

MANIPAL UNIVERSITY**SECOND YEAR B. PHARM. DEGREE EXAMINATION – MAY 2011****SUBJECT: PATHOPHYSIOLOGY (PTH 201)
(CREDIT BASED SYSTEM)**

Tuesday, May 03, 2011

Time: 10:00 – 13:00 Hrs.

Max. Marks: 50

✍ **Answer all questions.**

✍ **Long Essays:**

- 1A. Enumerate the various etiological factors for ischemic cell injury.
- 1B. Explain the general mechanism by which ischemic cell injury occur.
- 1C. Explain the cellular and tissue changes that occur in ischemic injury.

(2+2+4 = 8 marks)

- 2A. Define inflammation. Enumerate the advantages and disadvantages of inflammation.
- 2B. Describe the macroscopical changes that occur during chronic inflammation.

(3+3+2 = 8 marks)

- 3A. Classify acute renal failure based on etiology and enumerate its clinical symptoms.
- 3B. Explain the complications of chronic renal failure.

(5+3 = 8 marks)

4. Short Essays:

- 4A. Explain the mechanism of autoimmune diseases.
- 4B. Explain the pathogenesis of parkinsonism and enumerate four clinical symptoms.
- 4C. Explain the clinical features of anemia.
- 4D. Explain the etiopathogenesis of acute renal failure.

(4×4 = 16 marks)

5. Short Answers:

- 5A. Graphically explain the opportunistic infections of AIDS.
- 5B. Enumerate four genes responsible for cancer.
- 5C. Draw two regulatory mechanisms of blood pressure.
- 5D. Differentiate bronchitis and emphysema.
- 5E. Enumerate four etiological factors for chronic liver disease.

(2×5 = 10 marks)



MANIPAL UNIVERSITY

SECOND YEAR B. PHARM. DEGREE EXAMINATION – MAY 2011

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

Thursday, May 05, 2011

Time: 10:00 – 13:00 Hrs.

Max. Marks: 50

✍ Answer ALL the questions. Put question numbers properly with margin.

✍ Long Essay:

1. With the help of a neat labeled diagram, discuss the structure of a typical bacterial cell.
2. Describe the properties of saturated steam through phase diagram and explain how saturated steam acts as an effective sterilizing agent.
3. Explain the structure, classification and functions of Immunoglobulins.

(8×3 = 24 marks)

4. Short Essay:

- 4A. Write the general characteristics of rickettsial organisms and mention the diseases caused by them.
- 4B. Enlist the various factors affecting the course of disinfection process and explain the effect of presence of organic matter.
- 4C. Explain with examples the phenomenon of microbial adherence.
- 4D. Write the causative agent, mode of transmission, important symptoms, prevention and treatment of AIDS.

(4×4 = 16 marks)

5. Short Answer:

- 5A. Write any four differences between prokaryotes and eukaryotes.
- 5B. What is the Gram's reaction of protoplasts of Gram positive bacteria? Justify your answer.
- 5C. Ultraviolet radiation at 265 nm only has 100 % antibacterial activity, but not either at shorter wavelength or longer wavelength. Why?
- 5D. Enlist the merits of Chick Martin coefficient.
- 5E. Differentiate between *Escherichia coli* and *Enterobacter aerogenes* on the basis of IMViC reaction.

(2×5 = 10 marks)



MANIPAL UNIVERSITY

SECOND YEAR B. PHARM. DEGREE EXAMINATION – MAY 2011

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

Saturday, May 07, 2011

Time: 10:00 – 13:00 Hrs.

