Reg. No.										

MANIPAL UNIVERSITY

FOURTH YEAR B. PHARM. DEGREE EXAMINATION – MAY 2010

SUBJECT: CLINICAL PHARMACY AND THERAPEUTICS (PPR 401)

(MAHE SYLLABUS)

Tuesday, May 04, 2010

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

✍ **Answer ALL questions.**

1A. Discuss one compartmental pharmacokinetic model for intravenous infusion.

1B. Define and state the reasons for non-linear kinetics.

(5+5 = 10 marks)

2. Explain the Pathophysiology and explain stepwise approach in the management of chronic asthma.

(5+5 = 10 marks)

3. Describe the pathophysiology of congestive heart failure and explain the role of diuretics in the management of the same.

(5+5 = 10 marks)

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

(5+5 = 10 marks)

5A. Enumerate the drugs and adverse effects of drugs used for hyperthyroidism.

5B. Explain the management of ascitis and Hepatic encephalopathy in alcoholic liver disease.

5C. Explain the treatment and adverse effects of antihyperlipidemic therapy.

5D. Explain the resources and role of poison information center.

5E. Write two formulas to calculate creatinine clearance and explain its significance.

5F. Enumerate the drugs with their dose used in the management of anxiety disorders.

5G. Explain the management of status epilepticus.

(5×7 = 35 marks)

Reg. No.										

MANIPAL UNIVERSITY

FOURTH YEAR B. PHARM. DEGREE EXAMINATION – MAY 2010

SUBJECT: CLINICAL PHARMACY AND THERAPEUTICS (PPR 401)

(CREDIT BASED SYSTEM)

Tuesday, May 04, 2010

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

✍ **Answer ALL the questions.**

✍ **Long Essays:**

1. Enumerate various clinical pharmacy services. Explain the goals and procedure for any one.

(3+5 = 8 marks)

2. Discuss the clinical manifestations and management of myocardial infarction.

(3+5 = 8 marks)

3. Explain the management of type 2 diabetes mellitus with the help of an algorithm.

(8 marks)

✍ **Short Essays:**

4A. Explain the role of levodopa-carbidopa combination in the management of parkinsonism.

4B. Describe *H.pylori* eradication regimens.

4C. Explain the standard treatment regimen for pulmonary tuberculosis with adult dose of first line agents.

4D. Explain the clinical manifestations of rheumatoid arthritis and enumerate four DMARDs used in the management of the same.

(4×4 = 16 marks)

✍ **Short Answers:**

5A. Mention two tests to differentiate iron deficiency anaemia from other types of anemia.

5B. Define adverse drug reaction and mention four predisposing factors for the same.

5C. List out four complications of chronic renal failure.

5D. Mention four causative organism for urinary tract infection.

5E. Mention two inhaled steroids used in the management of asthma with its doses.

(2×5 = 10 marks)

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MANIPAL UNIVERSITY

FOURTH YEAR B. PHARM. DEGREE EXAMINATION – MAY 2010

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

Thursday, May 06, 2010

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

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

Long Essays:

1A. Explain the conductometric titration curve for the mixture of mineral acid with vinegar against caustic soda.
1B. Discuss the "Dead-stop" end point technique.

(4+4 = 8 marks)

2A. Write the principle and applications of ion exchange chromatography.
2B. Write a note on detectors used in HPLC.

(4+4 = 8 marks)

3A. Write the Principle and working of the photomultiplier tube detector in UV-spectrophotometer.
3B. What happens when UV radiation interacts with matter?

(4+4 = 8 marks)

Short Essays:

4A. What are fundamental vibrations in IR Spectroscopy?
4B. Write the biological applications of circular dichroism and optical rotatory dispersion.

(2+2 = 4 marks)

5. Define the term Quality Assurance, Validation, ICH and Quality Control.

(4 marks)

6A. List the Differences between NMR and ESR.
6B. Define and classify automization.

(2+2 = 4 marks)

7. How thiamine is estimated fluorimetrically? Explain with the help of reactions.

(4 marks)

Short answers:

8A. Classify electrophoresis methods.
8B. Define and classify the phenomenon of scattering of light
8C. Write the schematic diagram of polarimeter and inductively coupled plasma source.
8D. Mention the types of mass spectrometer and differential scanning calorimetry.
8E. Explain the function of hallow cathode tube.

(2×5 = 10 marks)

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MANIPAL UNIVERSITY

FOURTH YEAR B. PHARM. DEGREE EXAMINATION – MAY 2010

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

Saturday, May 08, 2010

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

✍ **Answer ALL the questions.**

✍ **Long Essays:**

1A. Explain class I methods of Tonicity adjustment in Pharmaceutical dosage form.

1B. Explain the manufacturing of soft gelatin capsule with neat diagram.

