

## MANIPAL UNIVERSITY

## THIRD YEAR B. PHARM. DEGREE EXAMINATION – MAY 2015

SUBJECT: HOSPITAL AND COMMUNITY PHARMACY (PPR 301)

(CREDIT BASED SYSTEM)

(NEW REGULATION)

Monday, May 04, 2015

Time: 10:00 – 13:00 Hrs.

Max. Marks: 50

✍ **Answer ALL the questions.**

✍ **Long Essay Questions:**

1. Enumerate various methods of inventory control and explain any two methods with its advantages.
2. Define unit dose. Explain the procedure of unit dose drug distribution system with its advantages.
3. Define Hospital Pharmacy. Categorize its staff and explain their functions.

(8 marks × 3 = 24 marks)

4. **Short Essay Questions:**

- 4A. Explain the objectives of proper layout and layout design of community pharmacy with neat diagram.
- 4B. How to ensure quality of drugs purchased in the hospital pharmacy?
- 4C. Define medication error. Mention various factors contributing for medication error. Explain any one.
- 4D. What is the role of purchasing agent and pharmacists in drug procurement?

(4 marks × 4 = 16 marks)

5. **Short Answers Questions:**

- 5A. Explain the use of emergency drug box during off hours.
- 5B. Give a formula for 'return on total assets' and 'return on owners equity'.
- 5C. Explain the parts of patient information leaflet.
- 5D. How to handle radiopharmaceuticals?
- 5E. What is readability formula and its limitations?

(2 marks × 5 = 10 marks)



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**MANIPAL UNIVERSITY**  
**THIRD YEAR B. PHARM. DEGREE EXAMINATION – MAY 2015**  
**SUBJECT: HOSPITAL AND COMMUNITY PHARMACY (PPR 301)**  
**(CREDIT BASED SYSTEM)**  
**(REPEATER)**

Monday, May 04, 2015

Time: 10:00 – 13:00 Hrs.

Max. Marks: 50

☞ Answer ALL the questions.

☞ Long Essay Questions:

1. Explain the layout for the manufacturing of large volume parenterals.
2. What is hospital formulary and explain the guiding principles to adapt hospital formulary system.
3. Enumerate various methods of dispensing during off hours. Explain any two methods with its advantages.

(8 marks × 3 = 24 marks)

4. Short Essay Questions:

- 4A. What is essential drug concept? Explain its advantages.
- 4B. Explain the application of computers in hospital pharmacy.
- 4C. Explain ABC method of inventory control with its advantages.
- 4D. Explain the layout design for the patient information leaflet.

(4 marks × 4 = 16 marks)

5. Short Answers Questions:

- 5A. What is Economic order quantity and write the formula to calculate the same.
- 5B. Write two classifications of the Hospital.
- 5C. Define charge and non charge floor stock drugs with example.
- 5D. Mention the type of records maintained in the community pharmacy.
- 5E. What are the storage conditions for drugs as per Indian Pharmacopoeia?

(2 marks × 5 = 10 marks)



**MANIPAL UNIVERSITY****THIRD YEAR B. PHARM. DEGREE EXAMINATION – MAY 2015****SUBJECT: PHARMACEUTICAL BIOTECHNOLOGY (PBT 302)  
(CREDIT BASED SYSTEM)**

Wednesday, May 06, 2015

Time: 10:00 – 13:00 Hrs.

Max. Marks: 50

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

✍ **Long Essay Questions:**

1. Discuss the biosynthesis and recovery of Penicillin. Mention the characteristics of strain employed.
2. Discuss recombinant DNA technology with respect to Restrictive endonucleases and Vectors.
3. Enlist the different methods of immobilization. Explain the principle, advantages and disadvantages of each method.

(8 marks × 3 = 24 marks)

4. **Short Essay Questions:**

- 4A. What is hybridoma technology? Briefly explain the production of monoclonal antibodies.
- 4B. Define and classify vaccines. Briefly outline the steps involved in the preparation of killed bacterial vaccines.
- 4C. Classify blood products and mention labeling requirements for Whole Human Blood I.P.
- 4D. Explain the working principle and application of a rotary continuous filter with the help of a neat labeled diagram.

(4 marks × 4 = 16 marks)

5. **Short Answer Questions:**

- 5A. Differentiate between fermentation and putrefaction.
- 5B. What are positive and negative characteristics of strains employed for citric acid production?
- 5C. Expand PCR and mention its application.
- 5D. Mention the equation for estimating potency of antibiotic by two level factorial assay.
- 5E. Mention any two uses of plastic as a material of Plant construction.

