

MANIPAL UNIVERSITY**THIRD YEAR B. PHARM. DEGREE EXAMINATION – MAY 2012****SUBJECT: HOSPITAL AND COMMUNITY PHARMACY (PPR 301)
(CREDIT BASED SYSTEM)**

Wednesday, May 02, 2012

Time: 10:00 – 13:00 Hrs.

Max. Marks: 50

Long Essay:

1. Define Hospital Pharmacy and explain its organization in a large hospital.
(1+7 = 8 marks)
2. Enumerate various methods of inventory control and explain any two.
(2+6 = 8 marks)
3. Explain the selection of location, layout and functions of a community pharmacy.
(3+2+3 = 8 marks)

Short Essay:

- 4A. What is Central Sterile Supplies Department and explain its organization?
- 4B. Enumerate various factors contributing for medication errors and explain any one strategy to overcome the same.
- 4C. Explain any two methods of dispensing drugs during off hours.
- 4D. What are the factors contributing for patient non-compliance and the ways to overcome the same?
(4×4 = 16 marks)

Short Answer:

- 5A. Enumerate two criteria for drugs to be classified as OTC drugs.
- 5B. Enumerate the important methods of drug distribution to inpatients.
- 5C. List out the different members of a Pharmacy and therapeutic committee.
- 5D. Mention various quality control tests for IV fluids.
- 5E. Define hospital formulary system.
(2×5 = 10 marks)



MANIPAL UNIVERSITY**THIRD YEAR B. PHARM. DEGREE EXAMINATION – MAY 2012****SUBJECT: PHARMACEUTICAL BIOTECHNOLOGY (PBT 302)
(CREDIT BASED SYSTEM)**

Friday, May 04, 2012

Time: 10:00 – 13:00 Hrs.

Max. Marks: 50

✍ Answer all the questions.**✍ Long Essays:**

1. Discuss the Production of Penicillin with references to strain selection and fermentative conditions.
2. Mention the different expression vectors and explain the application of Plasmids in Recombinant DNA technology, with suitable examples.
3. Explain the economic and technical advantages of microbial enzymes over plant and animal enzymes and discuss immobilization of enzymes by entrapment technique.

(8×3 = 24 marks)

4. Short Essays:

- 4A. Briefly outline the facilities required for establishing an animal tissue culture laboratory and mention the usage of trypsin in disaggregation of animal tissues.
- 4B. Briefly outline the procedure for the production of Diphtheria Toxoid.
- 4C. Outline the procedure for standardization of Thyroxine.
- 4D. Explain the principle and application of Plate and frame filter press.

(4×4 = 16 marks)

5. Short Questions:

- 5A. Mention the types of impellers used in industrial fermentors.
- 5B. How do bacteria protect their DNA from their own restrictive endonucleases?
- 5C. Mention the difference between one level and two level factorial assays of antibiotics.
- 5D. Why is stainless steel preferred over cast iron as a construction material?
- 5E. Mention any two advantages of rotary drum filters.

(2×5 = 10 marks)



MANIPAL UNIVERSITY**THIRD YEAR B. PHARM. DEGREE EXAMINATION – MAY 2012****SUBJECT: PHYSICAL PHARMACEUTICS AND BIOPHARMACEUTICS (PCE 303)
(CREDIT BASED SYSTEM)**

Monday, May 07, 2012

Time: 10:00 – 13:00 Hrs.

Max. Marks: 50

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

✍ **Long Essays:**

1. Discuss the applications of compaction in pharmaceutical formulations.
2. What is an adsorption isotherm? Derive Langmuir adsorption isotherm and explain.
3. Explain the effect of drug pK_a and Urine pH on the passive reabsorption of drugs.

