



MANIPAL ACADEMY OF HIGHER EDUCATION

FIRST YEAR B. PHARM. DEGREE EXAMINATION - JULY 2018

SUBJECT: ANATOMY AND PHYSIOLOGY (PHA 102T)

(REVISED 2014 REGULATION)

Wednesday, July 18, 2018 (10.00 - 13.00)

Answer ALL the questions.

Marks: 70

Duration: 180 mins.

Long Essay:

- 1) Describe the internal anatomy of heart and discuss the factors regulating cardiac output. (10)
- 2) Discuss skeletal muscle contraction and relaxation with relevant figures. (10)
- 3) Describe the neural and chemical regulation of respiration. (10)

4. Short Essay:

- 4A) Discuss the role of platelets and explain three stages of hemostasis. (5)
- 4B) Discuss any five functions of kidney. (5)
- 4C) Explain the signal transmission at chemical synapse with a diagram and discuss the fate of neurotransmitter released. (5)
- 4D) Explain the digestion and absorption of lipids from gastrointestinal tract. (5)
- 4E) List anterior pituitary hormones and their functions. (5)
- 4F) Describe the process of ovulation and explain its importance in contraception. (5)

5. Give reasons for the followings:

- 5A) Contraction of uterus and child birth is a positive feedback mechanism. (2)
- 5B) When red blood cells are kept in hypertonic sodium chloride solution the cells shrink and crenate. (2)
- 5C) Unlike skeletal muscles, the cardiac muscles will not be fatigued. (2)
- 5D) In diabetic patient glucose excretes in urine. (2)
- 5E) There are higher chances of ectopic pregnancy in a woman who is a chronic cigarette smoker than nonsmokers. (2)

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**MANIPAL ACADEMY OF HIGHER EDUCATION****FIRST YEAR B. PHARM. DEGREE EXAMINATION - JULY 2018****SUBJECT: BIOCHEMISTRY (PBT 103T)****(REVISED 2014 REGULATION)****Friday, July 20, 2018 (10.00 - 13.00)**

Answer ALL the questions.

Marks: 70

Duration: 180 mins.

Long answer questions:

- 1) Enlist the phase and explain the reactions of EMP pathway. (10)
- 2) Explain in detail on atherosclerosis and obesity. (10)
- 3) Enlist the salient features of Watson and crick model of DNA. Give four key differences between DNA and RNA. (10)

4. Short answer questions:

- 4A) Define enzymes. Enlist their properties and write briefly on their nomenclature. (5)
- 4B) Explain briefly on any two mechanisms of enzyme action. (5)
- 4C) Write short notes on the types of van den bergh reaction. Add a note on their significance. (5)
- 4D) Write about the enzyme defect, clinical manifestations, diagnosis and treatment of black urine disease. (5)
- 4E) Write short notes on folic acid. (5)
- 4F) Enlist the contributors and sketch the *de novo* synthesis of parent purine ribonucleotide. (5)

5. Give reason for the following:

- 5A) Peripheral membrane proteins can easily be separated from the membrane. (2)
- 5B) ATP is regarded as high energy compound. (2)
- 5C) Cause of porphyria cutanea tarda. (2)
- 5D) Four ATP's are utilized in urea cycle. (2)
- 5E) tRNA structure is compared to that of a clover leaf. (2)

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MANIPAL ACADEMY OF HIGHER EDUCATION

FIRST YEAR B. PHARM. DEGREE EXAMINATION - JULY 2018

SUBJECT: PHARMACEUTICAL ANALYSIS-I (PQA 104T)

(REVISED REGULATION - 2014)

Tuesday, July 24, 2018 (10.00 - 13.00)

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) Explain calibration of a volumetric flask with special emphasize on correction factors. (10)
- 2) Explain the titration curve of strong acid V/S strong base with special emphasis on pH at different points. Suggesting a suitable indicator for the same. (10)
- 3A) What is bromatometry titration? Explain with suitable example. (5)
- 3B) Explain with suitable example the side reaction in redox titration. (5)