Max. Marks: 50

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

✍ **Long Essays:**

1. Define suspensions. Explain the formulation and stability of suspensions. (1+4+3 = 8 marks)

2. Explain the principle construction and working of steam distillation. (3+2+3 = 8 marks)

3. State Bernoulli's theorem with its applications. What are the various energy losses experienced by fluids while flowing through a pipe? (2+6 = 8 marks)

4. Short Essays:

- 4A. Classify powders. What are simple and compound powders?
- 4B. Explain four evaluation tests for suppositories.
- 4C. Briefly discuss the types of physical incompatibilities with suitable examples.
- 4D. What are the advantages and disadvantages of multiple effect evaporators? Compare it with single effect evaporator. (4×4 = 16 marks)

5. Short Answers:

- 5A. What are the different parts of a prescription?
- 5B. What type of dryer would you recommend for the following? Give reason.
 - i) Small batches of sticky material
 - ii) Suspension of a vaccine
- 5C. How caking of crystals can be prevented?
- 5D. Differentiate boilable and non-boilable catgut.
- 5E. What are Galenicals? Write the basic difference between maceration and percolation. (2×5 = 10 marks)



MANIPAL UNIVERSITY

SECOND YEAR B. PHARM. DEGREE EXAMINATION – MAY 2011

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

Tuesday, May 10, 2011

Time: 10:00 – 13:00 Hrs.

Max. Marks: 75

✍ **Long Essays:**

1. Discuss the stereochemistry of disubstituted cyclohexane. (10 marks)
- 2A. Give the reactions involved in Gabriel synthesis and strecker synthesis of alpha-aminoacids.
2B. Explain any two methods of preparation of pyridine. (6+4 = 10 marks)
3. Discuss the open chain structure of glucose. What are its demerits? (10 marks)
- 4A. Explain the chemistry and uses of Vinca alkaloids.
4B. What are lignans? Give the structure and importance of any two lignans. (6+4 = 10 marks)
5. **Short Essays:**
- 5A. Explain skraup synthesis of quinoline. Give the structure of any one quinoline derivative having antimalarial activity. (5 marks)
- 5B. i) Thiophene is more aromatic than pyrrole. Explain with reasons.
ii) Give the structure and medicinal use of isoniazid. (3+2 = 5 marks)
- 5C. Explain briefly the chemistry of alpha terpineol. (5 marks)
- 5D. Discuss the geometry of peptide linkage. (5 marks)
- 5E. How will you convert a hexose into pentose? Explain with equations. (5 marks)
- 5F. What are drying, semi-drying and non-drying oils? Give examples. (5 marks)
- 5G. Describe the structure of DNA. (5 marks)



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SECOND YEAR B. PHARM. DEGREE EXAMINATION – MAY 2011

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

Tuesday, May 10, 2011

Time: 10:00 – 13:00 Hrs.

Max. Marks: 50

☞ **Long Essays:**

- 1A. How will you convert a pentose sugar into hexose sugar?
1B. Prove that, glucose has a six membered ring structure. (4+4 = 8 marks)
- 2A. Define and classify Terpenoids.
2B. Explain the structure elucidation of alpha terpeniol. (2+6 = 8 marks)
- 3A. Define atropisomerism with one example.
3B. Discuss briefly the stereochemistry of biphenyl compounds. (2+6 = 8 marks)

4. **Short Essays:**

- 4A. Explain Hoffmann's exhaustive methylation and EMDE methods of degradation in determining the structure of alkaloids with suitable examples. (4 marks)
- 4B. Explain the chemistry of papaverine. (4 marks)
- 4C. Give the chemistry and uses of Taxol. (4 marks)
- 4D. i) Explain Fischer indole synthesis.
ii) Give the structure and use of Metronidazole. (3+1 = 4 marks)

5. **Short Answers:**

- 5A. Write two chemical reactions of camphor.
5B. Define and classify glycosides.
5C. How will you synthesize amino acids by Strecker synthesis?
5D. What are waxes? How do they differ from fats?
5E. Compare the aromaticity of pyrrole and furan. (2×5 = 10 marks)



MANIPAL UNIVERSITY

SECOND YEAR B. PHARM. DEGREE EXAMINATION – MAY 2011

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

Thursday, May 12, 2011

Time: 10:00 – 13:00 Hrs.

