



## MANIPAL ACADEMY OF HIGHER EDUCATION

FIRST YEAR B. PHARM. DEGREE EXAMINATION - JULY 2019

SUBJECT: ANATOMY AND PHYSIOLOGY (PHA 102T)

(2014 REGULATION)

Wednesday, July 10, 2019 (14.00 - 17.00)

Answer ALL the questions.

Marks: 70

Duration: 180 mins.

### Long Answer Questions:

- 1) Discuss the functions of blood and explain the process of haemopoiesis. (10)
- 2) Explain the anatomical differences between endocrine and exocrine glands. Classify the hormones and explain the generalized cellular mechanisms of hormone actions. (10)  
(2+8 = 10 marks)
- 3) Describe the anatomy of synapse with a relevant diagram. Explain about different types of synapse. (10)

### 4) Short answer questions:

- 4A) Explain the formation, circulation and the functions of cerebrospinal fluid (CSF). (5)  
(1+3+1 = 5 marks)
- 4B) Explain the role of cardiovascular center in regulation of heart rate. (5)
- 4C) Discuss the calcium homeostasis in bones and blood. (5)
- 4D) Define ESR and PCV. Explain the morphology, cellular properties and functions of RBCs. (5)
- 4E) Explain the role of digestive enzymes secreted in gastric juice and bile juice. How does the absorption of vitamin B<sub>12</sub> take place in gastrointestinal tract? (5)  
(2+2+1 = 5 marks)
- 4F) Discuss any five functions of adrenal hormones. (5)

### 5) Give reasons for the followings:

- 5A) Mitochondria are called as power house and ATP is called the currency of the cell. (2)
- 5B) Tears from eye are not only the expression of emotions, happiness and sadness but also help in protection of eye. (2)
- 5C) Micturition is a spinal reflex, which involves both involuntary and voluntary muscle contraction. (2)
- 5D) Botulinum toxin and curare poisoning cause muscle paralysis and breathing stops. (2)
- 5E) Enteric nervous system is known as "brain of the gut". (2)

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# Question Paper

Exam Date & Time: 12-Jul-2019 (02:00 PM - 05:00 PM)



## MANIPAL ACADEMY OF HIGHER EDUCATION

FIRST YEAR B. PHARM. DEGREE EXAMINATION - JULY 2019

SUBJECT: BIOCHEMISTRY (PBT 103T)

(Revised Regulation 2014)

Friday, July 12, 2019 (14.00 - 17.00)

Answer all the questions.

Marks: 70

Duration: 180 mins.

### Long answer questions.

- 1) Define gluconeogenesis. Explain how pyruvate acts as a substrate for gluconeogenesis. (10)
- 2) What are essential fatty acids? Explain the  $\beta$ -Oxidation of Palmitic acid with respect to its activation, transport and  $\beta$ -Oxidation proper. (10)
- 3) **Explain the following with respect to nucleic acid metabolism:** (10)
  - a) Mutations and its consequences
  - b) Genetic code

### 4) Short answer questions:

- 4A) Write about the nomenclature and IUB classification of enzymes. (5)
- 4B) Define isoenzyme and coenzyme. Explain the effect of temperature on enzyme activity. (5)
- 4C) Name the bile pigments. Explain the steps involved in their conversion to urobilin. (5)
- 4D) Explain the steps involved in urea cycle. (5)
- 4E) Write short notes on any two macro minerals. (5)
- 4F) Sketch the salvage pathway for the synthesis of purine and pyrimidine nucleotides. (5)

### 5) Give reason for the following:

- 5A) Color of blood varies with oxygen content. (2)
- 5B) USFDA has banned the use of DNP. (2)
- 5C) Cause of most common porphyria. (2)
- 5D) Phenylalanine is both glucogenic and ketogenic in nature. (2)
- 5E) G6PD deficiency causes hemolytic anemia and resistance to malaria. (2)

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# Question Paper

Exam Date & Time: 15-Jul-2019 (02:00 PM - 05:00 PM)



## MANIPAL ACADEMY OF HIGHER EDUCATION

FIRST YEAR B. PHARM. DEGREE EXAMINATION - JULY 2019

SUBJECT: PHARMACEUTICAL ANALYSIS-I (PQA 104T)

(Revised regulation 2014)

Monday, July 15, 2019 (14.00 - 17.00)

Answer ALL the questions.

