

# Question Paper



## MANIPAL UNIVERSITY

**FIRST YEAR PHARM D. DEGREE EXAMINATION - MAY 2017**  
**SUBJECT: PHA 1.1T: HUMAN ANATOMY AND PHYSIOLOGY**  
**(REVISED REGULATIONS 2014)**  
**Thursday, May 04, 2017 (10.00 - 13.00 Hrs.)**

**Duration: 180 mins.**

**Marks: 70**

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

### Long Answer Questions:

- 1) Discuss the concept of fluid mosaic model of plasma membrane. (10)  
Discuss the functions of membrane proteins. (6+4 = 10 marks)
- 2) Describe the cross sectional anatomy of kidney. Discuss the factors affecting glomerular filtration rate. (10)  
(5+5 = 10 marks)
- 3) Discuss the formation, storage and release of thyroid hormones. (10)  
Explain the role of calcitonin, parathyroid hormone and calcitriol in calcium homeostasis. (5+5 = 10 marks)

### Short answer questions:

- 4A) With the help of a diagram outline the sequential events in adaptive immunity. (5)
- 4B) Briefly discuss the physiology of hearing. (5)
- 4C) Describe the process of pulmonary ventilation. Explain the factors affecting it. (5)
- 4D) With a flow chart discuss platelet plug formation. (5)
- 4E) Describe the internal anatomy of the heart. (5)
- 4F) Describe the signal transduction at chemical synapse. (5)

### Give reasons for the followings:

- 5A) A small amount of methyl mercaptan is added to natural gas cylinder used for cooking. (2)
- 5B) Food in the mouth increases the gastric secretion. (2)
- 5C) Sertoli cells do not produce testosterone but they help in spermatogenesis. (2)
- 5D) If the menstruation day and the ovulation day are known, then a couple can plan or prevent pregnancy. (2)
- 5E) Glucose homeostasis in the body is mainly because of endocrine pancreas. (2)



## MANIPAL UNIVERSITY

FIRST YEAR PHARM D. DEGREE EXAMINATION - MAY 2017  
SUBJECT: PCE 1.2T - PHARMACEUTICS  
(REGULATIONS 2014)  
Saturday, May 06, 2017 (10.00 - 13.00 Hrs.)

Marks: 70

Duration: 180 mins.

### Long Answer Questions:

- 1) Classify the various methods for the calculations of pediatric doses. (10)  
Give the formulae.
- 2) Explain the moulding method to prepare suppositories. (10)
- 3) Define incompatibilities. Explain therapeutic incompatibility with examples. (10)

### Short Answer Questions:

- 4A) Explain the fusion method to prepare effervescent granules. (5)
- 4B) Define surgical dressing. Add a note on cotton wool. (5)
- 4C) Discuss briefly on deflocculated suspensions. (5)
- 4D) Write a note on nasal drops. (5)
- 4E) Define allegation and write the steps of allegation method. (5)
- 4F) Discuss briefly the factors affecting selection of extraction process. (5)

### Give Reasons for the Following:

- 5A) Why liniments should not be applied on the broken area? (2)
- 5B) Adsorbents are required in the eutectic powder. Why? (2)
- 5C) Why patient information is required in the prescriptions? (2)
- 5D) How the oil in water emulsion conducts electricity? (2)
- 5E) Sedimentation rate is high in flocculated suspensions. Why? (2)

# Question Paper



## MANIPAL UNIVERSITY

FIRST YEAR PHARM D. DEGREE EXAMINATION - MAY 2017  
SUBJECT: PCH 1.4T - PHARMACEUTICAL ORGANIC CHEMISTRY  
(REVISED REGULATION 2014)  
Tuesday, May 09, 2017 (10.00 - 13.00 Hrs.)

Marks: 70

Duration: 180 mins.

