Reg. No.										

MANIPAL UNIVERSITY

FOURTH YEAR B. PHARM. DEGREE EXAMINATION – MAY 2014

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

Monday, May 05, 2014

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

✍ **Answer ALL the questions.**

✍ **Long Essays:**

1A. Draw algorithm for treatment of hypertension according to JNC-VII.

1B. Discuss the role of biguanides and sulfonylureas for management of type 2 diabetes mellitus.

(3+5 = 8 marks)

2. Explain the diagnostic criteria and the management of Rheumatoid Arthritis.

(8 marks)

3A. Discuss the etiology of hypothyroidism.

3B. Explain the role of antithyroid medications for management of thyrotoxicosis.

(3+5 = 8 marks)

✍ **Short Essays:**

4A. Explain malaria parasite cycle in human.

4B. Explain the role of HAART in HIV patients.

4C. Draw algorithm of general management of epilepsy.

4D. Explain various predisposing factors for adverse drug reaction.

(4 marks×4 = 16 marks)

✍ **Short Answers:**

5A. Enlist various resources for drug information with one example for each.

5B. What are 'positive symptoms' and 'negative symptoms' of Schizophrenia?

5C. Enumerate sign and symptoms of Parkinson's disease.

5D. Give any two examples for clinically significant herbal-drug interactions.

5E. Define acute renal failure and chronic renal failure.

(2 marks×5 = 10 marks)

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FOURTH YEAR B. PHARM. DEGREE EXAMINATION – MAY 2014

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

Wednesday, May 07, 2014

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

- **Answer ALL the questions.**
- **Draw neatly labeled diagram wherever necessary.**

Long Essays:

1A. Give the advantages of HPLC as separation technique over other methods.

1B. Explain the construction of any two detectors used in gas chromatography.

(4+4 = 8 marks)

2. Explain the light sources and monochromators of double beam UV-Visible spectrometer.

(8 marks)

3A. Explain PDCA cycle in International organization for standardization.

3B. Explain the construction of different types of conductivity cells.

(4+4 = 8 marks)

Short Essays:

4A. i) Explain the derivatization in fluorimetry with one example.

ii) Explain the working of a hallow cathode lamp in atomic absorption spectroscopy.

(2+2 = 4 marks)

4B. Explain the solid sample handling techniques in IR spectrosopy.

(4 marks)

4C. i) Write the principle of nephelometry.

ii) Write any two applications of 'X' rays.

(2+2 = 4 marks)

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

ii) Write a note on types of plasma in atomic emission spectroscopy.

(2+2 = 4 marks)

Short Answers:

5A. Name the internal standard used in NMR spectroscopy. Write the reasons for using the same.

5B. What is thermal analysis? Write any two applications of the same.

5C. Write the factors affecting specific optical rotation of a solution.

5D. Explain the principle of electrophoresis.

5E. List the applications of potentiometry.

(2 marks×5 = 10 marks)

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FOURTH YEAR B. PHARM. DEGREE EXAMINATION – MAY 2014

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

Friday, May 09, 2014

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

✍ **Answer ALL the questions.**

✍ **Long Essays:**

1. Explain different stages of sugar coating in tablet dosage form with suitable diagrams.

(8 marks)

2. Explain any FOUR quality control tests for Parenterals.

(8 marks)

3. Explain the Extraction of gelatin with the help of a flow-sheet. Mention different methods of Microencapsulation and explain any ONE method.

(4+4 = 8 marks)

✍ **Short Essays:**

4A. Write a short note on propellants used in pharmaceutical aerosol systems.

4B. Explain the preparation of nail lacquers with suitable formula.

4C. Differentiate between ointment and cream.

4D. Mention different methods of preparation of Liposomes and explain any ONE method.

(4 marks×4 = 16 marks)

✍ **Short Answers:**

5A. Mention the diagnostic uses of radiopharmaceuticals with examples.

5B. Define glass. What are the different types of glass used in pharmaceutical packaging?

5C. Define "Manufacturing" in GMP.

5D. What are different approaches to increase the solubility of drugs in formulating Liquid Orals?

5E. Mention different raw materials used in the formulation of Liquid Orals with examples.