(2 marks × 5 = 10 marks)





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## MANIPAL UNIVERSITY

THIRD YEAR B. PHARM. DEGREE EXAMINATION – MAY 2015

SUBJECT: PHYSICAL PHARMACEUTICS AND BIOPHARMACEUTICS (PCE 303)  
(CREDIT BASED SYSTEM)

Friday, May 08, 2015

Time: 10:00 – 13:00 Hrs.

Max. Marks: 50

✍ Answer all the questions.

✍ Long Essays:

- 1A. Derive rate equation and half-life of first – order reactions.  
1B. Define angle of repose. Explain a method to determine angle of repose of a powder. (4+4 = 8 marks)
- 2A. Discuss phase-II Glucuronic acid conjugation reaction.  
2B. Explain any four factors affecting gastric emptying of drugs. (4+4 = 8 marks)
- 3A. Write short notes on biliary excretion of drugs.  
3B. Explain single dose plasma level-time study to measure bioavailability. (4+4 = 8 marks)

4. Short Notes:

- 4A. Explain the process of micellar solubilisation.  
4B. Explain shear thinning and shear thickening systems with examples.  
4C. Write about the methods for physical evaluation of emulsion stability.  
4D. Explain a method to determine molecular weight of polymers using the optical property of colloids. (4 marks × 4 = 16 marks)

5. Short Answers:

- 5A. Draw the electrical double layer and briefly explain the various regions.  
5B. What is plug flow? How can it be avoided?  
5C. Why Fick's second law is having less pharmaceutical importance in comparison of Fick's first law?  
5D. Write Arrhenius equation with its significance.  
5E. Give two pharmaceutical applications of inclusion complexes. (2 marks × 5 = 10 marks)



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MANIPAL UNIVERSITY

THIRD YEAR B. PHARM. DEGREE EXAMINATION – MAY 2015

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

Monday, May 11, 2015

Time: 10:00 – 13:00 Hrs.

Max. Marks: 50

✍ Answer ALL the questions.

✍ Long Essays:

1A. Describe in brief the effect of protein binding and chelation on drug activity.

1B. Discuss the factors affecting drug metabolism.

(4+4 = 8 marks)

2. Classify antihistamines with example giving one structure from each class. Write the biosynthesis of histamine and outline the synthesis of mepyramine.

(8 marks)

3A. Write the synthesis of metaraminol and naphazoline.

3B. Give the chemical reaction involved in the biosynthesis and metabolism of acetylcholine.

(4+4 = 8 marks)

4. Short Essays:

4A. Classify Barbiturates with an example and its structure. Explain the SAR of barbiturates as sedatives and hypnotics.

(4 marks)

4B. i) Write the structure, IUPAC name and uses of any two benzodiazepine derivatives.

ii) Name the drugs used in spasticity and outline the synthesis of any one.

(2+2 = 4 marks)

4C. Give the synthesis, IUPAC name and uses of Diclofenac.

(2+1+1 = 4 marks)

4D. Give the chemical classification of local anesthetics giving one example for each class.

(4 marks)

5. Short Answers:

5A. Name any two aldehydes derivatives used as sedatives and hypnotics and outline the synthesis of one such compound.

5B. Define:

i) Drug      ii) Pharmacophore      iii) Prodrug      iv) Therapeutic Index

5C. Write the synthesis of any one dibenzazepine derivative used as anticonvulsant.

5D. Why anilides are ineffective as anti-inflammatory agents? Explain.

5E. Give the classification of parasympatholytic agents giving examples.

(2 marks × 5 = 10 marks)



**MANIPAL UNIVERSITY**  
**THIRD YEAR B. PHARM. DEGREE EXAMINATION – MAY 2015**  
**SUBJECT: PHARMACOLOGY – I (PHA 305)**  
**(CREDIT BASED SYSTEM)**

Wednesday, May 13, 2015

Time: 10:00 – 13:00 Hrs.

Max. Marks: 50

✍ Answer ALL questions

✍ Draw diagrams wherever necessary.

✍ Long Essays:

1. Explain the factors affecting volume of distribution of drugs. Mention two clinically significant drug interactions involving  $V_d$ .

(8 marks)

2. Classify diuretics with examples. Explain the mechanism of action of high ceiling diuretics. Enumerate their uses and side effects.

(3+3+2 = 8 marks)

3. With the help of a diagram, explain the mechanism of action of corticosteroids. What are the effects of glucocorticoids on glucose, protein and lipid metabolism?

(5+3 = 8 marks)

4. Short Essay Questions:

4A. Describe, with examples, the various methods to prolong the duration of action of drugs.

4B. Briefly write the pharmacological actions of alpha blockers.

