

MANIPAL UNIVERSITY

FIRST YEAR PHARM D. DEGREE EXAMINATION – JULY 2015

SUBJECT: PHA 1.1T: HUMAN ANATOMY AND PHYSIOLOGY (2014 REGULATION)

Monday, July 20, 2015

Time: 10:00 – 13:00 Hrs.

Max. Marks: 70

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

✍ **Long answer questions:**

1. Define blood pressure and discuss the various physiological mechanisms regulating it. (1+9 = 10 marks)
2. Describe the anatomy of spinal cord. (10 marks)
3. Discuss the process of oogenesis and follicular development in ovary. (5+5 = 10 marks)

4. **Short answer questions:**

- 4A. Discuss the formation, functions and flow of lymph. (5 marks)
- 4B. Define Homeostasis and explain the different components of feedback system with one suitable example. (1+4 = 5 marks)
- 4C. Describe the role of platelets in blood clotting. Define any two bleeding disorders. (3+2 = 5 marks)
- 4D. Compare and contrast between various types of muscular tissue. (5 marks)
- 4E. What is GFR? Mention the various factors regulating GFR. (1+4 = 5 marks)
- 4F. List the hormones secreted from pancreas and explain their principal actions. (5 marks)

5. **Give reasons for the following:**

- 5A. Osteoclastic - osteoblastic imbalance leads to osteoporosis in older women
 - 5B. Smoking decreases respiratory efficiency
 - 5C. Rich blood supply is important for muscle contraction
 - 5D. Blood glucose levels regulate pancreatic hormones secretion
 - 5E. Sertoli and Leydig cells both are required for male fertility
- (2 marks × 5 = 10 marks)



MANIPAL UNIVERSITY**FIRST YEAR PHARM D. DEGREE EXAMINATION – JULY 2015****SUBJECT: PCE 1.2T: PHARMACEUTICS
(2014 REGULATION)**

Wednesday, July 22, 2015

Time: 10:00 – 13:00 Hrs.

Max. Marks: 70

✍ **Answer ALL the questions.**

✍ **Long Answer Questions:**

1. Explain the preparation of effervescent granules.
2. Explain chemical sterilization method for catgut.
3. Classify the various methods and give the formula for the calculation of pediatric doses.

(10 marks × 3 = 30 marks)

4. **Short Answer Questions:**

- 4A. Write short notes on theobroma oil.
- 4B. Discuss briefly the deflocculated suspensions.
- 4C. Compare and contrast lotions and liniments.
- 4D. Discuss simple maceration process. Give one example.
- 4E. An elixir contains 42 %v/v alcohol. What is the proof spirit?
- 4F. What is pharmaceutical incompatibility? Mention various types and explain physical incompatibility with an example.

(5 marks × 6 = 30 marks)

5. **Give reasons for the following:**

- 5A. Why creaming is reversible?
- 5B. Crude drugs are subjected to maceration process before percolation, Why?
- 5C. Water is most commonly used menstruum, Why?
- 5D. Why pharmaceutical dosage forms are important?
- 5E. Why patient information is required in the prescriptions?

(2 marks × 5 = 10 marks)



MANIPAL UNIVERSITY

FIRST YEAR PHARM D. DEGREE EXAMINATION – JULY 2015

SUBJECT: PBT 1.3T: MEDICINAL BIOCHEMISTRY
(2014 REGULATION)

Friday, July 24, 2015

Time: 10:00 – 13:00 Hrs.

Max. Marks: 70

✍ Answer ALL questions.

✍ Draw neat labeled diagrams wherever necessary.

✍ Long Answer Questions:

1. Define and mention any four features of glycolysis. Explain the reactions and energetics of energy generation phase of EMP pathway.
2. Explain in detail the biosynthesis of fatty acid with Palmitic acid as an example.
3. Explain the synthesis of hnRNA in a prokaryotic cell. Add a note on post transcriptional modifications.

(10 marks × 3 = 30 marks)

4. Short Answer Questions:

- 4A. Sketch the steps involved in formation of stercobilin from HEME.
- 4B. Discuss the steps involved in Krebs-Henseleit cycle.
- 4C. Define enzyme inhibitors. Differentiate between competitive inhibition and non-competitive inhibition.
- 4D. Explain the methods used for the measurement of body water.
- 4E. Briefly discuss important functions of liver. Add a note on liver function tests.
- 4F. Enlist the mechanisms of oxidative phosphorylation. Explain the chemiosmotic hypothesis.