(2 marks×5 = 10 marks)

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MANIPAL UNIVERSITY

FOURTH YEAR B. PHARM. DEGREE EXAMINATION – MAY 2014

SUBJECT: MEDICINAL CHEMISTRY – II (PCH 404)

(CREDIT BASED SYSTEM)

Monday, May 12, 2014

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

✍ **Answer ALL the questions.**

✍ **Long Essays:**

1A. What are antihypertensive agents? Classify them with examples. Explain the mechanism of action and synthesis of enalapril.

1B. Classify antianginal agents giving the structure of one agent from each class. Write the method of preparation, chemical name and uses of diltiazem.

(4+4 = 8 marks)

2A. Explain the stereochemistry, SAR and mechanism of action of penicillins.

2B. Write the names, structures and uses of one agent each for the following classes of antibiotics.

i) Acid resistant penicillin ii) 3rd generation cephalosporin

iii) Amino glycoside iv) Tetracyclin

(4+4 = 8 marks)

3A. Classify antineoplastic agents giving the structure of one agent from each class.

3B. Write the structure and uses of the following:

i) Chloroquin ii) Pyrimethamine iii) Clotrimazole iv) Tolnaftate

(4+4 = 8 marks)

✍ **Short Essays:**

4A. Discuss the rationales used in the design of anti viral agents and classify them. Outline the synthesis of Amantidine.

(1+2+1 = 4 marks)

4B. Explain the chemistry of quinolones and give their mechanism of action. Outline the synthesis of any one of them.

(2+½+1½ = 4 marks)

4C. Write the structures, mechanism of action and uses of the following:

i) Pravastatin ii) Dicoumarol

(4 marks)

4D. Explain SAR of thiazide diuretics. Outline the synthesis of furosemide.

(2½+1½ = 4 marks)

✍ **Short Answers:**

5A. What are prodrugs? Give their aplications.

5B. Give the structures and uses of rifamycin and ethambutol.

5C. Write the synthesis and uses of proguanil.

5D. Write the structures, chemical names and uses of furazolidone and chlorbutol.

5E. Give the structures and uses of diethyl stilbestrol and quinidine sulphate.

(2 marks×5 = 10 marks)

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MANIPAL UNIVERSITY

FOURTH YEAR B. PHARM. DEGREE EXAMINATION – MAY 2014

SUBJECT: MEDICINAL CHEMISTRY – II (PCH 404)

(MAHE SYLLABUS)

Monday, May 12, 2014

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

✍ **Answer ALL the questions.**

✍ **Long Essay:**

1A. What are antihypertensive agents? Write the synthesis and chemical names of Nifedipine and Clonidine.

1B. What are diagnostic agents? Write the method of preparation and specific use of Diatrizoic acid.

((1+5)+4 = 10 marks)

2A. Explain SAR of Sulphonamides as antibacterial agents. Write the methods of preparation and specific uses of Sulphamethoxazole and dapsone.

2B. Classify Hypoglycemic agents with examples. Write the synthesis of tolbutamide.

((2+2+2)+4 = 10 marks)

3A. Classify antimalarial agents with examples. Explain the SAR of 4-aminoquinolines. Give the synthesis of Pyrimethamine.

3B. What are cephalosporins? Classify them with examples giving the structure of one agent from each class. Write a note on antipseudomonal cephalosporins.

(5+5 = 10 marks)

4A. Classify antiprotozoal agents with examples. Explain the mechanism of action, synthesis and uses of Metronidazole.

4B. Write the principle and applications of combinatorial chemistry.

(5+5 = 10 marks)

✍ **Short Essays:**

5A. Give the structures, chemical names and uses of the following:

i) Verapamil ii) Gemfibrozil iii) Amiodarone

iv) Procainamide v) Propylthiouracil

5B. Classify anti neoplastic agents with examples. Write a note on antimetabolites used in cancer therapy giving the structures of two of them.

5C. Give one expample each for acid-resistant, penicillinase resistant and broad spectrum pencillins with their structures. Add a note on beta lactamase inhibitors.

5D. Give a brief account on the treatment of tuberculosis. Write the method of preparation of Isoniazid.

5E. Discuss with examples the SAR of quinolones as antibacterial agents.

5F. Define diuretics with their uses. Write the mechanism of action and synthesis of Ethacrynic acid.