4. Short Answer Questions:

- 4A) Describe the types of complexometric titrations in brief. (5)
- 4B) Explain the Mohr's method for the estimation of sodium chloride. (5)
- 4C) Explain the steps of gravimetric analysis in brief. (5)
- 4D) Write a note on OH⁻ indicator error in neutralization titration and derive the expression for the same. (5)
- 4E) Explain the principle of limit test for arsenic. (5)
- 4F) Name the solvent, titrant and indicator used for assaying weakly acidic and weakly basic drug by non-aqueous titrations. (3)
 - i)
 - ii) What is diazotisation titration? Name any two drugs estimated by the same. (2)

5. Short Answer Questions:

- 5A) What are adsorption indicators? Name any two adsorption indicators. (2)
- 5B) Calculate the molarity of a solution of sodium chloride prepared by dissolving 1.47g in 25mL of water. (Atomic weights of sodium: 23, Hydrogen: 1, Chlorine: 35.5, Oxygen: 16). (2)
- 5C) Why acetic anhydride is used in the preparation of 0.1M acetous perchloric acid solution? (2)

- 5D) Why potassium permanganate titration is generally carried out in acid solution than that of either neutral or alkaline solution? (2)
- 5E) Why citric acid and ammonia solutions are used in limit test for iron? (2)

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MANIPAL ACADEMY OF HIGHER EDUCATION

FIRST YEAR B. PHARM. DEGREE EXAMINATION - JULY 2018
SUBJECT: PHARMACEUTICAL ORGANIC CHEMISTRY (PCH 105T)
(REVISED REGULATION 2014)

Thursday, July 26, 2018 (10.00 - 13.00)

Answer ALL the questions.

Marks: 70

Duration: 180 mins.

Long Answer Questions:

- 1A) What is Sandmeyer reaction? Explain with mechanism. (5)
- 1B) Explain the ionic mechanism of electrophilic addition of HBr to unsymmetrical alkenes. (5)
- 2A) Give the specific use of the following reagents in organic synthesis: (5)
 i) Sodamide
 ii) Periodic acid
- 2B) Explain with mechanism Friedel Craft's alkylation of benzene. Give any two limitations of this method. (5)
- 3A) Explain inductive effect. (2)
- 3B) Explain molecular orbital theory based on wave mechanics. With example explain briefly about Hydrogen bonding. (6)
- 3C) What is Cis-trans isomerism? (2)

4. Short Answer Questions:

- 4A) Give the mechanism of E1 reaction with a suitable example. (5)
- 4B) Why there is a lack of complete racemization in S_N1 reactions? Discuss with evidence. (5)
- 4C) Discuss about the fate of carbocations. (5)
- 4D) Explain two methods of preparation of aldehydes. (5)
- 4E) Discuss about the stabilization of alkyl radical by hyperconjugation. (5)
- 4F) Explain two reactions of alkenes. (5)

5. Give Reasons for the Following:

- 5A) Iodination to benzene requires special reaction conditions. (2)
- 5B) Ethers possess a net dipole moment even if they are symmetrical in nature. (2)
- 5C) Ionic compounds have higher melting point. (2)

- 5D) E1 reactions do not show DIE effect. (2)
- 5E) Nitrobenzene is the strong meta- deactivator. (2)

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MANIPAL ACADEMY OF HIGHER EDUCATION
FIRST YEAR B. PHARM. DEGREE EXAMINATION – JULY 2018
SUBJECT: PHARMACEUTICAL ORGANIC CHEMISTRY (PCH 105)
(CREDIT BASED SYSTEM)

Thursday, July 26, 2018

Time: 10:00 – 13:00 Hrs.