1C. Mention the different types of Transdermal drug delivery systems and explain any two.

(8×3 = 24 marks)

✍ **Short Essays:**

2A. Define the following terms:

i) Lipstick

ii) Mascara

iii) Nail Lacquers

iv) Rouge

2B. Write short note on propellant used in aerosol system.

2C. What is Bloom strength in gelatin and how it is measured? Mention its importance.

2D. How the aeration in semisolid preparation is prevented?

(4×4 = 16 marks)

✍ **Short Answers:**

3A. Name any four cosolvents used in Liquid Orals and mention their role in the formulation.

3B. Sterile products should be free from pyrogens, but this characteristic is not as critical for ophthalmics. Why?

3C. Mention the advantages of 'Polypropylene' as plastic resin in the maufacture of plastic containers.

3D. Mention the requirements of Schedule M Part I (Any 4).

3E. What are the labeling requirements of Radiopharmaceutical injections?

(2×5 = 10 marks)

Reg. No.										

MANIPAL UNIVERSITY

FOURTH YEAR B. PHARM. DEGREE EXAMINATION – MAY 2010

SUBJECT: INDUSTRIAL PHARMACY (PCE 403)

(MAHE SYLLABUS)

Saturday, May 08, 2010

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

✍ **Answer ALL the questions.**

1. Short answer questions:

1A. Explain the coacervation-phase separation technique of microencapsulation.

1B. Describe the mechanisms of drug permeation through skin.

1C. Discuss the filling methods of liquid oral preparations.

1D. What are the therapeutic uses of radiopharmaceuticals?

1E. Define and explain the importance of GMP in pharmaceutical industry.

1F. Explain one method of preparing liposomes.

1G. Explain the types of glass used for fabrication of containers for pharmaceutical preparations.

(5×7 = 35 marks)

2. Essay questions:

2A. Discuss the quality control tests performed on injections.

2B. Explain the steps involved in the sugar coating of tablets.

2C. Describe the manufacturing of cold cream and vanishing cream with suitable formula.

2D. Define pharmaceutical aerosols. Discuss the components of an aerosol system.

(10×4 = 40 marks)

Reg. No.										

MANIPAL UNIVERSITY

FOURTH YEAR B. PHARM. DEGREE EXAMINATION – MAY 2010

SUBJECT: MEDICINAL CHEMISTRY – II (PCH 404)

(MAHE SYLLABUS)

Tuesday, May 11, 2010

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

✍ **Answer ALL the questions.**

✍ **Long Essays:**

1. Write the structures, brand names and mechanism of action of the following:
   i) Clonidine
   ii) Lisinopril
   iii) Bezafibrate
   iv) Chlorpropamide
   v) Warfarin

((½+¼+¼+1)×5 = 10 marks)

2A. Outline the method of preparation of phytomenadione and fluorescein with their uses.

2B. Explain the structural requirements of thyroxine for its hormonal activity. Write the mechanism of action and synthesis of any one calcium channel blockers.

((3+2)+(2+1+2) = 10 marks)

3. Classify antifungal drugs with suitable examples. Explain the medicinal use, mode of action of drugs belonging to imidazole as antifungal agents. Outline the synthesis of Tolnaftate.

(2+4+4 = 10 marks)

4A. Classify the following penicillins with suitable examples:
   i) orally active
   ii) penicillinase resisitant
   iii) extended spectrum penicillins with two structures each.

4B. Explain the synthesis of penicillin G.

((2×3)+4 = 10 marks)

✍ **Short Essays:**

5A. Classify antiarrhythmic agents giving the structures of one agent from each class. Write the mechanism of action and synthesis of amiodarone.

(2+1+2 = 5 marks)

5B. Explain the synthesis and medicinal uses of chloramphenicol.

(5 marks)

5C. What are loop diuretics? Explain the mechanism of action and the synthesis of Furosemide.

(5 marks)

5D. Explain the SAR of Tetracyclines.

(5 marks)

5E. Discuss antimalarial biguanides with examples.

(5 marks)

5F. Give the synthesis of sulfisoxazole and sulpha methoxazole.

(5 marks)

5G. Define antineoplastic agents. Outline the chemistry and mode of action of lomustine and 6-mercaptopurine.

(5 marks)

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MANIPAL UNIVERSITY

FOURTH YEAR B. PHARM. DEGREE EXAMINATION – MAY 2010

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

Tuesday, May 11, 2010

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

✍ **Answer ALL the questions.**

✍ **Long essays:**

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

1B. Why should hypertension be treated? Classify antihypertensive agents with examples. Outline the synthesis of Enalapril and Methyldopa.

(4+4 = 8 marks)

2A. What are sulpha drugs? Classify sulphonamides with at least one structure and uses from each category. Outline the synthesis of Dapsone.