(8×3 = 24 marks)

4. Short Essays:

- 4A. Define half life. What relationship does the half life bear to the initial concentration in zero and first order reaction?
- 4B. Mention different types of densities in powders and explain the methods to determine the same.
- 4C. Explain 'Faraday-Tyndall Phenomenon' and 'Brownian movement' in colloids.
- 4D. Define bioavailability. What are the objectives of bioavailability studies?

(4×4 = 16 marks)

5. Short Answers:

- 5A. Write the equation for
 - i) Noyes-Whitney equation
 - ii) Hixon-Crowell cube root law.
- 5B. What are the factors responsible for the difference in drug distribution in persons of different age groups?
- 5C. What is the difference between solid solutions and solid dispersions?
- 5D. Explain the terms Antithixotropy and Rheopexy.
- 5E. What are protective colloids? Define gold number.

(2×5 = 10 marks)



MANIPAL UNIVERSITY

THIRD YEAR B. PHARM. DEGREE EXAMINATION – MAY 2012

SUBJECT: MEDICINAL CHEMISTRY – I (PCH 304)
(MAHE SYLLABUS)

Wednesday, May 09, 2012

Time: 10:00 – 13:00 Hrs.

Max. Marks: 75

Answer all the questions.**Long essays:**

1. Explain the biosynthesis and stereochemistry of acetylcholine. What are the structural features necessary for a compound to show cholinergic activity? Write the synthesis of Carbachol.

(4+4+2 = 10 marks)

2A. What is Bioisosterism? Give examples and state the impact of bioisosteric modification on the properties of drug molecules.

2B. Outline the synthesis of one drug from aminoalkyl ethers and piperazine type of antihistamines.

(5+5 = 10 marks)

3A. Describe the chemical modifications of Morphine and their beneficial effects.

3B. Write the synthesis of Meperidine and methadone and compare their analgesic activities.

(5+5 = 10 marks)

4A. Discuss the Phase-II drug metabolism with one example.

4B. Write the significance of Solubility, Hydrogen bonding and Protein binding as physicochemical properties affecting the drug's biological activity.

(5+5 = 10 marks)

5. Short essays:

5A. Write the synthesis, chemical name and use of

i) Lorazepam, ii) Cyclopropane iii) Chlorphenesin iv) Glutethimide.

5B. Classify Cholinergic blocking agents with one examples and structure. Outline the synthesis of Procyclidine.

5C. Explain the SAR of anticonvulsants.

5D. Explain the mechanism of action of general anesthetics and discuss the SAR of barbiturates.

5E. Write the synthesis and uses of i) Diclofenac Sodium ii) Ibuprofen.

5F. Explain the cyclooxygenase and lipoxygenase pathways of eicosonoid biosynthesis.

5G. i) Explain the SAR of benzoic acid derivatives as local anesthetics.

ii) Write a note on the mechanism of action of inhalation anesthetics.

(5×7 = 35 marks)



MANIPAL UNIVERSITY

THIRD YEAR B. PHARM. DEGREE EXAMINATION – MAY 2012

SUBJECT: MEDICINAL CHEMISTRY – I (PCH 304) (CREDIT BASED SYSTEM)

Wednesday, May 09, 2012

Time: 10:00 – 13:00 Hrs.

Max. Marks: 50

Long Essays:

- 1A. Classify anticonvulsants with suitable examples giving the structure of one drug from each class. Outline the synthesis of Phensuximide.
- 1B. Write the synthesis of Pyridostigmine and Procyclidine.
(5+3 = 8 marks)
- 2A. Define sedatives, hypnotics and anti-anxiety agents. Explain the SAR of barbiturates. Write the synthesis, chemical name and use of phenobarbitone or Glutethimide.
- 2B. Write a note on sympathomimetics with mixed mechanism of action.
(5+3 = 8 marks)
- 3A. Define and classify local anesthetics on the basis of their chemical features giving examples. Outline the synthesis and use of lidocaine.
- 3B. What are H₂-receptor antagonist? Write a note on development of Cimetidine.
(5+3 = 8 marks)

