Reg. No.										

MANIPAL UNIVERSITY

FIRST YEAR PHARM D. DEGREE EXAMINATION – MAY 2016

SUBJECT: PCH 1.5T: PHARMACEUTICAL INORGANIC CHEMISTRY

(2014 REGULATION)

Wednesday, May 04, 2016

Time: 10:00 – 13:00 Hrs. Max. Marks: 70

✍ **Answer ALL the questions.**

✍ **Long Essay Questions:**

1. With reactions, explain the principle involved in the limit test for Iron.
   Give the preparation and assay of Sodium citrate.
   List out four important physiological roles of Iron.

   (10 marks)

2. Classify dental products with suitable examples.
   Give the assay of any one compound involving non aqueous titration.

   (10 marks)

3. Explain the types of indicators used in redox titrations.
   Give the preparation and assay of Nitrous Oxide. Explain the assay with labelled diagram.

   (10 marks)

4. **Short Essay Questions**:

4A. Give the preparation and uses of: i) Magnesium stearate ii) Calcium carbonate

4B. What are antacids? Write a note on acid neutralizing capacity. Enlist the drawbacks of commonly used antacids.

4C. Give the method of preparation, assay and use of Magnesium Hydroxide.

4D. Explain ionic theory of indicators with an example.

4E. Give the preparation, assay and uses of aluminium sulphate.

4F. What are disinfectants? Explain various mechanism of action of antimicrobial agents with examples.

(5 marks × 6 = 30 marks)

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

5A. Formaldehyde is added in the assay of ammonium chloride.

5B. Lead acetate cotton is used in the limit test for arsenic.

5C. Absolute error differs from relative error.

5D. Quenching gas is required for the working of Geiger Muller Counter.

5E. Potassium iodide used in both iodimetric and iodometric titrations.

(2 marks × 5 = 10 marks)

Reg. No.										

MANIPAL UNIVERSITY

FIRST YEAR PHARM D. DEGREE EXAMINATION – MAY 2016

SUBJECT: PD 1.5: PHARMACEUTICAL INORGANIC CHEMISTRY (OLD REGULATION)

Wednesday, May 04, 2016

Time: 10:00 – 13:00 Hrs. Max. Marks: 70

✍ **Answer ALL the questions.**

✍ **Long Essay Questions:**

1. Explain different types of complexometric titrations with examples.
   Give the preparation, assay and category of ammonium chloride.
2. Define oral antiseptic and astringent with one example each. Explain the role of fluorides in the treatment of dental caries. Give the preparation and assay of sodium acetate.
3. Explain the physiological roles of Zinc and copper.
   Explain two methods of preparation and assay of Magnesium carbonate.
   Give the principle involved in the limit test for chlorides.

(10 marks × 3 = 30 marks)

4. **Short Essay Questions:**

4A. Define a primary standard giving two examples. Name the qualities of ideal primary standard.
4B. Explain Modified Volhard's method for precipitation titrations.
4C. Explain Ostwald theory of indicators with suitable example. What are the advantages of Ostwald theory of indicators?
4D. Explain strong acid vs. strong base titrations. Which indicators are suitable for such type of titrations?
4E. Give the preparation, assay and uses of Potassium iodide.
4F. Classify different types of solvents used in non-aqueous titrations. Give the name of any two indicators used in non-aqueous titrations.

(5 marks × 6 = 30 marks)

5. **Short Answers Questions:**

5A. What is the role of lead acetate cotton in the limit test for arsenic?
5B. What are the units used to measure the radioactivity?
5C. Define Iodometry and Iodimetry.
5D. Mention the uses of Sodium thiosulphate.
5E. Enlist the steps involved in gravimetric assays.

(2 marks × 5 = 10 marks)

Reg. No.										

MANIPAL UNIVERSITY

FIRST YEAR PHARM D. DEGREE EXAMINATION – MAY 2016

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

Wednesday, May 04, 2016

Time: 10:00 – 13:00 Hrs. Max. Marks: 70

✍ **Answer ALL the questions.**

✍ **Long Essay Questions:**

1. Define Expectorants. Give the preparation and assay of potassium iodide.
   Explain the physiological roles of Zinc and copper.
   Mention the uses of Zinc stearate.
2. Classify dental products with suitable examples.
   Give the preparation assay and storage conditions for Hydrogen peroxide.
3. Write a note on three important buffer systems and their role in physiological acid base balance.
   Explain two methods of preparation and assay of sodium bicarbonate.
   Define cathartics with a suitable example.