(5 marks × 6 = 30 marks)

5. Give reasons for the following:

- 5A. Golgi apparatus is involved in membrane synthesis
- 5B. ELISA is used for the measurement, assay and detection of various biomolecules
- 5C. Increased nocturia is an early indication of tubular dysfunction.
- 5D. Women are less prone to heart related disorders compared to men.
- 5E. DNA replication is considered as semiconservative and semi-discontinuous.

(2 marks × 5 = 10 marks)



MANIPAL UNIVERSITY

FIRST YEAR PHARM D. DEGREE EXAMINATION – JULY 2015

SUBJECT: PCH 1.4T: PHARMACEUTICAL ORGANIC CHEMISTRY
(2014 REGULATION)

Monday, July 27, 2015

Time: 10:00 – 13:00 Hrs.

Max. Marks: 70

✍ **Answer ALL the questions.**

✍ **Long Answer Questions:**

1A. Explain the Friedel crafts alkylation with mechanism.

1B. Name two ortho, para activators and deactivators each.

1C. Define dipole moment. Mention its significance.

(6+2+2 = 10 marks)

2. What is resonance? Explain in detail, nucleophilic substitution in allylic and vinylic substrates.

(10 marks)

3. Give the method of preparation, and uses of the following:

a) Glyceryl trinitrate

b) Urea

c) Ethylene chloride

(10 marks)

4. **Short Answer Questions:**

4A. Differentiate with mechanism, the SN1 and SN2 reactions. Propose a suitable solvent to carry out these reactions.

4B. Write a note on stability of conjugated dienes.

4C. What is Cannizzaro's reaction? Explain with mechanism.

4D. What is the importance of zaitsev's rule? Discuss with an example.

4E. Explain Reimer-Tiemann reaction with mechanism.

4F. Describe the mechanism involved in the formation of ethylene dibromide from ethylene.

(5 marks × 6 = 30 marks)

5. **Give reasons for the following:**

5A. London forces are weaker than hydrogen bonding.

5B. Vinyl chloride is less reactive than ethylene.

5C. Benzaldehyde is meta directing deactivator in electrophilic aromatic substitution.

5D. 1,2 addition reaction of 1,3 butadiene with HBr occurs faster than 1,4 addition.

5E. SN2 reaction gives a product which is a racemic mixture.

(2 marks × 5 = 10 marks)



MANIPAL UNIVERSITY

FIRST YEAR PHARM D. DEGREE EXAMINATION – JULY 2015

SUBJECT: PD 1.4: PHARMACEUTICAL ORGANIC CHEMISTRY
(OLD REGULATION)

Monday, July 27, 2015

Time: 10:00 – 13:00 Hrs.

Max. Marks: 70

✍ Answer all questions.

✍ Long Essays:

- 1A. Discuss the mechanism, and kinetics of S_N1 reactions.
- 1B. Give the reaction, mechanism and predict the major products of the following reaction. Justify the answer: Nitration of Bromobenzene
- 1C. What is diazotization reaction? Give an example.

(4+4+2 = 10 marks)

- 2A. Discuss in detail about resonance, orbital picture and molecular orbital picture of allyl radical.
- 2B. Explain hyperconjugation in alkyl radical.

(6+4 = 10 marks)

3. Write any three addition reactions of alkenes with equations taking propene as an example. Write mechanism on any one of them.

(6+4 = 10 marks)

4. Short Essay:

- 4A. What is dipole moment? How is dipole moment calculated? Give its importance.
- 4B. Explain with an example, the reaction and mechanism involved in the alkylation of Benzene.
- 4C. Give few examples for Activating and Deactivating groups in electrophilic aromatic substitution reactions.
- 4D. Explain the reaction and mechanism of Cannizzaro reaction.
- 4E. Give the method of preparation and uses of following:
i) Vanillin ii) Lactic acid
- 4F. How will you convert Benzamide to Aniline? Explain with mechanism.