Max. Marks: 50

✍ **Answer ALL the questions.**

✍ **Long Essays:**

- 1A. Discuss the mechanism of E2 reaction with suitable example.
1B. Give two methods of preparation and reactions of Phenols. (4+4 = 8 marks)
- 2A. Differentiate enantiomers, diastereomers and meso compounds.
2B. Discuss with suitable example, the mechanism of S_N1 reaction. (5+3 = 8 marks)
- 3A. How will you prepare and assay Citric acid?
3B. What are carbenes? Explain the methods of generation and reactions of carbenes. (4+4 = 8 marks)

4. **Short Essays:**

- 4A. Give the mechanism and synthetic applications of Kolbe reaction.
4B. Write specific uses of following reagents:
i) Lithium aluminium hydride
ii) N-bromosuccinimide
4C. Explain the mechanism of halogenation of benzene.
4D. Explain two methods of preparation and reactions of alkyl halides. (4 marks × 4 = 16 marks)

5. **Short Answers:**

- 5A. Explain peroxide effect with an example.
5B. Give the structure and uses of lactic acid.
5C. Explain the following terms:
i) Hydrogen bonding
ii) Dipole moment
5D. How will you convert Toluene into m- nitrobenzoic acid and p-nitrobenzoic acid?
5E. Why trichloro acetic acid is much stronger than acetic acid? (2 marks × 5 = 10 marks)





MANIPAL ACADEMY OF HIGHER EDUCATION

FIRST YEAR B. PHARM. DEGREE EXAMINATION - JULY 2018

SUBJECT: PHARMACOGNOSY - I (PCO 106T)

(REVISED REGULATION - 2014)

Saturday, July 28, 2018 (10.00 - 13.00)

Answer ALL the questions.

Marks: 70

Duration: 180 mins.

Long Answer Questions:

- 1) Give the detailed note on cell wall constituents and cell inclusions. (10)
- 2) Give the detailed note on plant hormones. (10)
- 3) Describe the pharmacognostic report of catechu. (10)

4. Short Answer Questions.

- 4A) Give the source, chemical constituents, identification tests for Agar. (5)
- 4B) Discuss various types of adulteration with examples. (5)
- 4C) Morphological classification of crude drugs with merits and demerits. (5)
- 4D) Give the source, method of preparation and uses of guar gum. (5)
- 4E) Pest and pest control methods. (5)
- 4F) Give the source, method of preparation and uses of Bees wax. (5)

5. Give Reasons for the Following:

- 5A) Acid value is determined for fixed oil. (2)
- 5B) Garbling of crude drugs is required. (2)
- 5C) Moisture content of the crude drugs should be minimum. (2)
- 5D) Senna is an Isobilateral Leaf. (2)
- 5E) Steam is passed in the preparation of Castor oil. (2)

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MANIPAL ACADEMY OF HIGHER EDUCATION

FIRST YEAR B. PHARM. DEGREE EXAMINATION - JULY 2018
SUBJECT: ENVIRONMENTAL SCIENCE AND ETHICS (PMA 107T)
(REVISED REGULATION 2014)

Tuesday, July 31, 2018 (10.00 - 13.00)

Answer ALL the questions.

Marks: 70

Duration: 180 mins.

Long Answer Questions:

- 1) Discuss the evolution and genesis of biodiversity. Explain ex-situ and in-situ conservation (10) of biodiversity, with suitable examples.
- 2) How can we move from unsustainable to sustainable development? What are the causes (10) of unsustainable development? Discuss climate change and its impact.
- 3) Discuss in brief any ten principles to be followed while conducting research using human (10) beings as participants.

4. Short Answer Questions:

- 4A) Discuss basic ideals of Utility theory. Add a note on criticisms of Utilitarianism. (5)
- 4B) Discuss strengths and weaknesses of Kantian Ethics. Add a note on Categorical Imperative. (5)
- 4C) Explain problems associated with Natural Resources? Add a note on role of individual in conservation of natural resources. (5)
- 4D) What is meant by Producers, Consumers and Decomposers as a part of ecosystem? (5) Discuss. Draw an ecosystem pyramid highlighting producers, consumers and decomposers.
- 4E) What are the causes and effects of Air pollution? Write a note on Disaster management. (5)
- 4F) Write a brief note on environmental issues such as equity, nutrition and health, and intellectual property rights and community biodiversity registers, linked to human rights. (5)

5. Give Reasons for the Following:

- 5A) Why do we need Moral Theory? (2)
- 5B) What is Cash Value as described in the context of Pragmatism? (2)
- 5C) Common Causes of Unethical Behavior. (2)
- 5D) Types of Virtues. (2)
- 5E) Productive/Aesthetic and Option value of nature useful to mankind. (2)