

**MANIPAL UNIVERSITY****SECOND YEAR PHARM D. DEGREE EXAMINATION – JULY/AUGUST 2015****SUBJECT: PD 2.1: PATHOPHYSIOLOGY**

Tuesday, July 21, 2015

Time: 10:00 – 13:00 Hrs.

Max. Marks: 70

✍ **Answer ALL the questions.**

✍ **Long Essay Questions:**

1. Discuss the etiopathogenesis of autoimmune diseases. (10 marks)
2. Discuss the four characteristic features of malignant tumour. (10 marks)
- 3A. Explain the differences between Type 1 and Type 2 Diabetes Mellitus.
- 3B. Explain the etiopathogenesis of atherosclerosis with diagram. (5+5 = 10 marks)

4. **Short Essay Questions:**

- 4A. Enlist the positive and negative symptoms of Schizophrenia.
- 4B. Explain Glycogen storage disease.
- 4C. With the help of a neat diagram explain pathogenesis of chronic granulomatous inflammation.
- 4D. Discuss Protein calorie malnutrition.
- 4E. Describe the pathogenesis of alcoholic liver disease.
- 4F. What are the signs and symptoms and complications of Pneumonia? (5 marks × 6 = 30 marks)

5. **Short Answer Questions:**

- 5A. Enlist the beneficial effect of acute inflammation.
- 5B. Classify tumors based on histogenesis (cell of origin).
- 5C. Differentiate between depression and mania.
- 5D. Write a short note on crescendo angina.
- 5E. Enumerate four opportunistic infections of AIDS. (2 marks × 5 = 10 marks)



## MANIPAL UNIVERSITY

SECOND YEAR PHARM D. DEGREE EXAMINATION – JULY/AUGUST 2015

SUBJECT: PD 2.3: PHARMACOGNOSY AND PHYTOPHARMACEUTICALS

Saturday, July 25, 2015

Time: 10:00 – 13:00 Hrs.

Max. Marks: 70

✍ Answer ALL questions. Draw structures and diagrams wherever necessary.

✍ Long Essays:

1. Enlist the advantages and disadvantages of cultivation of crude drugs.
2. Describe the morphology, anatomy and powder microscopy of Clove.
3. Give a detailed monograph of two seed drugs which you have studied.

(10 marks × 3 = 30 marks)

4. Short Essays:

- 4A. Give the classification of crude drugs based on their therapeutic use.
- 4B. Explain the life cycle of Ergot.
- 4C. Source, method of production, chemical constituents and uses of Chaulmoogra oil
- 4D. What are Proteins and give their method of analysis.
- 4E. Define and write the types of Calcium oxalate crystals.
- 4F. Neem as a pesticide

(5 marks × 6 = 30 marks)

5. Short Answers:

- 5A. Types of quills
- 5B. Allelopathy
- 5C. CAP and HPMC
- 5D. Actinocytic stomata
- 5E. Candelabra trichomes

(2 marks × 5 = 10 marks)



**MANIPAL UNIVERSITY****SECOND YEAR PHARM D. DEGREE EXAMINATION – JULY/AUGUST 2015****SUBJECT: PD 2.4: PHARMACOLOGY – I**

Tuesday, July 28, 2015

Time: 10:00 – 13:00 Hrs.

Max. Marks: 70

✍ **Answer ALL the questions. Draw the neat, labeled diagram wherever necessary.**

✍ **Long Essays:**

1. With a neat diagram explain the structure of G-protein coupled receptor. Explain signal transduction mechanism of G-protein.

(3+7 = 10 marks)

2. Classify anti-psychotic drugs with examples. Explain the pharmacological actions and adverse effects of chlorpromazine.

(4+4+2 = 10 marks)

3. Classify hypolipidaemic agents with examples. Describe the actions of any one class. List the adverse effects.

(3+5+2 = 10 marks)

4. **Short Essays:**

4A. Mechanism of action of Echothiophate

4B. Mechanism of action of Procaine

4C. Describe the steps in noradrenergic transmission

4D. Mechanism of action of Phenytoin sodium

4E. Mechanism of action of Methylxanthines

4F. Mechanism of action of Insulin

(5 marks × 6 = 30 marks)

5. **Give reasons for the following:**

5A. Weakly basic drugs are excreted more through milk than weakly acidic drugs

5B. Adrenaline tends to reduce myocardial efficiency

5C. Systemic morphine produces miosis, but not on topical application

5D. Usually doses of drugs need to be reduced in cases of liver and kidney diseases

5E. 5HT<sub>3</sub> antagonists control cytotoxic drug-induced vomiting

(2 marks × 5 = 10 marks)



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## MANIPAL UNIVERSITY

### THIRD YEAR PHARM D. DEGREE EXAMINATION – JULY 2015

#### SUBJECT: PD 3.1: PHARMACOLOGY – II

Monday, July 20, 2015

Time: 10:00 – 13:00 Hrs.

