Reg. No.										

MANIPAL UNIVERSITY

THIRD YEAR B. PHARM. DEGREE EXAMINATION – MAY 2011

SUBJECT: HOSPITAL AND COMMUNITY PHARMACY (PPR 301)

(CREDIT BASED SYSTEM)

Monday, May 02, 2011

Time: 10:00 – 13:00 Hrs. Max. Marks: 50

✍ **Answer all the questions.**

✍ **Long Essay:**

1. Explain the location and layout of community pharmacy. What are the schedule N requirements for opening a community pharmacy?

(4+4 = 8 marks)

2. What are the objectives of pharmacy and therapeutic committee? Explain the composition and operation of the same.

(4+4 = 8 marks)

3. Explain the protocol for reporting drug abuse or diversion in a hospital. Mention the procedure for making reports to outside agencies.

(5+3 = 8 marks)

4. Short Essay:

4A. Define hospital formulary. Explain the advantages and disadvantages of hospital formulary.

(1+3 = 4 marks)

4B. Mention the factors contributing to patient noncompliance and how to overcome the same.

(4 marks)

4C. Define CSSR. Draw and explain the layout of central sterile supply department.

(1+3 = 4 marks)

4D. Explain the code of ethics for pharmacist in relation to medical profession.

(4 marks)

5. Short Answer:

5A. Define prepackaging and mention the advantages of prepackaging.

5B. Enumerate the four applications of computers in hospital pharmacy.

5C. Define hospital pharmacy and mention two important functions of the same.

5D. Mention the requirements for patient information leaflet.

5E. What are prescription drugs? Give two examples.

(2×5 = 10 marks)

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MANIPAL UNIVERSITY

THIRD YEAR B. PHARM. DEGREE EXAMINATION – MAY 2011

SUBJECT: PHARMACEUTICAL BIOTECHNOLOGY (PBT 302)
(CREDIT BASED SYSTEM)

Wednesday, May 04, 2011

Time: 10:00 – 13:00 Hrs. Max. Marks: 50

✍ **Answer all the questions.**

✍ **Long Essays:**

1. Define Screening and differentiate between primary and secondary screening. Explain briefly the procedure to isolate an antibiotic producer from soil.

2. With reference to Recombinant DNA technology, explain the following:
Conditions required for the expression of cloned DNA in bacteria and Limitations of bacteria as host.

3. Enlist the various applications of enzymes and describe the therapeutic applications.

(8×3 = 24 marks)

4. Short Essays:

4A. Write briefly about the various applications of Monoclonal Antibodies.
4B. Briefly outline the procedure for the production of Sabin Polio Vaccine.
4C. Write short notes on Concentrated Human RBC I.P.
4D. Explain the factors affecting extraction of fermented products.

(4×4 = 16 marks)

5. Short Questions:

5A. Comment on the strain selection in the production of Citric Acid by *Aspergillus niger*.
5B. In the production of Recombinant Hepatitis B Vaccine, yeast is preferred to bacteria. Why?
5C. Mention the name of the test organism for the assay of Streptomycin and what is correction factor?
5D. Mention any two properties of Lead which facilitate its use as material of construction.
5E. Mention the importance of concentration of Filter aid in the filtration process.

(2×5 = 10 marks)

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THIRD YEAR B. PHARM. DEGREE EXAMINATION – MAY 2011

SUBJECT: PHYSICAL PHARMACEUTICS AND BIOPHARMACEUTICS (PCE 303)
(MAHE SYLLABUS)

Friday, May 06, 2011

Time: 10:00 – 13:00 Hrs. Max. Marks: 75

✍ **Answer All questions.**

1A. Define surface tension and derive an equation for surface tension by capillary rise method.

1B. Explain electrical properties of colloids.

1C. Write the principle and method to determine viscosity by Ostwald viscometer.

1D. How do you prevent hydrolytic decomposition of drugs?

1E. What is gastric emptying? Write the factors affecting gastric emptying of drugs.

1F. Explain the significance of protein drug binding.

1G. Define renal clearance and write the methods for dose adjustment in renal impairment.

(5×7 = 35 marks)

2A. Enumerate the derived properties of powder and explain a method to evaluate flow characteristic of powder. Mention any four applications of micromeritics in pharmacy.

2B. Define Fick's first law and deduce Hixson-Crowell cube root equation.

2C. Explain pharmacokinetic method for bioavailability measurement.

2D. Define emulsion. Discuss the instability in emulsion with respect to creaming, breaking and phase inversion.