4. Short Essays:

- 4A. Outline the synthesis of Phenacetin and Naproxen.
- 4B. Explain with two examples oxidative and hydrolytic biotransformations.
- 4C. Write the synthesis of Methohexital and Secobarbital with their specific use.
- 4D. Write the synthesis of Dicylomine and Procyclidine. Mention their specific uses.
(4×4 = 16 marks)

5. Short Answers:

- 5A. What are antidepressants? Classify them with one example from each class.
- 5B. What are antitussives? Give three examples with their structures.
- 5C. Give the structure of drug that exhibits i) Optical Isomerism ii) Geometrical Isomerism iii) Isosterism and iv) Chelation.
- 5D. Outline the biosynthetic pathway of adrenergic neurotransmitters.
- 5E. Mention the specific uses of the following:
i) Dinoprostone ii) Misoprostol iii) Diphenoxylate iv) Naloxone.
(2×5 = 10 marks)



MANIPAL UNIVERSITY**THIRD YEAR B. PHARM. DEGREE EXAMINATION – MAY 2012****SUBJECT: PHARMACOLOGY – I (PHA 305)
(CREDIT BASED SYSTEM)**

Friday, May 11, 2012

Time: 10:00 – 13:00 Hrs.

Max. Marks: 50

Answer all questions.**Long essay:**

1. What is biotransformation? Explain the synthetic biotransformation reactions.
(2+6 = 8 marks)
2. Classify insulin preparations. Explain signal transduction by insulin receptors.
(3+5 = 8 marks)
3. Diagrammatically depict the sites of action of diuretics on a nephron. Explain the mechanism of action of any one class of diuretics.
(4+4 = 8 marks)

4. Short Essay:

- 4A. Explain the mechanism of action of warfarin.
- 4B. Explain the mechanism of action of anticholinesterases with the help of a diagram.
- 4C. Explain the mechanism of action of amiodarone.
- 4D. Explain the role of renin- angiotensin system in hypertension and the drugs affecting this.
(4×4 = 16 marks)

5. Short Answers:

- 5A. Testosterone is not administered orally.
- 5B. Though it blocks the active carrier for both penicillin and uric acid, probenecid decreases the excretion of former and increases the excretion of latter.
- 5C. In organophosphorus poisoning pralidoxime is not effective if administered 48 hours after poisoning has occurred.
- 5D. Furosemide enhances digitalis toxicity.
- 5E. Beta blockers should not be given alone in unstable angina.
(2×5 = 10 marks)



MANIPAL UNIVERSITY

THIRD YEAR B. PHARM. DEGREE EXAMINATION – MAY 2012

SUBJECT: PHARMACOGNOSY- II (PCO 306) (MAHE SYLLABUS)

Monday, May 14, 2012

Time: 10:00 – 13:00 Hrs.

Max. Marks: 75

✍ **Answer all questions.**

✍ **Draw neat labelled diagrams and structure wherever necessary.**

1. Short Essay:

- 1A. Describe in detail the maceration process for organized and unorganized drug, add a note on factors affecting the same.
- 1B. Give the source active constituent, uses of i) Dioscoria ii) Digitalis
- 1C. Explain the biogenesis of Prunasin.
- 1D. Give the source and explain the chemical tests for Asafoetida.
- 1E. Give an account on precursor product sequence and competitive feeding.
- 1F. Draw a chart showing inter relationship between the cardiac glycosides of Digitalis purpuria and Digitalis lanata.
- 1G. Give the biological source chemical constituents and uses of i) Cannabis ii) Male fern

(5×7 = 35 marks)

✍ Long Essay:

2. How volatile oils are distributed in nature? Describe the different methods used for the extraction of the same.
3. Explain the T.S and powder microscopy of i) Licorice ii) Senna
4. Write the pharmacognostic report on Cinnamon.
5. Describe Ginger under a suitable pharmacognostic scheme.