Max. Marks: 70

✍ **Answer ALL the questions.**

✍ **Draw a neat, labeled diagram wherever necessary.**

✍ **Long Essays:**

1. Discuss the mechanism of glucocorticoids in organ transplantation. Discuss the mechanism of action, two adverse reactions and two uses of clopidogrel.

(5+3+1+1 = 10 marks)

2. With the help of a neat diagram discuss the synthesis of cell wall in a bacterial cell. Indicate the site of action of antibiotics that inhibit cell wall synthesis.

(6+4 = 10 marks)

3. What are broad spectrum antibiotics? Give examples. Discuss the mechanism of action and adverse effects of erythromycin. Enumerate its therapeutic uses.

(1+3+3+3 = 10 marks)

4. **Short Essays:**

4A. Give the mechanism of action of aspirin as an antiplatelet drug. Why is low dose aspirin given as an antiplatelet drug?

4B. Outline different techniques used in gene therapy.

4C. Explain the antitubercular mechanisms of first line agents.

4D. Write a note on bacteriophage, Cosmids and YACs as cloning vectors.

4E. Mechanism of action of polyene antibiotic and azole antifungal.

4F. Mechanism of action of potassium sparing diuretics.

(5 marks × 6 = 30 marks)

5. **Give reasons for the following:**

5A. Bacitracin is not used systemically

5B. Maintenance of genetic stability in a cell cycle

5C. A course of chloroquine and diloxanide furoate is given for amoebiasis

5D. What causes the cell cycle to arrest at restriction point 1?

5E. Expired tetracyclines cause kidney damage

(2 marks × 5 = 10 marks)





## MANIPAL UNIVERSITY

## THIRD YEAR PHARM D. DEGREE EXAMINATION – JULY 2015

## SUBJECT: PD 3.2: PHARMACEUTICAL ANALYSIS

Wednesday, July 22, 2015

Time: 10:00 – 13:00 Hrs.

Max. Marks: 70

✍ Answer ALL questions.

✍ Draw neatly labeled diagram wherever necessary.

✍ Long Essays:

1A. Explain the plate theory of chromatography with its advantages and limitations.

1B. Draw a neatly labelled diagram of gas chromatograph and explain.

(5+5 = 10 marks)

2. With the help of a neatly labeled diagram describe the double beam UV-Visible spectrometer.

(10 marks)

3A. Explain with graph the conductometric titration for the mixture of strong acid and weak acid vs strong base.

3B. What is polarogram? Explain.

(5+5 = 10 marks)

4. Short Essays:

4A. Explain with any two examples how a non-fluorescent chemical compound is converted to fluorescent chemical compound for quantitative analysis.

(5 marks)

4B. Explain the quality Management system of ISO 9000.

(5 marks)

4C. i) Mention any two names of regulated and semi regulated countries.

ii) Write the neat labeled diagram of flame photometer.

(3+2 = 5 marks)

4D. i) Differentiate nuclear magnetic resonance and electronic spin resonance spectroscopy.

ii) Explain the construction and working of any one light source used in atomic absorption spectroscopy.

(3+2 = 5 marks)

4E. Explain the theory and applications of IR spectroscopy in brief.

(5 marks)

4F. i) Classify the adsorbents of column chromatography with examples.

ii) Write the applications of gel chromatography.

(3+2 = 5 marks)

5. **Short Answer:**

- 5A. Explain the principle of atomic emission spectroscopy
- 5B. Differentiate CD and ORD
- 5C. What is thermal analysis? Classify the same.
- 5D. What are unit cell and crystal lattice?
- 5E. What are molecular ion peak and base peak in a mass spectrum

(2 marks  $\times$  5 = 10 marks)



## MANIPAL UNIVERSITY

### THIRD YEAR PHARM D. DEGREE EXAMINATION – JULY 2015

#### SUBJECT: PD 3.4: PHARMACEUTICAL JURISPRUDENCE

Monday, July 27, 2015

Time: 10:00 – 13:00 Hrs.

Max. Marks: 70

#### ✍ Long Essay Questions:

- 1A. Write general requirements as per Sch. M of Drugs and Cosmetics Act.
- 1B. Write the Constitution of DTAB.
- 2A. Write the provisions for bonded manufactory as per Medicinal and Toilet Preparations Act.
- 2B. Explain 'illicit traffic' in relation to narcotic and psychotropic substances.
- 3A. Write briefly the history of drug regulations in India before and after 1940.
- 3B. Discuss in brief the ethics that a pharmacist should observe in relation to his Job.