Max. Marks: 75

✍ **Answer all questions. Write chemical reactions wherever necessary.****1. Short Answers:**

- 1A. Define the term Normality, Molarity, Mole fraction, Molality and Formality. (5 marks)
- 1B. Classify Errors and explain them in brief. (5 marks)
- 1C. Write a note on precipitation from Homogenous solution. (5 marks)
- 1D. i) Classify redox indicator with suitable examples.
ii) Write Nernst equation and explain its significance. (3+2 = 5 marks)
- 1E. Explain the principle involved in the Diazotization titration of Sulpha drugs. (5 marks)
- 1F. What precautions are to be taken while preparing 0.1N perchloric acid? How is it standardized? (5 marks)
- 1G. Define the term Buffer. Give applications of Buffer solutions in Pharmacy. (5 marks)

✍ **Essays:**

2. Explain the titration curve of strong acid against strong base. Comment on the selection of indicators for the above titration. (10 marks)
3. Explain the sampling, precipitation and filtration steps in Gravimetry in brief. (10 marks)
- 4A. Prepare 500ml of 0.1N iodine solution. Explain the principle in the standardization of 0.1N iodine solution.
- 4B. Explain with examples side reactions in redox titrations. (5+5 = 10 marks)
- 5A. Explain Fajan's method for determination of halides in detail.
- 5B. Classify complexometric titration with suitable example. (5+5 = 10 marks)



MANIPAL UNIVERSITY

SECOND YEAR B. PHARM. DEGREE EXAMINATION – MAY 2011

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

Thursday, May 12, 2011

Time: 10:00 – 13:00 Hrs.

Max. Marks: 50

✍ **Long essay:**

- 1A. Explain with examples side reactions in redox titration.
 1B. What is Iodometry and Iodimetry titration? Explain iodometry titration with the help of examples.

(4+4 = 8 marks)

2. Explain the titration curve of strong acid Vs strong base with the special emphasis on pH at different points and suggesting a suitable indicator.

(8 marks)

3. Write a note on precipitated form and weighed form with respective requirements in gravimetric analysis.

(8 marks)

4. **Short essay:**

- 4A. Classify solvents used in non-aqueous titrations with two examples each class.

(4 marks)

- 4B. Derive an expression stability constant of metal-EDTA-complex and explain in brief factor affecting it.

(4 marks)

- 4C. Write the difference between Mohr's method and Volhard's method for the determination of halides with one example each.

(4 marks)

- 4D. i) Define the term "Significant figure". Give examples.

ii) $258.10 + 0.066 + 0.382466 + 93.6544 + 0.259 = ?$

(2+2 = 4 marks)

5. **Short answer:**

- 5A. Explain the applications of computers in quality control laboratories of pharmaceutical industry.

- 5B. Explain the principle of end point detection using external indicator in diazotization. Write necessary chemical reactions.

- 5C. Name any four organic precipitants.

- 5D. Define Indicator range and give the formula to calculate the same.

- 5E. Write any two indicators used in bromate titrations.

(2×5 = 10 marks)



MANIPAL UNIVERSITY**SECOND YEAR B. PHARM. DEGREE EXAMINATION – MAY 2011****SUBJECT: PHARMACOGNOSY - I (PCO 206)
(CREDIT BASED SYSTEM)**

Saturday, May 14, 2011

Time: 10:00 – 13:00 Hrs.

Max. Marks: 50

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

✍ **Long Essays:**

1. Define lipids. Classify the lipids. Describe different methods of extraction of lipids.
2. Define tannins. Differentiate between hydrolysable and condensed tannins. Explain different methods for estimation of tannins.
3. Explain the intrinsic factors that affect the cultivation of crude drugs.

(8×3 = 24 marks)

4. Short Essays:

- 4A. Write the Botanical source, Family, Chemical constituents, Uses and Morphology of Tragacanth.
- 4B. Explain different types of trichomes and stomata with an example for each.
- 4C. Write the source active constituents uses and morphology of fennel.
- 4D. Explain the source and the preparation of gelatin.

(4×4 = 16 marks)

5. Short Answers:

- 5A. Fiehe's test and its significance.
- 5B. Source active constituents and uses of Cotton.
- 5C. Surgical fibers.
- 5D. Alkaloids.
- 5E. Auxins.

(2×5 = 10 marks)