5G. Explain the physiological roles of Estrogens and Androgens. Give the structures of Prednisolone, Medroxy progesterone and Stanozolol.

(5 marks×7 = 35 marks)

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FOURTH YEAR B. PHARM. DEGREE EXAMINATION – MAY 2014

SUBJECT: PHARMACOLOGY – II (PHA 405)
(CREDIT BASED SYSTEM)

Wednesday, May 14, 2014

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

✍ **Answer ALL the questions and draw a labeled diagram wherever necessary.**

✍ **Long Essays:**

1. Outline the neurologic pathways involved in the pathogenesis of vomiting and indicate the possible sites of action of antiemetic drugs. Describe the mechanism of action of metoclopramide and list its two adverse effects.

(4+2+2 = 8 marks)

2. Classify antidepressants on the basis of the role of monoamines in depression. Describe the pharmacological actions of tricyclic antidepressants. Mention their adverse effects.

(3+3+2 = 8 marks)

3. List four anti-metabolites that are used in cancer chemotherapy. Explain the mechanism of action of any two of them. Enumerate the common toxicities of anticancer drugs.

(2+4+2 = 8 marks)

✍ **Short Essays:**

4A. Describe the mechanism of action of acyclovir.
4B. Explain the mechanisms of anti-epileptic action of sodium valproate.
4C. Discuss the principles of ELISA.
4D. Discuss the mechanism of action of tacrolimus.

(4 marks×4 = 16 marks)

✍ **Give Reasons:**

5A. Ketoconazole produces gynaecomastia and menstrual irregularities.
5B. Primaquine is not useful for clinical cure of malaria.
5C. Pyridoxine is sometimes administered to a patient receiving isoniazid.
5D. Morphine should not be given to a person with head injury.
5E. Oxygen administration is needed during recovery from N_2O anaesthesia.

(2 marks×5 = 10 marks)

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FOURTH YEAR B. PHARM. DEGREE EXAMINATION – MAY 2014

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

Friday, May 16, 2014

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

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

✍ **Long Essays:**

1. Describe Cinchona under a suitable pharmacognostic scheme.

(8 marks)

2. Give the biological source, method of isolation, estimation and identification of Ephedrine.

(8 marks)

3A. Discuss the various mechanisms by which Neem exhibits its pesticidal action.

3B. Discuss the various applications of immobilized enzymes.

(6+2 = 8 marks)

✍ **Short Essays:**

4A. Explain the growth stages and maintenance of plant tissue culture.

(4 marks)

4B. Define and classify herbal extracts. Add a note on theory of extraction.

(4 marks)

4C. Define an allergen. How are allergenic extracts prepared?

(4 marks)

4D. i) Discuss the Law of Similaris.

ii) Give a short account of any two plant research institutions in India.

(2+2 = 4 marks)

✍ **Short Answers:**

5A. Define and classify bitters with examples

5B. Enlist four (4) marine antimicrobial agents

5C. Herbal teas as health drinks

5D. Source and uses of Guar gum and Gurmar

5E. Proto alkaloids

(2 marks×5 = 10 marks)

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FOURTH YEAR B. PHARM. DEGREE EXAMINATION – MAY 2014

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

Monday, May 19, 2014

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

✍ **Answer ALL the questions.**

✍ **Long Essays:**

1. Enlist and explain Fayol's principles of Management.
2. What is accounting cycle? Discuss the preparation of profit and loss account with specimen format.
3. What are the principles of material management? Discuss some popularly known material handling systems in pharmaceutical industry.

(8 marks× 3 = 24 marks)

✍ **Short Essays:**

4A. Resource consumption patterns and the need for their equitable utilization is an ethical issue of environment. Explain briefly.

4B. Discuss law of supply with supply schedule and supply curve

4C. What is Product Life Cycle (PLC)? Schematically explain. What are the various ways of extending PLC?

4D. Give a detail account of "Marketing Research" in pharmaceutical industry.

(4 marks×4 = 16 marks)

✍ **Short Answers:**

5A. Define 'Leadership' and 'Motivation'. Enlist motivation theories.

5B. Write short notes on Staffing.

5C. Enlist basic concepts of TQM.

5D. Differentiate between Microeconomics and Macroeconomics.

5E. What is the difference between "Selling" and "Marketing"?

(2 marks× 5 = 10 marks)