### Long Answer Questions:

- 1A) Write the mechanism of acetal formation. (5)  
1B) Explain the mechanism of Hoffmann bromamide reactions. (5)  
2A) Explain the mechanism and stereochemistry of E2 reactions. (5)  
2B) Explain Sachse Mohr theory of strain less rings. (5)  
3) Give the method of preparation, assay and use of the following: (10)  
i) Chlorobutol  
ii) Dimercaprol  
(5+5 = 10 marks)

### Short Answer Questions:

- 4A) Explain the mechanism of Imine formation with suitable example. (5)  
4B) Describe the relative halogenation of methane. (5)  
4C) Explain Benzoin condensation with mechanism. (5)  
4D) Discuss the mechanism involved in the conversion of Phenol to Salicylic acid. (5)  
4E) Explain the mechanism involved in the bromination of toluene. (5)  
4F) Explain Bronsted Lowry and Lewis theory of acids and bases. (5)

### Give Reasons for the Following:

- 5A) Cyclobutane is more stable than cyclopropane. (2)  
5B) As the atom size increases, boiling point increases. (2)  
5C) Nitro group is a strong meta directing deactivator. (2)  
5D) Polar aprotic solvents are not suitable for SN1 reactions. (2)  
5E) Water is a liquid and hydrogen sulfide is a gas at room temperature. (2)



# MANIPAL UNIVERSITY

FIRST YEAR PHARM D UNIVERSITY EXAMINATION - MAY 2017  
SUBJECT: MEDICINAL BIOCHEMISTRY (PBT 1.3T)  
(REGULATIONS 2014)

Thursday, 11 May, 2017 (10.00 - 13.00 Hrs.)

Answer all the questions.

Draw neat labeled diagrams wherever necessary.

Marks: 70

Duration: 180 mins.

## Long Essays:

- 1) Explain the reactions of aerobic glycolysis. Add a note on its energetics. (10)
- 2) Explain in detail the following disorders: (10)
  - i) Obesity
  - ii) Fatty liver
- 3) Explain DNA replication in prokaryotes, with the help of suitable diagram. (10)

## Short Essays:

- 4A) Explain the reactions of Urea cycle. (5)
- 4B) Give the enzyme defect, clinical manifestations, diagnosis and treatment associated with Phenylketonuria. (5)
- 4C) Give the IUB classification of enzymes citing suitable reaction under each class. (5)
- 4D) Schematically represent water turnover and explain regulation of water balance in normal adult. (5)
- 4E) Briefly discuss important functions of liver. Add a note on liver function tests. (5)
- 4F) Explain the rotary motor model of oxidative phosphorylation for ATP generation. (5)

## Give reasons for the following:

- 5A) The structure of plasma membrane is considered as 'fluid mosaic'. (2)
- 5B) Direct ELISA is also called as 'sandwich ELISA'. (2)
- 5C) Clearance test is indicative of glomerular function. (2)
- 5D) Ketone bodies are not utilized by liver. (2)
- 5E) Allopurinol is the drug of choice for the treatment of primary gout. (2)

**MANIPAL UNIVERSITY**

**FIRST YEAR PHARM D UNIVERSITY EXAMINATION - MAY 2017**  
**SUBJECT: PHARMACEUTICAL INORGANIC CHEMISTRY (PCH 1.5T)**  
**(REGULATIONS 2014)**  
**Saturday, 13 May, 2017 (10.00 - 13.00 Hrs.)**

Marks: 70

Duration: 180 mins.

**Long Answer Questions:**

- 1A) Define acidifiers. Give the preparation of Ammonium chloride. (3)
- 1B) With reactions, explain the principle involved in the limit test for Iron. (4)
- 1C) What modification has to be adopted in the limit test for chlorides and sulphate for sodium bicarbonate? (3)
- 2A) Give the method of preparation, assay and uses of sodium acetate. (5)
- 2B) Explain Fajan's method of precipitation titrations. (5)
- 3A) Give the assay and preparation of oxygen. Explain the apparatus used in assay procedure. (5)
- 3B) Explain the preparation and standardization of 0.1 N potassium permanganate. (5)

**Short Answer Questions:**

- 4A) Explain ionic theory of indicator with an example. (5)
- 4B) What are the types of solvents used in nonaqueous titration? (5)
- 4C) Define antidotes. Give the preparation and assay of Sodium thiosulphate. (5)

- 4D) Classify dental products with examples. Give the method of preparation and assay of sodium fluoride. (5)
- 4E) Explain the three acid base theories with their limitations. (5)
- 4F) Explain the condition for the formation of crystalline precipitate in gravimetric analysis. (5)

**Give Reasons for the Following:**

- 5A) Dilute acetic acid is used in the limit test for sulphates. (2)
- 5B) Copper is an essential and trace element. (2)
- 5C) Water is not used as washing solvent in some cases in Gravimetry. (2)
- 5D) Ammonia ammonium chloride buffer is used in complexometric titration. (2)
- 5E) Nitrobenzene is used in modified Volhard's method. (2)