

MANIPAL UNIVERSITY

FOURTH YEAR B. PHARM. DEGREE EXAMINATION – APRIL/MAY 2012

SUBJECT: CLINICAL PHARMACY AND THERAPEUTICS (PPR 401)
(CREDIT BASED SYSTEM)

Saturday, May 12, 2012

Time: 10:00 – 13:00 Hrs.

Max. Marks: 50

✍ **Answer all questions.**

✍ **Long Essay:**

1. Explain the steps involved in patient medication counseling and selection of drug therapy.

(3+5 = 8 marks)

2. Discuss the management of chronic obstructive pulmonary diseases.

(8 marks)

3. Explain the clinical manifestations and management of iron deficiency anemia.

(3+5 = 8 marks)

4. Short Essay:

4A. Enumerate various opportunistic infections in HIV infected patients.

4B. Describe general prescribing guidelines for lactation.

4C. Explain the management and adverse effects of hyperlipidemic therapy.

4D. Explain the management of anxiety disorder.

(4×4 = 16 marks)

5. Short Answer:

5A. Mention the usual dose of two ACE inhibitors and two ARBs in the management of hypertension.

5B. Outline the management of NSAID induced ulcer.

5C. List out four differentiating features of hypothyroidism and hyperthyroidism.

5D. Outline the role of thiazolidinediones in the management of diabetes mellitus.

5E. Classify antiretroviral drugs with one example for each.

(2×5 = 10 marks)



MANIPAL UNIVERSITY

FOURTH YEAR B. PHARM. DEGREE EXAMINATION – APRIL/MAY 2012

**SUBJECT: INSTRUMENTAL AND BIOMEDICAL ANALYSIS (PQA 402)
(CREDIT BASED SYSTEM)**

Monday, April 30, 2012

Time: 10:00 – 13:00 Hrs.

Max. Marks: 50

✍ **Answer all questions. Draw neatly labeled diagram wherever necessary.**

✍ **Long Essay:**

1A. Define and classify chromatography. Discuss the separation mechanisms.

1B. Write any four applications of chromatography.

(6+2 = 8 marks)

2. Define Beer-Lambert's law and derive an equation for the same. Write its applications and limitations.

(5+3 = 8 marks)

3A. Explain the quality statements.

3B. Explain the conductometric titration for the mixture of strong acid and weak acid vs strong base and strong acid against strong base.

(4+4 = 8 marks)

4. Short Essay:

4A. i) Explain briefly molecular factors affecting fluorescence.

ii) What are the advantages of atomic absorption spectroscopy?

(2+2 = 4 marks)

4B. i) Explain the handling of solid samples in IR spectroscopy in brief.

ii) Write any four applications of flame photometry.

(2+2 = 4 marks)

4C. i) Define and classify the phenomenon of light scattering.

ii) Write a note on Bragg's equation.

(2+2 = 4 marks)

4D. i) Write the ionization techniques in mass spectroscopy.

ii) Write interferences in atomic emission spectroscopy.

(2+2 = 4 marks)

5. Short Answer:

5A. Differentiate NMR and ESR spectroscopy.

5B. What is thermal analysis? Classify the same.

5C. What is polarimetry? Name its applications.

5D. What is electrophoresis? Write any two applications of gel electrophoresis.

5E. Write the methods for detecting end point in potentiometry.

(2×5 = 10 marks)



MANIPAL UNIVERSITY

FOURTH YEAR B. PHARM. DEGREE EXAMINATION – APRIL/MAY 2012

SUBJECT: INDUSTRIAL PHARMACY (PCE 403)
(CREDIT BASED SYSTEM)

Saturday, May 05, 2012

Time: 10:00 – 13:00 Hrs.