2B Write the structure, mechanism of action and specific uses of Amoxicillin, Chloramphenicol and Cycloserine.

((2½+1½)+4 = 8 marks)

3A. Define the following and give one structure for each class:

i) Anthelmintics
ii) Antiscabies
iii) Antipedicular agents
iv) Antiviral agents

3B. Enumerate the female contraceptives with one example.

3C. Give the synthesis of Carmustine.

(4+2+2 = 8 marks)

✍ **Short essays:**

4A. Give the structure and IUPAC name of Primaquine. Discuss the SAR of 8-aminoquinolines.

(1+3 = 4 marks)

4B. Write the structure and mechanism of action of the following.

i) Lovastatin
ii) Benzafibrate
iii) Tolbutamide
iv) Propylthiouracil

(4 marks)

4C. Explain SAR of Thiazide diuretics. Write the mechanism of action and synthesis of Ethacrynic acid.

(4 marks)

4D. What are antiprotozoal agents? Classify antiamoebic drugs with one structure from each class. Outline the synthesis of Metronidazole.

(4 marks)

✍ **Short answers:**

5A. Define anticoagulants with their uses. Write the structure of Warfarin sodium and Dipyridamole.

5B. Give the structure and uses of any one antimetabolite.

5C. Give an account on dihydrofolate reductase inhibitors.

5D. Give the structures of Cortisone and Testosterone.

5E. What are antisense drugs? Give their applications.

(2×5 = 10 marks)

Reg. No.										

MANIPAL UNIVERSITY

FOURTH YEAR B. PHARM. DEGREE EXAMINATION – MAY 2010

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

Thursday, May 13, 2010

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

Answer ALL the questions.

1. Classify the drugs used in the treatment of malignancies. Write a brief note on vinca alkaloids.

(6+4 = 10 marks)

2. Explain the principles and indications for bioassays. Illustrate different types of bioassays with examples.

(5+5 = 10 marks)

3. Define local anesthetics. Classify them with examples. Discuss the mechanism of action of local anesthetics.

(1+5+4 = 10 marks)

4. What is L Dopa? Discuss briefly its pharmacokinetics and adverse drug reactions. Explain the benefits and disadvantages of its combination with carbidopa.

(1+6+3 = 10 marks)

5A. Classify Cephalosporins with examples.

5B. Write briefly on adverse drug reactions of erythromycin.

5C. Write briefly on vancomycin.

5D. Write a brief note on drug therapy in multidrug resistant tuberculosis.

5E. Explain the term universal antidote and its limitations.

5F. Write a short note on antiepileptics.

5G. Write a short note on ulcer protective agents.

(5×7 = 35 marks)

Reg. No.										

MANIPAL UNIVERSITY

FOURTH YEAR B. PHARM. DEGREE EXAMINATION – MAY 2010

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

Thursday, May 13, 2010

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

✍ **Answer ALL the questions.**

✍ **Long essays:**

1. Classify antidepressant drugs. Explain the mechanisms of their antidepressant action. List the adverse drug reactions for tricyclic antidepressants.

(5+3 = 8 marks)

2. Explain the mechanisms of bacterial protein synthesis. Discuss how drugs interfere with these processes.

(5+3 = 8 marks)

3. Explain the mechanisms of action of antimetabolites as anticancer agents. List the general toxicities of anti-neoplastic agents.

(6+2 = 8 marks)

✍ **Short essay:**

4A. How is levodopa useful in Parkinsonism? Write the advantages of combining levodopa with carbidopa.

4B. Explain the importance of preanaesthetic medication with different examples.

4C. Explain different methods of bioassays with a brief note on their advantages and disadvantages.

4D. Define prokinetics. Explain the mechanism of action of prokinetics.

(4×4 = 16 marks)

✍ **Short answers:**

5A. Explain the mechanism of loperamide.

5B. Explain any two clinical uses of tetracyclines.

5C. Explain the difference between broad spectrum and narrow spectrum antibiotics. Give examples.

5D. How does desferioxamine Act? When is it used?

5E. Why is chloroquine employed in only in hepatic amoebiasis?

(2×5 = 10 marks)

Reg. No.										

MANIPAL UNIVERSITY

FOURTH YEAR B. PHARM. DEGREE EXAMINATION – MAY 2010

SUBJECT: PHARMACOGNOSY – III (PCO 406)
(MAHE SYLLABUS)

Tuesday, May 18, 2010

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

✍ **Answer ALL the questions.**

✍ **Draw neat labeled diagrams wherever necessary.**

✍ **Short Essays:**

1A. List out the important Indian herbal industries with their products for health care.

1B. Define and give the preparation of tinctures with suitable examples.

1C. Give the features of an ideal pesticide. Discuss the role of Neem as:
   a) A growth regulator
   b) A repellant.