(10 marks × 3 = 30 marks)

4. **Short Essay questions:**

4A. Define a primary standard giving two examples. Name the qualities of ideal primary standard.
4B. Give the preparation, assay and category of Sodium citrate.
4C. Explain the principle involved in the limit test for lead. Give the reaction equation.
4D. Explain briefly about three types of radiations.
4E. Explain Ostwald theory of indicators with examples. What are the advantages of Ostwald theory of indicators?
4F. Explain the construction and working of Geiger Muller counter.

(5 marks × 6 = 30 marks)

5. **Short Answers Questions:**

5A. Give any two indicators used in complexometric titrations.
5B. Explain electrolyte combination therapy with an example.
5C. Give one method of preparation of carbon dioxide.
5D. What is the use of nitrobenzene in modified Volhard's method?
5E. Give any two uses of Sodium metabisulphite.

(2 marks × 5 = 10 marks)

Reg. No.										

MANIPAL UNIVERSITY

FIRST YEAR PHARM D. DEGREE EXAMINATION – MAY 2016

SUBJECT: PCE 1.2T: PHARMACEUTICS
(2014 REGULATION)

Friday, May 06, 2016

Time: 10:00 – 13:00 Hrs. Max. Marks: 70

✍ **Answer ALL questions.**

✍ **Long Answer Questions:**

1. Discuss physical instability of emulsions.
2. Explain the simple percolation process.
3. Give the explanation over various parts and handling of prescription.

(10 marks × 3 = 30 marks)

4. **Short Answer Questions:**

4A. Explain the various uses of enemas.
4B. Write short notes on dusting powders.
4C. Discuss the disadvantages of theobroma oil used in suppositories.
4D. Briefly explain Absorbent cotton gauze.
4E. Describe adjusted and tolerated type of incompatibilities with one example of each.
4F. How many proof gallons are there in 5 gallons of an alcoholic solution that contains 30% alcohol?

(5 marks × 6 = 30 marks)

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

5A. Why paracetamol is formulated as an elixir?
5B. Why boiling water is added in preparing fresh infusions?
5C. Moistening is an important step in simple maceration, state why?
5D. Tensile strength is important quality parameter ideal dressing, why?
5E. Why prescriber's signatures are important in the prescriptions containing narcotic medicines?

(2 marks × 5 = 10 marks)

Reg. No.										

MANIPAL UNIVERSITY

FIRST YEAR PHARM D. DEGREE EXAMINATION – MAY 2016

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

Monday, May 09, 2016

Time: 10:00 – 13:00 Hrs. Max. Marks: 70

✍ **Answer ALL the questions.**

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

✍ **Long Essays:**

1. Enlist the enzymes involved in the aerobic oxidation of glucose. Explain the irreversible steps in glycolysis and show how they are bypassed in gluconeogenesis.
2. Explain in detail the synthesis, utilization and significance of β-hydroxy butyrate.
3. Explain the following with respect to transcription process in prokaryotes:
   a) Transcription unit b) RNA polymerase
   c) Transcription inhibitors d) Post transcriptional modifications

(10 marks × 3 = 30 marks)

4. **Short Essays:**

4A. Write the characteristics associated with the following:
   i) Acute intermittent porphyria ii) Porphyria cutanea tarda

4B. Write short notes on the regulation, energetics and disorders associated with Krebs-Henseleit cycle.

4C. Explain the different types of enzyme substrate complex models.

4D. Mention the role of bicarbonates in maintaining blood pH and explain the method used for determination of serum calcium.

4E. Give the protocol for estimating creatinine clearance in the kidney function test.

4F. Classify ELISA techniques. Explain competitive ELISA.

(5 marks × 6 = 30 marks)

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

5A. Body fluids should be decontaminated before disposal.

5B. Brown adipose tissue conserves heat in hairless animals.

5C. BSP is a dye which is helpful in assessing the excretory function of liver.

5D. Arachidonic acid can fall under essential fatty acid.

5E. DNA topoisomerases and ligases are highly essential for the replication process.

(2 marks × 5 = 10 marks)

Reg. No.										

MANIPAL UNIVERSITY

FIRST YEAR PHARM D. DEGREE EXAMINATION – MAY 2016

SUBJECT: PCH 1.4T: PHARMACEUTICAL ORGANIC CHEMISTRY

(2014 REGULATION)

Wednesday, May 11, 2016

Time: 10:00 – 13:00 Hrs. Max. Marks: 70

✍ **Answer ALL the questions.**

✍ **Long Answer Questions:**

1A. Explain with mechanism, the bromination of Toluene.

1B. Write a note on Intermolecular forces.

(7+3 = 10 marks)

2A. What are cycloalkanes? Give examples. Describe three general methods for the preparation of cycloalkanes.

