MANIPAL UNIVERSITY

SECOND YEAR B. PHARM. DEGREE EXAMINATION – MAY 2010

SUBJECT: PATHOPHYSIOLOGY (PTH 201)
(CREDIT BASED SYSTEM)

Tuesday, May 04, 2010

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

✍   **Answer ALL the questions.**

✍   **Long Essays:**

1A.   Define inflammation. Enumerate the advantages and disadvantages of inflammation.

1B.   Describe the late stage of acute inflammation.

(4+4 = 8 marks)

2A.   Define and classify autoimmune diseases with suitable examples.

2B.   Explain the mechanism of autoimmune diseases.

(2+6 = 8 marks)

3A.   Classify epilepsy based on clinical presentation.

3B.   Explain the pathogenesis of epilepsy.

(4+4 = 8 marks)

✍   **Short Essays:**

4A.   Explain the pathogenesis and clinical symptoms of myocardial infarction.

4B.   Define anaemia. Enumerate the clinical symptoms and hematological tests for iron efficiency anaemia.

4C.   Differentiate between benign and malignant tumors.

4D.   Explain the pathogenesis of HIV infection and graphically represent opportunistic infections.

(4×4 = 16 marks)

✍   **Short Answers:**

5A.   Explain caseous necrosis.

5B.   Enlist the symptoms of hypothyroidism.

5C.   Enumerate four chemical mediators of acute inflammation.

5D.   Enumerate four etiological factors for chronic liver disease.

5E.   Differentiate apoptosis and necrosis.

(2×5 = 10 marks)

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MANIPAL UNIVERSITY

SECOND YEAR B. PHARM. DEGREE EXAMINATION – MAY 2010

SUBJECT: PHARMACEUTICAL MICROBIOLOGY (PBT 202)
(CREDIT BASED SYSTEM)

Thursday, May 06, 2010

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

✍ **Answer ALL the questions.**

✍ **Put question numbers properly.**

✍ **Long Essays.**

1. Describe the nutritional requirements of bacteria and mention the types of culture media.

(8 marks)

2. Discuss sterilization by Gamma radiations as under:
   Source, sterilization dose, mechanism of action and applications.

(8 marks)

3. Explain the principle, procedure and applications of ELISA.

(8 marks)

✍ **Short Essays.**

4A. Enlist the different methods of cultivation of viruses and give a short note on cultivation of viruses using tissue culture technique.

4B. Explain the role of Phenol as disinfectant with respect to mechanism of action, specific example and applications.

4C. Explain the various modes of transmission of infectious diseases.

4D. Write a short note on the pathogenesis of gas gangrene.

(4×4 = 16 marks)

✍ **Short Answer.**

5A. Write about the Whittaker's five kingdom concept.

5B. Define mutation and enlist mutagens.

5C. Why is Hour glass tube preferred to Witness tube as sterilisation indicator?

5D. Mention any four differences between R.W.C and C.M.C.

5E. Enlist the laboratory tests for detection of coliform group of bacteria in water.

(2×5 = 10 marks)

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SECOND YEAR B. PHARM. DEGREE EXAMINATION – MAY 2010

SUBJECT: PHARMACEUTICAL TECHNOLOGY (PCE 203)
(CREDIT BASED SYSTEM)

Saturday, May 08, 2010

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

✍ **Answer ALL the questions.**

✍ **Draw diagrams wherever necessary.**

✍ **Long Essays:**

1. Define suppositories and displacement value. Discuss the various types of bases with their characters used in the preparation of suppositories.

$$(2+6 = 8 \text{ marks})$$

2. Write the principle construction and working of steam distillation. Write two applications each for steam distillation and molecular distillation.

$$(8 \text{ marks})$$

3. Classify monophasic liquid dosage forms. Describe the various types of vehicles used in formulation of monophasic liquid dosage forms.

$$(8 \text{ marks})$$

✍ **Short Essays:**

4A. Briefly describe the working of a double cone classifier and cyclone separator.

4B. Explain Mier's theory of crystallisation with limitations.

4C. List the equipments for liquid mixing and write a note on the flow patterns in mixing of liquids.

4D. Briefly discuss the three modes of heat transfer with suitable examples.

$$(4×4 = 16 \text{ marks})$$

✍ **Short Answers:**

5A. Calculate the real strength of 20°O/P and 30°O/P.