(10×4 = 40 marks)

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MANIPAL UNIVERSITY

THIRD YEAR B. PHARM. DEGREE EXAMINATION – MAY 2011

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

Friday, May 06, 2011

Time: 10:00 – 13:00 Hrs. Max. Marks: 50

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

✍ **Long Essays:**

1. Discuss the different methods of preparation of colloids.

2. Discuss the various theories of Emulsification.

3. Explain protein drug binding and its significance.

(8×3 = 24 marks)

4. Short Essays:

4A. Explain Noye's Whitney equation.

4B. Draw and explain electrical double layer theory.

4C. What is gastric emptying time? List the factors affecting gastric emptying time.

4D. Define angle to repose. Describe the experimental method to determine the angle of repose of granules.

(4×4 = 16 marks)

5. Short answers:

5A. What is Pseudo first order reaction? Give an example.

5B. What are Picric acid complexes?

5C. Mention the reactions by which chemical degradation of drugs takes place.

5D. Explain the concept of clearance.

5E. What is difference between absolute and effective surface area? How can the latter be increased?

(2×5 = 10 marks)

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MANIPAL UNIVERSITY

THIRD YEAR B. PHARM. DEGREE EXAMINATION – MAY 2011

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

Monday, May 09, 2011

Time: 10:00 – 13:00 Hrs. Max. Marks: 75

✍ **Long Essays:**

1. Briefly discuss the biosynthesis and metabolism of adrenergic neurotransmitters. Classify sympathomimetic agents with examples and structure of one drug from each class. Outline the synthesis and uses of Salbutamol and Cyclopentamine.

(10 marks)

2A. Classify anti-inflammatory analgesics with examples and structure of one drug from each class. Write the synthesis of one drug each from anthranilicacid and pyrazolone derivatives.

2B. Explain the biosynthesis of prostaglandins.

(8+2 = 10 marks)

3A. Name the different types of epilepsies. Explain how antiepileptic agents are developed. Outline the synthesis of Phenytoin.

3B. Explain the significance of isomerism on biological activity of the drug.

(5+5 = 10 marks)

4A. Discuss oxidative biotransformation giving suitable examples.

4B. Write a note on types of receptors.

(7+3 = 10 marks)

5. **Short Essays:**

5A. Write the structure, specific uses and side effects if any of following compounds:

i) Diphenhydramine HCl ii) Pheniramine iii) Cyclizine
iv) Antazoline v) Cetirizine

5B. Write a note on biosynthesis, stereochemistry and biological actions of acetylcholine. Outline the synthesis of Pyridostimine and Pralidoxine.

5C. What are cholinergic blockers? Classify them with examples and uses. Outline the synthesis of any one of them.

5D. Outline the synthesis, chemical name and use of one barbiturate and one non-barbiturate sedative.

5E. Classify general anesthetics with examples and structure of one drug under each class. Write the synthesis and use of Methohexital sodium.

5F. Write about aminobenzoic acid derivatives with localanesthetics activity.

5G. What are narcotic analgesics? Give examples. Give the synthesis and use of Fentanyl Sodium and Meperidine.

(5×7 = 35 marks)

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MANIPAL UNIVERSITY

THIRD YEAR B. PHARM. DEGREE EXAMINATION – MAY 2011

SUBJECT: MEDICINAL CHEMISTRY – I (PCH 304)

(CREDIT BASED SYSTEM)

Monday, May 09, 2011

Time: 10:00 – 13:00 Hrs. Max. Marks: 50

✍ **Long Essays:**

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

(4+4 = 8 marks)

2A. What are General anesthetics? Classify with one example for each class with structure. How is Halothane synthesized?

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

(4+4 = 8 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.

(4+4 = 8 marks)

4 Short Essays:

4A. Write the mechanism of action and synthesis of carbamazepine.

(4 marks)

4B. Define antianxiety agents. Explain the SAR of Benzodiazepines as antianxiety agents.

(1+3 = 4 marks)

4C. Classify adrenergic blockers with examples. Outline the synthesis of Terbutaline.

(4 marks)

4D. Outline the synthesis of one drug form aminoalkyl ethers and piperazine type of antihistamines.

(4 marks)

5. Short Answers:

5A. Outline the synthesis of imipramine with its medicinal uses.

5B. Write the structure and uses of: i) Methaqualone ii) D-Tubocurarine.

5C. Outline the synthesis of lidocaine and Clinidium bromide.

5D. Write the structure and chemical name of Naphazoline and Mecamylamine.