Max. Marks: 50

✍ **Answer all the questions.**

✍ **Long Essays:**

1. Write the production, in process and final quality control tests of soft gelatin capsules.
(4+2+2 = 8 marks)
2. In parenteral preparations how contamination from various sources is prevented? Write the uses of aseptic technique.
(5+3 = 8 marks)
3. Define an aerosol. Explain the aerosol valve system with the help of a neat diagram.
(2+6 = 8 marks)

4. Short Notes:

- 4A. Write on quality control tests for parenterals.
- 4B. How tablets are tested for their quality?
- 4C. How isotonicity of a parenteral is achieved?
- 4D. What facilities required in a pharmacy for handling radiopharmaceuticals?
(4×4 = 16 marks)

5. Short Answers:

- 5A. Write the advantages of film coating of tablets.
- 5B. Write the mechanism of drug penetration in a semisolid dosage form.
- 5C. List the therapeutic uses of a radiopharmaceutical.
- 5D. Write the uses of a talcum powder.
- 5E. Write a note on non aqueous vehicles for a parenteral preparation.
(2×5 = 10 marks)



MANIPAL UNIVERSITY

FOURTH YEAR B. PHARM. DEGREE EXAMINATION – APRIL/MAY 2012

SUBJECT: MEDICINAL CHEMISTRY – II (PCH 404) (MAHE SYLLABUS)

Tuesday, May 15, 2012

Time: 10:00 – 13:00 Hrs.

Max. Marks: 75

✍ **Answer all questions.**

- 1A. What are diuretics? Mention their uses. Write the mechanism of action and synthesis of one site three diuretic.
- 1B. Classify antihypertensive agents giving the structure of one agent from each class. Give the chemical name and synthesis of clonidine.
(5+5 = 10 marks)
- 2A. What are biguanides? Outline the synthesis of one biguanide and give its mechanism as antimalarial agent.
- 2B. How are DHFR inhibitors and antimetabolites used in the management of cancer? Explain with suitable examples.
(5+5 = 10 marks)
- 3A. Explain SAR of sulphonamides as antibacterial agents. Write the method of preparation, chemical name and specific uses of sulphamethoxazole.
- 3B. Give the synthesis and uses of nitrofurantoin and diethyl carbamazine.
(5+5 = 10 marks)
- 4A. Write the mechanism of action of the following agents giving their structures.
i) Lovastatin ii) Warfarin iii) Glibenclamide
- 4B. Explain excitation – contraction coupling mechanism in cardiac muscles. Outline the synthesis of Verapamil.
(5+5 = 10 marks)
- 5A. Write the structure, chemical name and uses of the following:
i) Propylthiouracil. ii) Phenindione. iii) Clofibrate
iv) Procainamide. v) Amiodarone.
- 5B. Give the synthesis, mechanism of action and specific uses of cycloserine and chloramphenicol.
- 5C. Discuss SAR of quinolones as antibacterial agents with examples.
- 5D. What are antiseptics? Distinguish them from disinfectants. Classify them by giving one structure from each class.
- 5E. Classify anti fungal agents with examples. Outline the method of preparation of tolnaftate and metronidazole.
- 5F. Discuss the chemistry, mechanism of action and SAR of tetracyclins.
- 5G. Classify steroidal hormones with examples. Write the synthesis, chemical name and uses of ethinyl estradiol.
(5×7 = 35 marks)



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FOURTH YEAR B. PHARM. DEGREE EXAMINATION – APRIL/MAY 2012

SUBJECT: MEDICINAL CHEMISTRY – II (PCH 404)
(CREDIT BASED SYSTEM)

Tuesday, May 15, 2012

Time: 10:00 – 13:00 Hrs.

Max. Marks: 50

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

- 1A. What are the causes of angina pectoris? Explain the MOA of nitro vasodilators. Write the synthesis, chemical name and brand names of diltiazem.
- 1B. Write a brief note on mechanism of blood coagulation. Outline the synthesis of phytomenadione and bezafibrate.
- (4+4 = 8 marks)

- 2A. Classify urinary antiseptics by giving one structure from each class.
- 2B. Distinguish antiseptics from disinfectants. Add a note on phenol coefficient.
- 2C. What are trisulphas and co-trimoxazole? Under what conditions are they used?
- 2D. Classify preservatives.
- (2+2+3+1 = 8 marks)

- 3A. Write two examples each for penicillins and cephalosporins with their structures. Explain the degradation of penicillin
- 3B. Write chemistry, mechanism of action and SAR of aminoglycoside antibiotics with two structures.
- ((2+2)+(2+2) = 8 marks)