(2+2+1 = 5 marks)

(5 marks)

(3+2 = 5 marks)

(5 marks)

(5 marks)

(5 marks)

5. **Short Answers:**

5A. Define Electronegativity. How it helps in determining the type of bond?

5B. Mention few solvents, with examples, used in S_N1 & S_N2 reactions.

5C. Give any two differences between E_1 & E_2 reactions.

5D. Write the structure of:

i) tertiary butyl alcohol	ii) 2-pentene
iii) 3-chlorobutane	iv) 5-oxo hexanoic acid

5E. Explain any two methods of preparation of cycloalkane.

(2 marks \times 5 = 10 marks)



MANIPAL UNIVERSITY

FIRST YEAR PHARM D. DEGREE EXAMINATION – JULY 2015

SUBJECT: PCH 1.5T: PHARMACEUTICAL INORGANIC CHEMISTRY (2014 REGULATION)

Wednesday, July 29, 2015

Time: 10:00 – 13:00 Hrs.

Max. Marks: 70

✍ **Answer ALL the questions.**

✍ **Long Answer Questions:**

1. What are limit tests? Explain the principle involved in the limit test for heavy metals and give the reaction involved.
Give the preparation and assay of potassium citrate.
Mention any two essential trace ions. (10 marks)
2. Define respiratory stimulants. Give the preparation of Potassium iodide.
Mention four indicators used in precipitation titrations.
Give the method of preparation, assay and use of Sodium acetate. (10 marks)
3. Explain the types of redox indicators.
Explain the role of fluorides in the treatment of dental caries.
Give the preparation of Calcium carbonate. (10 marks)

4. **Short Answer Questions:**

- 4A. Give the preparation and uses of: i) Magnesium stearate ii) Magnesium sulphate
- 4B. Classify volumetric methods and briefly explain each method.
- 4C. What are disinfectants? Explain various mechanism of action of antimicrobial agents with examples.
- 4D. What are antacids? Write a note on acid neutralizing capacity. Enlist the drawbacks of commonly used antacids.
- 4E. Explain ionic theory of indicators with an example .
- 4F. Classify different types of errors in volumetric analysis. (5 marks × 6 = 30 marks)

5. **Give reasons for the following:**

- 5A. Ammonium chloride should be protected from moisture.
- 5B. Sodium bicarbonate causes systemic alkalosis.
- 5C. Stannated hydrochloric acid is used in the limit test for arsenic.
- 5D. Hydrogen peroxide is stored in dark coloured bottles.
- 5E. ORS is prescribed in the cases of dehydration. (2 marks × 5 = 10 marks)



MANIPAL UNIVERSITY

FIRST YEAR PHARM D. DEGREE EXAMINATION – JULY 2015

SUBJECT: PD 1.5: PHARMACEUTICAL INORGANIC CHEMISTRY
(NEW REGULATION – 2013-14 BATCH)

Wednesday, July 29, 2015

Time: 10:00 – 13:00 Hrs.

Max. Marks: 70

✍ Answer ALL the questions.

✍ Long Essay Questions:

- 1A. Explain the principle involved in the limit test for Arsenic with reaction. Give the preparation and assay of ammonium chloride. Mention any four qualities of an ideal antacid.
- 1B. What are Expectorants? Give the preparation and assay of Potassium iodide. Give the preparation, assay and uses of potassium chloride
- 1C. What are anticaries agents? Classify dental products with suitable examples. Give the preparation and assay of sodium thiosulphate.

(10 marks × 3 = 30 marks)

2. Short Essay Questions:

- 2A. Explain different types of complexometric titrations with examples.
- 2B. Define half-life. Give precautions for handling radiopharmaceuticals.
- 2C. Give the preparation, assay and use of Zinc chloride.
- 2D. Explain the method of preparation and standardization of perchloric acid solution.
- 2E. Explain three theories of acid base along with their limitations.
- 2F. Explain the ionic theory of indicators with an example.

(5 marks × 6 = 30 marks)

3. Short Answers Questions:

- 3A. Explain digestion in Gravimetry.
- 3B. Define and give example for the following:
i) Primary standard ii) Secondary standard
- 3C. Mention the important physiological roles of sulphur.
- 3D. Mention the uses of sodium metabisulphite.
- 3E. Give the constituents of compound sodium chloride injection.

(2 marks × 5 = 10 marks)