(10 marks × 3 = 30 marks)

#### 4. Short Essay Questions:

- 4A. What are the conditions for import of drugs for examination, test or analysis as per Drugs and Cosmetics Act?
- 4B. What are the conditions for distribution of drugs other than Sch. C, C1 through motor vehicle?
- 4C. Write the constitution of Pharmacy Council of India.
- 4D. What is the objective of Drugs and Magic Remedies Act? Write different advertisements whose import and export is prohibited under the Act.
- 4E. Write the constitution and function of institutional animal ethics committee.
- 4F. Under Section 3 of Essential Commodities Act what is the power given to Central Govt.? Add a note on how Central Govt. regulates prices of drug.?

(5 marks × 6 = 30 marks)

#### 5. Short Answers:

- 5A. Mention when an Invention is said to be Patentable.
- 5B. Define Design according to Designs Act.
- 5C. What are the objectives of Narcotic and Psychotropic Substances Act?
- 5D. Compare prescription and non-prescription drugs
- 5E. Define Drug as per Drugs and Cosmetics Act.

(2 marks × 5 = 10 marks)



## MANIPAL UNIVERSITY

## THIRD YEAR PHARM D. DEGREE EXAMINATION – JULY 2015

## SUBJECT: PD 3.5: MEDICINAL CHEMISTRY

Wednesday, July 29, 2015

Time: 10:00 – 13:00 Hrs.

Max. Marks: 70

✍ **Answer ALL the questions.**

✍ **Long Essays Questions:**

1. What are the factors that are taken into consideration while designing a prodrug? Which are the different types of prodrugs? Give examples.

What is hypertension? Explain the mechanism of action and synthesis of propranolol. Write the structures of captopril and prazosin.

(10 marks)

2. Classify antianginal agents with examples. Explain the mechanism of action of nitrovasodilators. Write the synthesis of verapamil.

What are the characteristics of an ideal preservative? Classify them with examples. Explain their mechanism of action.

(10 marks)

3. Classify anticancer agents with one structure under each class. Give the mechanism of action for methotrexate and busulphan.

Give the structure, mechanism of action for the following compounds:

Trimethoprim, sulphasalazine, Isonicotinic acid hydrazide, cycloserine and para amino salicylic acid.

(10 marks)

4. **Short Essay Questions:**

4A. Classify anti hyperlipidemic agents with examples. Explain the SAR of statins. Outline the synthesis and uses of lidocaine.

4B. Write the synthesis, mechanism of action and uses of:

i) Pyrimethamine      ii) Primaquine

4C. List out the medicinal uses of diuretics. Explain the mechanism of action of acetazolamide giving its structure. Write the synthesis of one loop diuretic.

4D. Write the chemistry of tetracyclines and penicillins.

4E. Classify urinary tract anti-infectives with one example and its structure. Outline the synthesis of one such drug.

4F. What are antiprotozoal drugs? Write the structures of any two antiprotozoal drugs. Outline the synthesis of Metronidazole.

(5 marks × 6 = 30 marks)



5. **Short Answers Questions:**

5A. Explain the mechanism of action of enalapril giving its structure.

5B. Outline the synthesis and mention the uses of the following compounds:

- i) Flucytosine                      ii) Halazone

5C. Outline the method of preparation and uses of diethyl stilbestrol.

5D. What is antisense drug technology? List out their applications.

5E. Give the name and structure of any two diagnostic agents used in Cardiac function test and Liver function test.

(2 marks  $\times$  5 = 10 marks)



**MANIPAL UNIVERSITY**  
**SECOND YEAR PHARM D. DEGREE EXAMINATION – JULY/AUGUST 2015**  
**SUBJECT: PD 2.6: PHARMACOTHERAPEUTICS – I**

Saturday, August 01, 2015

Time: 10:00 – 13:00 Hrs.

Max. Marks: 70

✍ **Answer ALL the questions.**

✍ **Long Essays:**

1A. Define Coronary Artery Disease (CAD) and mention the risk factors. Write the management of ST segment elevated Myocardial Infarction.

1B. Explain the role of nitrates and calcium channel blockers in the management of stable angina.  
(6+4 = 10 marks)

2. Describe the principles and goals of drug therapy in the elderly.  
(10 marks)

3A. Explain the etiology of Diabetes Mellitus (DM).

3B. Write the treatment modalities in the management of type 2 DM.  
(3+7 = 10 marks)

4. **Short Essays:**

4A. Write the pharmacotherapy of Primary Open Angle glaucoma.

4B. Define essential drug concept and enumerate the advantages of rational prescribing.

4C. Classify hypertension and explain the management of stage II hypertension.

4D. Briefly explain drug induced air flow obstruction.

4E. Classify hypothyroidism and explain the role of thyroxine in its management.

4F. Write the Step up therapy for chronic asthma.

(5 marks × 6 = 30 marks)

5. **Short Answers:**

5A. Enumerate the adverse effects of estrogen and progesterone.

5B. Explain action potential with a suitable illustration.

5C. Write the dosage regimen and adverse effects of statins.

5D. Write the role of inhaled corticosteroids in acute exacerbation of COPD.

5E. Classify Insulin based on duration of action.

(2 marks × 5 = 10 marks)