4. Short Essays:

- 4A. Write any four classes of antihypertensive agents giving the names and structures of one agent from each class. Give the MOA and synthesis of methyl dopa.
- (4 marks)
- 4B. How do you distinguish 2D QSAR from 3D QSAR? Explain the various aspects governing prodrug design.
- (3+1 = 4 marks)
- 4C. Give the chemistry, mechanism of action and specific uses of DNA alkylators as anticancer agents and outline the synthesis of cyclophosphamide.
- (2+2 = 4 marks)
- 4D. Explain the role of DHFR inhibitors in malarial therapy. How is combination therapy used in the treatment of Malaria? Outline the synthesis of chlorguanil.
- (1+1+2 = 4 marks)

5. Short Notes:

- 5A. Write the structures and specific uses of the following:
i) cortisone ii) estradiol iii) budesonide iv) clomiphene.
- 5B. Give MOA and synthesis of chlorthiazide.
- 5C. Outline the synthesis of propylthiouracil and tolbutamide.
- 5D. Write the chemistry of azoles as antifungal agents.
- 5E. Explain the SAR of Quinolones.
- (2×5 = 10 marks)



MANIPAL UNIVERSITY

FOURTH YEAR B. PHARM. DEGREE EXAMINATION – APRIL/MAY 2012

SUBJECT: PHARMACOLOGY – II (PHA 405)
(MAHE SYLLABUS)

Thursday, May 03, 2012

Time: 10:00 – 13:00 Hrs.

Max. Marks: 75

✍ **Answer all questions.**

1. List the common properties of aminoglycoside antibiotics. Explain the mechanism of action of streptomycin. Describe how bacteria develop resistance to aminoglycosides.
(4+3+3 = 10 marks)
2. Classify antitubercular drugs with examples. Describe their mechanisms of antitubercular action.
(2+8 = 10 marks)
3. Describe the signs and symptoms of poisoning with the following drugs.
 - 3A. Organophosphorus compounds.
 - 3B. Methanol.
 - 3C. Barbiturates.(4+3+3 = 10 marks)
4. Enumerate the drugs used in generalized tonic-clonic seizures. Write briefly on carbamazepine. Explain the drug interaction between valproic acid and DPH, erythromycin and carbamazepine.
(2+5+3 = 10 marks)
 - 5A. Write briefly on H. pylori eradication.
 - 5B. Write notes on selective Cox-II inhibitors.
 - 5C. Classify cognition enhancers. Write a note on piracetam.
 - 5D. Describe the different methods available to prolong the duration of action of benzylpenicillin.
 - 5E. Write a short note on cyclophosphamide.
 - 5F. Explain dose-response bioassay. How is oxytocin bioassayed?
 - 5G. Write briefly on haloperidol.(5×7 = 35 marks)



MANIPAL UNIVERSITY**FOURTH YEAR B. PHARM. DEGREE EXAMINATION – APRIL/MAY 2012****SUBJECT: PHARMACOLOGY – II (PHA 405)
(CREDIT BASED SYSTEM)**

Thursday, May 03, 2012

Time: 10:00 – 13:00 Hrs.

Max. Marks: 50

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

1. With the help of a diagram, explain the gastric acid production and secretion by parietal cells. List the drugs affecting this and briefly explain the action of any one class. (5+3 = 8 marks)
2. With the help of a diagram, explain the descending control system of pain pathway and the site of action of opioids. List the opioid receptors and their endogenous ligands. (5+3 = 8 marks)
3. Classify antimicrobial drugs based on their mechanism of action. Write briefly about the problems of irrational and prolonged use of antimicrobial therapy. (4+4 = 8 marks)

4. Short essays:

- 4A. What is cotrimoxazole? Explain its mechanism of action.
- 4B. Write briefly about the general toxicity of cytotoxic drugs.
- 4C. Explain the mechanism of action of allopurinol.
- 4D. Explain the mechanism of action of barbiturates. (4×4 = 16 marks)

5. Give reasons for the following:

- 5A. Streptomycin should not be given to myasthenic patients.
- 5B. Patients taking metronidazole experience throbbing headache, vomiting, flushing, restlessness, dizziness etc. when they drink alcohol.
- 5C. Barbiturates are contraindicated in acute intermittent porphyria.
- 5D. Cisapride should be cautiously used in patients taking anti-arrhythmics.
- 5E. Antacids reduce the efficacy of sucralfate when co-administered. (2×5 = 10 marks)



MANIPAL UNIVERSITY**FOURTH YEAR B. PHARM. DEGREE EXAMINATION – APRIL/MAY 2012****SUBJECT: PHARMACOGNOSY – III (PCO 406)
(MAHE SYLLABUS)**

Thursday, May 10, 2012

Time: 10:00 – 13:00 Hrs.

