**b) Outline the synthesis of phenytoin and carbamazepine. (5)**

**Q6 Classify sedatives and hypnotics with suitable examples. Outline the synthesis and give the uses of glutethimide and diazepam. (10)**

**Q7 Classify diuretics with suitable examples. Discuss the Structure activity relationship of thiazide diuretics. Outline the synthesis acetazolamide and chlorthiazide. (10)**

**Q8 Write short answer on any TWO : (5 x 2)**

- a) CNS Stimulants
- b) Antiparkinsonism agents
- c) Opioid analgesics

Registration No : 

--	--	--	--	--	--	--	--	--	--

Total Number of Pages : 01

**B.Pharm  
PH.6.7**

**6<sup>th</sup> Semester Back Examination 2018-19**

**PHARMACOGNOSY-IV**

**BRANCH : B.Pharma**

**Time : 3 Hours**

**Max Marks : 70**

**Q.CODE : F519**

**Answer Question No.1 which is compulsory and any five from the rest.**

**The figures in the right hand margin indicate marks.**

**Q1 Answer the following questions : (2 x 10)**

- a) Define the term crude drug. Give example of crude drug obtain from plant sources.
- b) Define alkaloids. Write chemical tests of alkaloids.
- c) List out the two drugs under Indole alkaloids.
- d) Write the main chemical constituents and uses of Neem.
- e) Name the botanical source, chemical constituents and uses of Punarnava.
- f) What is Glycoalkaloid? Give one example.
- g) Write uses of Arjuna and Bale.
- h) Name two marketed product of Brahmi
- i) What is Stas-Otto process?
- j) Explain about Leha.

**Q2 a) Distinguish between Asava and Arista. (5)**  
**b) Write the Pharmacognosy of opium. (5)**

**Q3 a) Explain general methods of extraction, isolation and chemical tests of alkaloids. (5)**  
**b) What is Ergot? Describe its lifecycle. (5)**

**Q4 a) Write vernacular names, botanical source, chemical constituents, uses and marketed formulations of Amla (5)**  
**b) Write details on Tulsi. (5)**

**Q5 a) Write the biological source, chemical constituents, chemical tests and uses of Withania. (5)**  
**b) Write the source of calcium sennosides. How it is useful. (5)**

**Q6 Write the method of production and utilization of the following phytoconstituents: Quinine and diosgenin (10)**

**Q7 Write details on holistic concept of Ayurveda. (10)**

**Q8 Write short answer on any TWO : (5 x 2)**

- a) Bhasma
- b) Spirulina
- c) Kuruchi

Registration No :

--	--	--	--	--	--	--	--	--	--

Total Number of Pages : 01

**B.Pharm  
PH.6.9**

**6<sup>th</sup> Semester Back Examination 2018-19**

**PHARMACOLOGY-II**

**BRANCH : B.Pharma**

**Time : 3 Hours**

**Max Marks : 70**

**Q.CODE : F379**

**Answer Question No.1 which is compulsory and any FIVE from the rest.  
The figures in the right hand margin indicate marks.**

- 257 Q1 **Answer the following questions :** 257 (2 x 10) 257
- a) Write the difference Types of Bioassay with examples.
  - b) Write the therapeutic uses and ADR of Timolol.
  - c) Sildenafil is avoided in persons taking Organic Nitrates. True or False. Justify.
  - d) Write shortly about the mechanism of actions of Fibrinolytics.
  - e) Write the principal pharmacological effects of Nifedipine.
  - f) Write examples of any two mucokinetic and mast cell stabilizers.
  - g) Define Unstable Angina. Write examples of any two venodilators.
  - 257 h) Write the therapeutic uses of Potassium sparing diuretics. 257 257
  - i) Give any two examples of respiratory stimulants and write their therapeutic uses.
  - j) Define re-entrant arrhythmia. Write any two possible therapeutic uses of class-II anti-arrhythmic drugs.
- 257 Q2 a) Classify Anti-angina Drugs. Write the detail mechanism of action and ADR of GTN (Nitroglycerine). (5)
- 257 b) Write the mechanism of action and therapeutic uses of Angiotensin Receptor AT<sub>1</sub> Blockers (ARBs). (5) 257
- 257 Q3 a) Classify Diuretics. Write the complications of high ceiling diuretics. (5)
- b) Write details mechanism of actions and therapeutic uses of Thiazide inhibitors. (5)
- 257 Q4 a) Classify 5-HT receptor antagonists. Write any two ADR and uses of Sumatriptan. (5)
- b) Write details about the Pathophysiological role of Prostaglandins (PG) and leukotriene (LT). (5) 257
- 257 Q5 a) Differentiate between opioid and non-opioid antitussives. Write the specific approaches for treatment of Cough. (5)
- b) Write the mechanism, ADR and uses of theophylline. (5)
- 257 Q6 What are the advantages of Bioassay over chemical assay? Define Quantal and Graded bioassay. Describe detail procedures of insulin bioassay. (10) 257
- 257 Q7 Differentiate between antifibrinolytic drugs and antiplatelet drugs. Write the mechanism of action, adverse effects and uses of aspirin and Clopidogrel. (10)
- 257 Q8 **Write short answer on any TWO :** (5 x 2)
- a) Plasma volume expanders
  - 257 b) Anti-diuretic hormones. 257 257 257 257
  - c) Vitamin K