5B. Draw a typical drying rate curve and label the parts.

5C. Write a note on plaster of paris bandage.

5D. Define Incompatibility. Enlist the different types of physical incompatibility.

5E. Define percolation. Write the steps involved in simple percolation.

$$(2×5 = 10 \text{ marks})$$

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MANIPAL UNIVERSITY

SECOND YEAR B. PHARM. DEGREE EXAMINATION – MAY 2010

SUBJECT: PHARMACEUTICAL CHEMISTRY (PCH 204)
(MAHE SYLLABUS)

Tuesday, May 11, 2010

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

✍ **Answer ALL the questions.**

✍ **Short Answers:**

1. Describe the methods of synthesis of 1, 3, 7 trimethyl xanthine.

(5 marks)

2. Discuss briefly the chemistry of quinoline and isoquinoline.

(5 marks)

3. Explain the chemistry of α - terpeniol.

(5 marks)

4. Briefly explain the chemistry of digitoxin.

(5 marks)

5A. What is Fischer-Kiliani synthesis? Explain.
5B. Name any four derivatives of cellulose and mention their pharmaceutical uses.

(3+2 = 5 marks)

6A. What is rancidity? Mention its importance.
6B. What are nucleotides and nucleosides?

(2+3 = 5 marks)

7. Write the general reactions of amino acids and proteins.

(5 marks)

✍ **Essays:**

8A. Define heterocyclic compounds. Write suitable examples.
8B. Compare the aromatic character of furan, pyrrole and thiophen.
8C. Why is pyridine more basic than pyrrole?

(2+4+4 = 10 marks)

9A. What are alkaloids? Write the general classification of alkaloids.
9B.   Explain briefly the chemistry of vinca alkaloids.

((2+2)+6 = 10 marks)

10A. Explain the stereochemistry of E_1 and E_2 reactions giving suitable examples.
10B. Explain stereo selective reactions and stereospecific reactions with suitable examples.

(5+5 = 10 marks)

11A. Write briefly the chemistry of caffeine and give the structure of lignans.
11B. Explain the chemistry and uses of Taxol and its derivatives.

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

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SECOND YEAR B. PHARM. DEGREE EXAMINATION – MAY 2010

SUBJECT: PHARMACEUTICAL CHEMISTRY (PCH 204)
(CREDIT BASED SYSTEM)

Tuesday, May 11, 2010

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

✍ **Answer ALL the questions.**

✍ **Long Essays:**

1A. Discuss the chemistry of Coumarin and Artemisinin.

1B. Explain any four reactions of monosaccharides.

$(4+4 = 8 \text{ marks})$.

2A. Explain the chemistry of cardiac glycosides.

2B. Discuss the methods to determine the functional nature of nitrogen in alkaloids.

$(4+4 = 8 \text{ marks})$

3A. Define atropisomerism with one example.

3B. Discuss briefly the stereochemistry of biphenyl compounds.

$(2+6 = 8 \text{ marks})$

✍ **Short Essays:**

4A. Explain the chemistry of carotenoids and give its biological importance.

4B. Discuss the geometry of peptide linkage.

4C. Prove that glucose has a six membered ring structure.

4D. Explain the nucleophilic substitution reactions of pyridine with one example.

$(4×4 = 16 \text{ marks})$

✍ **Short Answers:**

5A. Give the structure of different diazines.

5B. Why is phenyloxazole are nitrated preferentially in the phenyl ring?

5C. How will you prove the presence of piperidine ring system in atropine?

5D. Define acid value and iodine value.

5E. Give the structure of Podophyllotoxin.

$(2×5 = 10 \text{ marks})$

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MANIPAL UNIVERSITY

SECOND YEAR B. PHARM. DEGREE EXAMINATION – MAY 2010

SUBJECT: PHARMACEUTICAL ANALYSIS (PQA 205)
(MAHE SYLLABUS)

Thursday, May 13, 2010

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

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

✍ **Short Answers:**

1. What is the primary standard? Give the ideal requirements for the same.

                                                                         (5 marks)

2. What is law of mass action? Derive an expression for Law of Mass Action taking into account 'activity' of the reacting substances.