Max. Marks: 75

✍ Answer all questions.**✍ Draw diagrams or structure wherever necessary.****1. Short Essays:**

- 1A. Describe briefly nicotine as a natural pesticide.
- 1B. Discuss any four drugs used as natural sweeteners.
- 1C. Explain the significance of herbal products in India.
- 1D. Explain the principles of Siddha system of medicine.
- 1E. What are dietary supplements? Give the source, active constituents and uses of any two dietary supplements you have studied.
- 1F. Give an account of novel antimicrobial agents obtained from marine source.
- 1G. Briefly explain the WHO guidelines for the quality control of herbal finished products.

(5×7 = 35 marks)

✍ Long Essays:

2. What is immobilization? Classify and explain different methods of enzyme immobilization. Write a note on continuous process enzyme reactors.
3. What is plant tissue culture? Classify methods of plant tissue culture. Discuss the production of plant secondary metabolites from tissue culture.
4. Give the source, method of isolation and identification of Diosgenin and Gymnemic acids.
5. What are solanaceous alkaloids? Give their sources, chemistry and uses. Differentiate the drugs containing solanaceous alkaloids on the basis of their powder characters.

(10×4 = 40 marks)



MANIPAL UNIVERSITY

FOURTH YEAR B. PHARM. DEGREE EXAMINATION – APRIL/MAY 2012

**SUBJECT: PHARMACOGNOSY – III (PCO 406)
(CREDIT BASED SYSTEM)**

Thursday, May 10, 2012

Time: 10:00 – 13:00 Hrs.

Max. Marks: 50

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

✍ **Long Essays:**

1. What is Opium? Discuss its cultivation and preparation for market. Describe the chemistry of Opium and give its uses.

(8 marks)

2A. Discuss the method for the extraction of Ephedrine.

2B. Briefly describe the method and principle involved in the determination of Swelling index and Foaming index.

(4+4 = 8 marks)

3A. Briefly give an account of Streptokinase.

3B. Describe the role of Nicotine as a natural pesticide.

(4+4 = 8 marks)

4. Short Essays:

4A. Explain suspension culture with examples.

4B. Describe the method of isolation of Hesperidin.

4C. Define primary and secondary exposure. Describe allergens based on their path of entry.

4D. i) What do you understand by “Individualization in Homeopathy”?

ii) Give the sources and uses of Milk thistle and Salai guggul.

(4+4+4+(2+2) = 16 marks)

5. Short Answers:

5A. What are nutraceuticals? Give some examples.

5B. Marine sponges.

5C. CRI and CTRI.

5D. Biological source, constituents and uses of Cinchona.

5E. Structure and uses of Glycyrrhizin.

(2×5 = 10 marks)



Reg. No.

MANIPAL UNIVERSITY

FOURTH YEAR B. PHARM. DEGREE EXAMINATION – APRIL/MAY 2012

**SUBJECT: PHARMACEUTICAL MANAGEMENT (PMA 407)
(CREDIT BASED SYSTEM)**

Tuesday, May 08, 2012

Time: 10:00 – 13:00 Hrs.

Max. Marks: 50

✍ **Answer all the questions.**

✍ **Long Essay Questions:**

1. Explain the concept of management. Discuss different functions of manager.
2. Discuss different accountancy concepts in detail.
3. How would you select an ideal location to setup a Pharmaceutical unit? Discuss in detail.
(8×3 = 24 marks)

4. Short Note Questions:

- 4A. How to increase awareness about environment? Explain in detail.
- 4B. Define economics and managerial economics. What is macro economics and micro economics? Add a note on economic systems.
- 4C. Define distribution. What are various levels of distribution channels? Discuss push and pull strategy.
- 4D. Explain marketing communication and add a note on elements of promotion mix.
(4×4 = 16 marks)

5. Short Answer Questions:

- 5A. What are different roles of manager?
- 5B. Define 'Motivation' and 'Leadership'.
- 5C. Write DMAIC roadmap of six sigma.
- 5D. Define Kaizen. Enlist benefits of Kaizen.
- 5E. Enlist various pricing strategies. Explain any one.
(2×5 = 10 marks)