2B. Discuss the mechanism involved in the formation of ethylene bromohydrin.

(5+5 = 10 marks)

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

a) Dimercaprol b) Lactic acid

(10 marks)

4. **Short Answer Questions:**

4A. Discuss the mechanism involved in allylic chlorination of propylene.

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

4C. With a neat diagram, explain the orbital picture of allyl radical.

4D. Compare the evidences for E1 and E2 reactions.

4E. Explain Claisen condensation reaction with mechanism.

4F. Discus the mechanism, stereochemistry and choice of a solvent for S_N2 reactions.

(5 marks × 6 = 30 marks)

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

5A. Tertiary butyl chloride is a poor substrate for S_N2 reactions.

5B. Chlorination of methane is considered as chain reaction.

5C. Pyridine is used in the preparation of aspirin.

5D. Hydration of 2-methyl-1-propene with H_2O/H_2SO_4 gives tertiary butyl alcohol.

5E. Methane is a gas where as pentane is a liquid at room temperature.

(2 marks × 5 = 10 marks)

Reg. No.										

MANIPAL UNIVERSITY

FIRST YEAR PHARM D. DEGREE EXAMINATION – MAY 2016

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

Wednesday, May 11, 2016

Time: 10:00 – 13:00 Hrs. Max. Marks: 70

✍ **Answer ALL questions.**

✍ **Long Essays:**

1A. Enlist the general principles of Resonance.

1B. Explain resonance, stability and orbital picture of allyl radical.

(3+7 = 10 marks)

2A. Explain the mechanism of peroxide initiated free radical addition to alkenes.

2B. Explain the rearrangement in electrophilic addition to alkenes.

(5+5 = 10 marks)

3. Give method of preparation and uses of following:

i) Ethylene diamine ii) Salicylic acid iii) Vanillin iv) Aspirin

(2½ marks × 4 = 10 marks)

4. **Short Essays:**

4A. How will you convert Benzaldehyde to Benzyl alchohol?

4B. Explain the mechanism involved in Reimer Teimann reactions.

4C. Explain the mechanism involved in Hydroboration and Oxidation of alkenes.

4D. Explain the mechanism of sulphonation reactions.

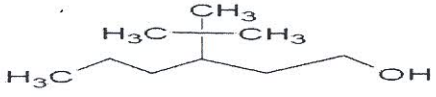
4E. Write a brief note on nucleophilic assistance by solvents.

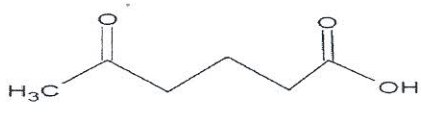
4F. Explain absence of hydrogen exchange and elemental effect in E_2 elimination reactions.

(5 marks × 6 = 30 marks)

5. **Short Answers:**

5A. Write IUPAC name of

i) 

ii) 

5B. What is phase transfer catalysis?

5C. Write a note on free radical inhibitors.

5D. Why trichloro acetic acid is more acidic than acetic acid?

5E. How will you assay Lactic acid?

(2 marks × 5 = 10 marks)

Reg. No.										

MANIPAL UNIVERSITY

FIRST YEAR PHARM D. DEGREE EXAMINATION – MAY 2016

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

Friday, May 13, 2016

Time: 10:00 – 13:00 Hrs. Max. Marks: 70

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

Long Answer Questions:

1. Explain the mechanical and chemical digestion in stomach and intestine. List any three functions of liver.

(3+4+3 = 10 marks)

2. Discuss, with a labeled diagram, the formation, circulation and functions of CSF.

(2+6+2 = 10 marks)

3. Enumerate the various types of cells of anterior pituitary gland. Mention their secretion with any one function of each hormone.

($3+3^1/_2+3^1/_2$ = 10 marks)

4. **Short Answer Questions:**

4A. Define Cardiac output with normal values. Discuss the factors affecting stroke volume.

(1+4 = 5 marks)

4B. Explain any five functions of plasma membrane proteins.

(5 marks)

4C. Discuss in brief, the physiology of hearing.

(5 marks)

4D. Describe the filtration membrane and its role in glomerular filtration.

(1+4 = 5 marks)

4E. Explain the coagulation cascade with a flow chart.

(5 marks)

4F. Define various lung volumes and capacities.

(5 marks)

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

5A. Why breathing rate increases during exercise?

5B. Constituents of semen are important for transportation of sperms for fertilization.

5C. Boyle's law helps in understanding mechanism of respiration.

5D. Sports ability of male is more than female.

5E. Levels of FSH and LH fluctuate in female reproductive system.

(2 marks × 5 = 10 marks)