                                                                         (5 marks)

3. Explain the advantages and disadvantages of organic precipitants in gravimetric analysis.

                                                                         (5 marks)

4A. What are Iodimetry titrations? Explain with an example.
4B. What are Redox indicators? Give examples.

                                                                 (3+2 = 5 marks)

5. What is diazotization titration? Explain with suitable example.

                                                                         (5 marks)

6. Explain the principle of non-aqueous titration of weak bases with an example.

                                                                         (5 marks)

7. Define the term calibration. Illustrate the calibration of 20 ml bulb pipette.

                                                                         (5 marks)

✍ **Essays:**

8. Explain the theories of acids and bases with two examples each. Give their merits and demerits.

                                                                        (10 marks)

9. With the help of suitable example, explain in detail redox titration curve and give its significance.

                                                                        (10 marks)

10. Explain about co-precipitation, its types and causes for co-precipitation.

                                                                        (10 marks)

11A. Explain the principle involved in the estimation of sodium chloride by Volhards's method.
11B. Derive an expression for pM and give its importance in complexometry.

                                                                 (5+5 = 10 marks)

MANIPAL UNIVERSITY

SECOND YEAR B. PHARM. DEGREE EXAMINATION – MAY 2010

SUBJECT: PHARMACEUTICAL ANALYSIS (PQA 205)
(CREDIT BASED SYSTEM)

Thursday, May 13, 2010

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

✍ **Answer ALL the questions.**

✍ **Long Essay:**

1. Explain the factors affecting the completeness of precipitation? How is it checked?

(8 marks)

2. Explain the indicator errors and their types in neutralization titration.

(8 marks)

3A. Explain principle involved in potassium iodate titrations with examples.
3B. Explain with examples the side reactions in redox titration.

(4+4 = 8 marks)

✍ **Short essay:**

4A. Explain the preparation and standardization of 0.1M potassium methoxide and give one example of drug estimated by titration with potassium methoxide solution in non-aqueous titrimetry.
4B. Explain in detail about replacement complexometric titration with an example.
4C. What is argentometric titration? Describe Volhard's method in details.
4D. Assay results of content of Paracetamol in given 500 mg Crocin tablets are as follows. As an analyst, justify which method you will prefer for routine analysis in your lab.

Trial No.	Method A	Method B
1	500.00 mg	498.80 mg
2	493.80 mg	501.90 mg
3	490.00 mg	504.00 mg
4	505.80 mg	489.80 mg
5	488.10 mg	498.90 mg
6	504.10 mg	500.10 mg

(4×4 = 16 marks)

✍ **Short answers:**

5A. Explain in brief general principle for diazotisation titration with one example.
5B. Explain Lewis theory of acids and bases and describe its merits and demerits.
5C. Name any four washing solutions for washing of precipitate in Gravimetry.
5D. Write minimum two conditions for iodimetry.
5E. Define the terms:
    i)   % w/v
    ii)   % v/v.

(2×5 = 10 marks)

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MANIPAL UNIVERSITY

SECOND YEAR B. PHARM. DEGREE EXAMINATION – MAY 2010

SUBJECT: PHARMACOGNOSY - I (PCO 206)
(CREDIT BASED SYSTEM)

Saturday, May 15, 2010

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

✍   **Answer ALL the questions.**

✍   **Draw diagrams/ structures wherever necessary.**

1.   **Long Essays.**

1A.   Define and classify Crude drugs with suitable examples. Add a descriptive note on Chemical and Pharmacological classification.

1B.   What are carbohydrates? Classify them with examples. Discuss general methods of estimation of carbohydrates add a note on chemical tests for carbohydrate.

1C.   Explain factors affecting cultivation of crude drugs.

$(8\times3 = 24$ marks)

2.   **Short Essays.**

2A.   Define Tannins. Write a note on Nutgalls.

2B.   Write the source, morphology and powder microscopy of ginger.

2C.   Write a detailed note on surgical dressings with special reference to viscose rayon.

2D.   Write the properties and qualitative tests for proteins.

$(4\times4 = 16$ marks)

3.   **Short Answers.**

3A.   Castor oil is steamed at $80^{\circ}C$; comment!

3B.   Source active constituent and uses of Isapgoal

3C.   Classify trichomes with examples

3D.   Powder characteristics of Datura

3E.   Virgin oil

$(2\times5 = 10$ marks)