1D. Explain suspension culture with examples.

1E. a) What do you understand by "Individualization in Homeopathy"?
   b) Give the sources and uses of Milk thistle and Salai guggul.

1F. Describe the method of isolation of Hesperidin.

1G. Briefly give an account of Streptokinase.

(5×7 = 35 marks)

✍ **Long Essays**

2. Give the source, method of isolation and uses of:
   a) Quinine
   b) Sennosides

(10 marks)

3A. Briefly describe the method and principle involved in the determination of Swelling index and Foaming index.

3B. Elaborate on Marine sponges.

(5+5 = 10 marks)

4. Describe Pepper under a suitable pharmacognostic scheme.

(10 marks)

5A. Define "primary exposure" and "secondary exposure". Describe the method of sensitivity testing and treatment of allergy.

5B. What are plant bitters? Classify plant bitters with suitable examples.

(5+5 = 10 marks)

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MANIPAL UNIVERSITY

FOURTH YEAR B. PHARM. DEGREE EXAMINATION – MAY 2010

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

Tuesday, May 18, 2010

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

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

- **Long Essays**:

1A. Discuss Pyrethrins and explain their role as pesticides.
1B. Write an essay on Papain.

(4+4 = 8 marks)

2A. What are plant exudates? Give the preparation of any three such plant exudates.
2B. Give the biological source and uses of Hesperidin. Describe the method of isolation of Hesperidin.

(4+4 = 8 marks)

3. Describe Pepper under a suitable pharmacognostic scheme.

(8 marks)

- **Short Essays**:

4A. What are Saptadhatus? Mention the function of each Saptadhatu.
4B. Briefly discuss the alkaloids of *Castanospermum australe* and its uses.

(2+2 = 4 marks)

5. Describe the method used for the extraction of Sennosides.

(4 marks)

6. Give the classification of Allergens based on their path of entry into body.

(4 marks)

7. Give a brief account of the applications of plant tissue culture.

(4 marks)

- **Short Answers**:

8A Biological source, active constituent and uses of Kurchi.
8B. NBRI and CDRI.
8C. Differentiate between sacchariferous and non-sacchariferous sweetening agents.
8D. Marine sponges.
8E. PUFA.

(2×5 = 10 marks)

Reg. No.										

MANIPAL UNIVERSITY

FOURTH YEAR B. PHARM. DEGREE EXAMINATION – MAY 2010

SUBJECT: PHARMACEUTICAL MANAGEMENT (PMA 407)
(MAHE SYLLABUS)

Saturday, May 15, 2010

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

Answer ALL the questions.

1A. Enlist managerial roles identified by Mintzberg.

1B. Distinguish between ledger and journal.

1C. Write a note on Differentiated Marketing.

1D. What are the criteria for selecting a medical representative?

1E. What does a training program by a company generally involve after selecting medical representative?

1F. Explain in brief procedures laid down for exporting and importing goods.

1G. Define Economics and enlist Economic and Non Economic activities.

(5×7 = 35 marks)

2A. Enlist the theories on leadership behavior and styles. Explain managerial grid theory.

2B. Enlist various contents of a balance sheet and describe current assets.

2C. Discuss the various members of pharmaceutical distribution channel and explain the functions of a super distributor.

2D. Explain Inventory management with the help of various inventory control models.

(10×4 = 40 marks)

Reg. No.										

MANIPAL UNIVERSITY

FOURTH YEAR B. PHARM. DEGREE EXAMINATION – MAY 2010

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

Saturday, May 15, 2010

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

✍ **Answer ALL the questions.**

✍ **Long Essay Questions:**

1. Define Leadership. Enlist the Leadership theories and Styles. Summarize Trait and Behavioral theories.

(8 marks)

2A. Write a detail note on Site Selection for a pharmaceutical unit.

2B. How air pollution is a threat to environment? Explain with an example.

(6+2 = 8 marks)

3. Enlist the four P's of Marketing. Discuss in detail Promotion Mix elements.

(8 marks)

✍ **Short Note Questions:**

4A. Discuss in brief Decision Making Models.

4B. What is meant by demand? Draw a demand curve and demand schedule. Enlist difference between Macro and Micro Economics.

4C. Write a note on Balance Sheet and describe Current Assets.

4D. Define Marketing Research. Discuss briefly type of Market Research.

(4×4 = 16 marks)

✍ **Short Answer Questions:**

5A. Give a brief account of characteristic features of ISO series.

5B. Write Deming's Principles of TQM.

5C. Enumerate the Institutions of Environment in India? Describe briefly the objectives of these institutions.

5D. Enlist the main advantages of double entry bookkeeping system.

5E. What are the functions of Trial balance?

(2×5 = 10 marks)