5E. What are ganglionic blocking agents? Give examples.

(2×5 = 10 marks)

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MANIPAL UNIVERSITY

THIRD YEAR B. PHARM. DEGREE EXAMINATION – MAY 2011

SUBJECT: PHARMACOLOGY – I (PHA 305)
(MAHE SYLLABUS)

Wednesday, May 11, 2011

Time: 10:00 – 13:00 Hrs. Max. Marks: 75

✍ **Answer All questions.**

1. Describe dose response relationships and their implications in therapeutics. Add a note on synergism.

(6+4 = 10 marks)

2. Describe the cholinergic transmission and drugs affecting it. Add a note on the sites of release of Ach in ANS.

(7+3 = 10 marks)

3. Discuss the electrophysiology of heart and the mechanisms of actions of antiarrhythmic drugs.

(6+4 = 10 marks)

4. Describe the actions of insulin. Explain the consequences of the deficiency of insulin. Add a note on human insulin.

(6+3+1 = 10 marks)

5A. Describe the steady state levels of drugs.

5B. Describe the mechanism involved in adrenergic drugs actions.

5C. Describe briefly the mechanisms of actions of different classes of hypolipidemic drugs.

5D. Describe the mechanisms of actions and toxicities high ceiling diuretics.

5E. What are Fibrinolytics? Explain their mechanisms, uses and toxicities.

5F. Classify the drugs used in cough. Explain the mechanisms of actions of mucokinetics.

5G. Write briefly on leukotrienes and their antagonist.

(5×7 = 35 marks)

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MANIPAL UNIVERSITY

THIRD YEAR B. PHARM. DEGREE EXAMINATION – MAY 2011

SUBJECT: PHARMACOLOGY – I (PHA 305)
(CREDIT BASED SYSTEM)

Wednesday, May 11, 2011

Time: 10:00 – 13:00 Hrs. Max. Marks: 50

✍ **Answer all the questions.**

✍ **Long Essays:**

1. Classify diuretics based on their site and mechanism of action. Describe the renal and extra-renal actions of loop diuretics.

(4+4 = 8 marks)

2. Describe with specific examples how the following pathological states such as GI, Renal, Hepatic and Heart disorders, can influence drug responses.

(2+2+2+2 = 8 marks)

3. Discuss the therapeutic potentials (any eight) of adrenergic drugs with appropriate examples.

(8 marks)

4. Short Essays:

4A. Enumerate the drugs used in the treatment of bronchial asthma.

4B. Elaborate the bio-synthetic pathways of Prostaglandins.

4C. Write briefly on the lipoproteins involved in carrying the lipids.

4D. With the help of a diagram depicting the action potential in the Purkinje fibre, explain the mechanisms of action of anti-arrhythmics.

(4×4 = 16 marks)

5. Short answers:

5A. What are the Hormones of neurohypophysis (posterior pituitary)?

5B. Phase I and II of drug metabolism.

5C. Why is urine alkalinised in acidic drug poisoning?

5D. Explain any two adverse effects of ganglion blockers.

5E. Give reasons:

i) Vit-B_{12} is not given by i.v. route

ii) Nicoumalone is prescribed for life long to the person with prosthetic heart valve.

(2×5 = 10 marks)

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THIRD YEAR B. PHARM. DEGREE EXAMINATION – MAY 2011

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

Friday, May 13, 2011

Time: 10:00 – 13:00 Hrs. Max. Marks: 75

- **Answer all questions.**
- **Draw well labeled diagrams wherever necessary.**

1. **Short Essays:**

1A. Discuss the radio activity measurement in tracer technique.

1B. Describe the source, chemical constituents and uses of Bavchi and Chirata.

1C. Outline the conversion of Phenyl alanine to Prunasin and Hyocyamine to Hyoscine.

1D. Explain the method of cultivation and collection of Cardamom.

1E. Discuss any one drug you have studied under citrus bioflavonoids.

1F. Compare and contrast the morphology of Fennel and Coriander.

1G. Briefly describe the microscopical characters of Squill.

(5×7 = 35 marks)

- **Long Essays:**

2. What are Cardiac glycosides? Give their occurrence and chemical nature. Describe the source, diagnostic characters, chemical constituents and uses of Strophanthus.

3. What are Essential Oils? Discuss in detail the various methods used for the preparation of Essential oils.

4. Give a general outline of various methods of extraction of phytoconstituents.

5. Give the source, method of production, chemical nature, chemical tests and uses of Storax and Asafoetida.

(10×4 = 40 marks)