Write balanced chemical reactions and draw neatly labelled diagrams wherever necessary. Use of scientific calculator is allowed.

Marks: 70

Duration: 180 mins.

### Long answer questions:

- 1) Define the term calibration and give its significance. Explain correction factors to consider in the calibration of graduated volumetric glassware. (10)
- 2) 100mL of 0.1M ammonium hydroxide is titrated with 0.1M hydrochloric acid. Construct a titration curve for the same showing required calculations.  $K_b$  of ammonium hydroxide is  $1.85 \times 10^{-5}$ . HCl is a monobasic strong acid. (10)
- 3A) What is iodometry? Explain the principle of assay of copper sulphate. (5)
- 3B) Define equivalent weight of an oxidising agent. Name and explain the methods to determine the same with example. (5)

### 4) Short answer questions:

- 4A) Explain the detection of end point in complexometric titrations. (5)
- 4B) Explain the use of adsorption indicator in quantitative analysis of sodium chloride. (5)
- 4C) Write the ideal requirements of a washing solution used in gravimetric analysis. Explain various types of washing solutions with examples. (5)
- 4D) Write a note on  $H^+$  indicator error in neutralization titration and derive the expression for the same. (5)
- 4E i) Explain the principle of limit test for chloride. (3)
- 4E ii) How the impurities get incorporated in to the pharmaceutical preparations during the inadequate storage? (2)
- 4F i) How the solvent is selected for non -aqueous titration? (3)
- 4F ii) What is diazotisation titration? Name its applications. (2)

### 5) Give reasons for the following:

- 5A) Write the modifications made for Mohr's method. (2)
- 5B) Name any four primary standards used in neutralization titrations. (2)
- 5C) Why lateral orifice and orifice at the tip are essential in Gutzeit apparatus? (2)

- 5D) Why potassium permanganate titration widely used in acid solution than that of either neutral or alkaline solution? (2)
- 5E) Why mercuric acetate used in the estimation of halogen acid salts of bases by non-aqueous titration? (2)

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## MANIPAL ACADEMY OF HIGHER EDUCATION

FIRST YEAR B. PHARM. DEGREE EXAMINATION - JULY 2019  
 SUBJECT: PHARMACEUTICAL ORGANIC CHEMISTRY (PCH 105T)  
 (Revised regulation 2014)  
 Wednesday, July 17, 2019 (14.00 - 17.00)

Answer ALL the questions.

Marks: 70

Duration: 180 mins.

### Long Answer Questions:

- 1A) Explain three methods of generation and reactions of carbenes. (6)
- 1B) What is Reformatsky reaction? Explain the reaction mechanism. (4)
- 2A) Explain two methods of preparation of amines with equations. (4)
- 2B) What are the conditions required for a compound to show optical activity? Explain. (6)
- 3A) Discuss the reaction mechanism involved in nitration of benzene. (5)
- 3B) Explain the theory of reactivity in electrophilic aromatic substitution. (5)

### 4) Short Answer Questions:

- 4A) **Explain with mechanism, the use of the following reagents in organic synthesis** (5)  
 a) Aluminium tertiary butoxide  
 b) Sodamide
- 4B) Give the mechanism and evidences for E1 reaction. (5)
- 4C) Explain 1,4 addition and 1,2 addition with mechanism. (5)
- 4D) Explain two reactions of phenols with equations. (5)
- 4E) Explain Baeyer's strain theory. (5)
- 4F) Discuss about the stabilisation of carbocation. (5)