(10×4 = 40 marks)



MANIPAL UNIVERSITY

THIRD YEAR B. PHARM. DEGREE EXAMINATION – MAY 2012

SUBJECT: PHARMACOGNOSY- II (PCO 306) (CREDIT BASED SYSTEM)

Monday, May 14, 2012

Time: 10:00 – 13:00 Hrs.

Max. Marks: 50

✍ **Answer all questions. Draw neat labeled diagrams and structure wherever necessary.**

✍ **Long Essay:**

1. Define Cardiac glycosides. Give the botanical source and describe the cultivation and collection of Digitalis.
2. Describe general methods used for the extraction of crude drugs.
3. Give the source, method of production, chemical nature, chemical tests and uses of Storax and Guggul.

(8×3 = 24 marks)

4. **Short Essay:**

- 4A. Give an account of precursor product sequence and competitive feeding.
- 4B. Give the biosynthesis of Hyoscyamine from Ornithine.
- 4C. What are bitters? Give their uses. Give the botanical source constituents and uses of Quassia.
- 4D. Explain the method of cultivation and collection of Mentha.

(4×4 = 16 marks)

5. **Short Answer:**

- 5A. Explain why Cascara bark should be stored for at least one year before use.
- 5B. Differentiate Cinnamon from Cassia chemically.
- 5C. Give the botanical source and uses of a drug containing Citral as a prime component.
- 5D. Ecuelle method.
- 5E. Valerian.

(2×5 = 10 marks)



MANIPAL UNIVERSITY**THIRD YEAR B. PHARM. DEGREE EXAMINATION – MAY 2012****SUBJECT: PHARMACEUTICAL JURISPRUDENCE (PMA 307)****(CREDIT BASED SYSTEM)**

Wednesday, May 16, 2012

Time: 10:00 – 13:00 Hrs.

Max. Marks: 50

✍ **Answer all the questions.**✍ **Long essay questions:**

- 1A. Write the functions of State Pharmacy Council and Joint State Pharmacy Council.
- 1B. Explain the procedure to fix prices of bulk drugs as mentioned under DPCO.

- 2A. Describe briefly the operations which are totally prohibited and which are controlled by the central and state governments under the Narcotic Drugs and Psychotropic Substances Act.
- 2B. Explain warehousing of alcoholic preparations under Medicinal and Toilet Preparations Act.

3. Outline provisions of following Schedules according to D&C Act 1940 and Rules, 1945:
 - i) Schedule C & C₁
 - ii) Schedule N & Y
 - iii) Schedule X & V
 - iv) Schedule M

(8×3 = 24 marks)

4. Short note questions:

- 4A.
 - i) Discuss in brief the ethics that a pharmacist should observe in relation to his Job.
 - ii) Write a short note on Pharmaceutical Enquiry Committee.

(2+2 = 4 marks)
- 4B.
 - i) Define “Drug” and “Magic Remedies” according to Drugs and Magic Remedies (Objectionable Advertisement) Act, 1954.
 - ii) Write a short note on Japan’s Drug Regulatory Authority.

(2+2 = 4 marks)
- 4C.
 - i) Define “Sales Promotion Employee” as per the Sales Promotion Employees Act 1976.
 - ii) Describe the duties of food inspector as mentioned under Prevention of Food Adulteration Act.

(1+3 = 4 marks)
- 4D. Write briefly about Patent Filing Procedure.

(4 marks)

5. Short answer questions:

- 5A. Explain “Health and Safety” of employees under The Bombay Shops and Establishments Act.
- 5B. Mention functions and powers of AICTE council.
- 5C. Under what circumstances a 12 week old pregnancy can be terminated?
- 5D. Write objectives of Poisons Act 1919 and Insecticides Act.
- 5E. Outline the Institutional Animals Ethics Committee under The Prevention of Cruelty to Animals Act.

(2×5 = 10 marks)