4C. Explain the significance of renin-angiotensin-aldosterone pathway and list the drugs affecting it.

4D. Explain the synthesis of prostaglandins and list the drugs affecting it.

(4 marks × 4 = 16 marks)

5. Give reasons for the following:

5A. Combination of progesterone and estrogen in oral contraceptive pills

5B. Acetylcholine is not suitable for use as a cholinergic drug

5C. Rectal route can be used for local as well as systemic delivery of drugs

5D. Potassium citrate is used in the treatment of wet cough

5E. Warfarin has a very low volume of distribution

(2 marks × 5 = 10 marks)





## MANIPAL UNIVERSITY

### THIRD YEAR B. PHARM. DEGREE EXAMINATION – MAY 2015

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

Friday, May 15, 2015

Time: 10:00 – 13:00 Hrs.

Max. Marks: 50

✍ Answer ALL questions.

✍ Draw neat labeled diagrams and structure wherever necessary.

✍ Long Essays:

1. Define Cardiac glycosides. Give their occurrence, classification and chemical nature. Describe a bufadienolide containing drug with source, diagnostic characters, chemical constituents and uses.
2. Describe the general methods used for the extraction of phytoconstituents.
3. Give the source, method of production, chemical nature, chemical tests and uses of Myrrh and Asafoetida.

(8 marks × 3 = 24 marks)

4. Short Essay:

- 4A. Give an account of precursor product sequence and competitive feeding.
- 4B. Outline the conversion of phenyl alanine to prunasin.
- 4C. What are Bitters? What are their uses? Write the botanical source, constituents and uses of Chirata.
- 4D. Explain the method of cultivation and collection of Coriander.

(4 marks × 4 = 16 marks)

5. Short Answer:

- 5A. Give a suitable reason why Cascara bark should be stored at least for one year before use.
- 5B. Bring out the differences between Essential oils and Fixed oils.
- 5C. Give the botanical source of a drug containing Cineole as a prime component and mention its uses.
- 5D. Differentiate Cinnamon from Cassia.
- 5E. Write a note on Chenopodium oil.

(2 marks × 5 = 10 marks)



**MANIPAL UNIVERSITY****THIRD YEAR B. PHARM. DEGREE EXAMINATION – MAY 2015****SUBJECT: PHARMACEUTICAL JURISPRUDENCE (PMA 307)  
(CREDIT BASED SYSTEM)**

Monday, May 18, 2015

Time: 10:00 – 13:00 Hrs.

Max. Marks: 50

✍ Answer ALL the questions.

✍ Long Essays:

- 1A. Describe the objectives of Pharmacy Act. Who are the ex-officio members of Pharmacy Council of India?
- 1B. Write in brief the history of DPCO. Describe in brief major changes of DPCO 2013.
- 2A. Define the following according to the Narcotic Drugs and Psychotropic Substances Act:  
i) Coca Derivative      ii) Narcotic Drugs      iii) Coca leaf  
iv) Cannabis
- 2B. What are the particulars to be submitted in the application for obtaining license to manufacture dutiable goods inside and outside bond? Outline the particulars briefly.
- 3A. Mention the functions of government analyst and name the places through which drugs may be imported into India by Air, Sea and Road.
- 3B. Mention qualifications required for Drug Inspector and add a note on duties of Drug Inspector.

(8 marks × 3 = 24 marks)

4. **Short Note Questions**

- 4A. i) Describe the recommendations made by Drugs Enquiry Committee.  
ii) Discuss in brief the ethics that a pharmacist should observe in relation to Medical Profession.  
(2+2 = 4 marks)
- 4B. i) Enlist any eight ailments, which cannot be claimed to be cured as per Drugs and Magic Remedies Act.  
ii) Write short notes on CDSCO.  
(2+2 = 4 marks)
- 4C. i) Enlist certain Acts relating to or applicable to Sales Promotion Employees.  
ii) What are the qualifications and duties of Public Analyst?  
(2+2 = 4 marks)
- 4D. Discuss in brief Copyright, Trademark, Trade Secret and Geographical Indication.

(4 marks)



5. **Short Answer Questions**

- 5A. Discuss "Working Hours" under The Shops and Establishments Act.
- 5B. Outline Institutional animals ethics committee.
- 5C. Write a note on experience or training required for Register Medical Practitioner to terminate pregnancy under Medical Termination of Pregnancy Act, 1971.
- 5D. What are the functions of Central Insecticide Board?
- 5E. What ethics should be followed while carrying out experimentation on animals under Prevention of Cruelty to Animals Act?

(2 marks×5 = 10 marks)