### 5) Give reasons for the following:

- 5A) Nitrogen trifluoride has lower dipole moment than ammonia. (2)
- 5B) Formaldehyde does not undergo ordinary aldol condensation. (2)
- 5C) 2,3-dichlorobutane is optically inactive (2)
- 5D) S<sub>N</sub>2 reactions proceed with inversion at a carbon. (2)
- 5E) Fluorination of benzene needs special reaction conditions. (2)

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## MANIPAL ACADEMY OF HIGHER EDUCATION

FIRST YEAR B. PHARM. DEGREE EXAMINATION - JULY 2019

SUBJECT: PHARMACOGNOSY - I (PCO 106T)

(Revised regulation 2014)

Friday, July 19, 2019 (14.00 - 17.00)

Answer ALL the questions.

Marks: 70

Duration: 180 mins.

### Long Answer Questions:

- 1A) Define proteins. Write various chemical tests for its identification. (5)
- 1B) Describe the chemical classification of crude drugs with merits and demerits. (5)
- 2) What are carbohydrates? Classify them with examples. Add a note on chemistry and chemical tests. (10)
- 3A) What are pests? Classify them with examples. Describe mechanical method in pest control. (5)
- 3B) Write an essay on drying of crude drugs. (5)

### 4) Short Answer Questions:

- 4A) Give Pharmacognostic report on Bees wax. (5)
- 4B) Define evaluation. Discuss biological method of evaluation of crude drugs. (5)
- 4C) What are stomata? With a neat labelled diagram classify them with example. (5)
- 4D) Describe any five formulations used in Ayurvedic system of medicine. (5)
- 4E) Define tannins. Give the general tests for their identification. (5)
- 4F) Discuss methods of preparation of starch from wheat and maize. (5)

### 5) Give reasons for the following:

- 5A) Cocoa seeds are fermented and roasted before extraction of cocoa butter. (2)
- 5B) Leaf constants are impotent parameter in the evaluation of leaf drugs. (2)
- 5C) Test for chlorophyll is negative for black catechu and positive for pale catechu. (2)
- 5D) How solubility is a criteria in the evaluation of certain oils? (2)
- 5E) Jojoba oil is a valuable substitute for sperm whale oil. (2)

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# Question Paper

Exam Date & Time: 23-Jul-2019 (02:00 PM - 05:00 PM)



## MANIPAL ACADEMY OF HIGHER EDUCATION

FIRST YEAR B. PHARM. DEGREE EXAMINATION - JULY 2019  
SUBJECT: ENVIRONMENTAL SCIENCE AND ETHICS (PMA 107T)  
(Revised regulation 2014)  
Tuesday, July 23, 2019 (14.00 - 17.00)

Marks: 70

Duration: 180 mins.

### Long Answer Questions:

- 1) Explain values (both direct and indirect) of biodiversity. Discuss in brief Integrated Protected Area System. (10)
- 2) Discuss various issues associated with Environmental Ethics. (10)
- 3) Discuss in brief the principles to be followed while conducting research using human beings as participants. (10)

### 4) Short Answer Questions:

- 4A) Discuss Act and Rule Utilitarianism with an example. (5)
- 4B) Discuss in brief Kantian Duty Ethics. Add a note on Categorical Imperative. (5)
- 4C) What is meant by Natural resources? Classify natural resources and write a note on Non-renewable natural resources. (5)
- 4D) Discuss concept of Ecosystem. Add a note on how ecosystem works. (5)
- 4E) Write a note on causes, effects and control of Air Pollution. (5)
- 4F) Describe population growth and variations among nations. Add a note on role of information technology in environment and human health. (5)

### 5) Give reasons for the following:

- 5A) What is Morality? (2)
- 5B) Discuss in brief Pragmatism. (2)
- 5C) Common misconduct in Business Organizations. (2)
- 5D) What do mean by Virtue Ethics? (2)
- 5E) List scientific disciplines needed to study environmental sciences. (2)

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