

Question Paper

Exam Date & Time: 23-Jun-2022 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

FIRST YEAR PHARM D DEGREE EXAMINATION - JUNE 2022
SUBJECT: PHA 1.1T - HUMAN ANATOMY AND PHYSIOLOGY
(REVISED REGULATION 2014)

Answer ALL questions.

Draw a labelled diagram wherever necessary.

Marks: 70

Duration: 180 mins.

Long Essay:

- 1) Explain the various factors that affect blood flow. Besides cardiac contractions, what mechanisms can facilitate venous return. (10)
(7+3 = 10 marks)
- 2) Describe the filtration membrane and the pressures that promote and oppose glomerular filtration. (10)
(4+6 = 10 marks)
- 3) Summarize the events of inhalation and exhalation with neat labelled diagrams. (10)
(4+4+2 = 10 marks)

4. Short Essay:

- 4A) Explain the components of connective tissue matrix. (5)
- 4B) Discuss the functions of liver. (5)
- 4C) Describe the functions of the following in uterine and ovarian cycles- GnRH, FSH, LH, estrogens and progesterone. (5)
- 4D) Outline the effects of glucocorticoids. (5)
- 4E) How does a nerve impulse elicit a muscle action potential at neuro-muscular junction? (5)
- 4F) Discuss the types of immunity. Explain the role of T and B lymphocytes in immunity. (5)

5. Give reasons for the following:

- 5A) Generally, people warm- up before exercise. (2)
- 5B) Cell does not burst, when a tiny needle is pushed through its plasma membrane. (2)
- 5C) Thalamus is considered as a "relay station" in the brain. (2)
- 5D) Skin helps in regulation of body temperature by two mechanisms. (2)
- 5E) Tissue hypoxia is one of the causes for polycythemia. (2)

Question Paper

Exam Date & Time: 01-Jul-2022 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

FIRST YEAR PHARM D DEGREE EXAMINATION - JUNE/JULY 2022
SUBJECT: PCE 1.2T - PHARMACEUTICS
(REVISED REGULATION 2014)

Marks: 70

Duration: 180 mins.

Answer all the questions.

Long Answer Questions.

- 1) Define prescription. Write in detail about the various parts of prescription. (10)
- 2) Define Galenicals. Explain Simple percolation process. (10)
- 3) Discuss physical instability of emulsions. (10)

4. Short Answer Questions.

- 4A) Write short notes on mouth washes. (5)
- 4B) Write short notes on medical dusting powder and surgical dusting powder. (5)
- 4C) Give the examples of official and non-official compendia's. Enlist the editions of Indian Pharmacopoeia (IP). (5)
- 4D) Differentiate lotions and liniments. (5)
- 4E) What is therapeutic incompatibility? How do you overcome it? (5)
- 4F) Prepare 500 mL of 70% alcohol from 85% and 10% alcohol. (5)

5. Give Reasons for the Following:

- 5A) Why emulsified Theobroma oil is preferred over Theobroma oil. (2)
- 5B) Tetracycline cannot be given to the patient along with calcium supplements. Why? (2)
- 5C) Why sedimentation rate is high in flocculated suspensions? (2)
- 5D) Non-aqueous vehicles are preferred in ear drops. Why? (2)
- 5E) Why weft and warps are required in crepe bandage? (2)

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Question Paper

Exam Date & Time: 29-Jun-2022 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

FIRST YEAR PHARM D DEGREE EXAMINATION - JUNE/JULY 2022
SUBJECT: PBT 1.3T - MEDICINAL BIOCHEMISTRY
(REVISED REGULATION 2014)

Answer all the questions.

Draw neat labeled diagrams wherever necessary.

Marks: 70

Duration: 180 mins.

Long Answer Questions.

- 1) Sketch the following pathways of carbohydrate metabolism: (10)
i) Bypass steps of gluconeogenesis from pyruvate
ii) Non-oxidative phase of HMP
- 2) Define β -oxidation. Explain the stages involved in β -oxidation of fatty acids and add a note on energetics involved in complete oxidation of Palmitic acid. (10)
- 3) Sketch the diagram of replication fork and explain the process of DNA replication in prokaryotes. Add a note on replication inhibitors. (10)

4. Short Answer Questions.

- 4A) Define enzyme inhibitors. Differentiate between competitive and non-competitive inhibition. (5)
- 4B) Give the enzyme defect, clinical manifestations, diagnosis and treatment associated with black urine disease. (5)
- 4C) Enlist the contributors and sketch the de novo synthesis of parent purine ribonucleotide. (5)
- 4D) Classify ELISA techniques and explain Sandwich ELISA. (5)
- 4E) Enlist the tests to assess renal function and elaborate on clearance tests. (5)
- 4F) Give a schematic representation of water intake and output. Write a brief note on the mechanisms of the body to regulate acid-base balance. (5)

5. Give reasons for the following.

- 5A) The serum and urine samples should be maintained at required temperature before they are sent for clinical testing. (2)
- 5B) Detoxification function status of the liver can be checked by a simple test. (2)
- 5C) Beta (β) subunit of the enzyme ATP synthase takes three conformations for the formation of ATP. (2)
- 5D) Serum total cholesterol can be estimated by Zak's method. (2)

5E)

Causes of albinism.

(2)

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Question Paper

Exam Date & Time: 27-Jun-2022 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

FIRST YEAR PHARM D DEGREE EXAMINATION - JUNE 2022
SUBJECT: PCH 1.4T - PHARMACEUTICAL ORGANIC CHEMISTRY
(REVISED REGULATION 2014)

Marks: 70

Duration: 180 mins.

Long Answer Questions.

- 1A) Write the mechanism of acetal formation. (5)
- 1B) Explain the mechanism of Friedal Craft's alkylation. (5)
- 2A) Explain the mechanism and evidences for E1 reaction. (5)
- 2B) Explain Sach Mohr theory with suitable illustrations. (5)
- 3) Give the method of preparation, assay and use of the following: (10)
- a) Chlorobutol.
- b) Glyceryl trinitrate.

4. Short Answer Questions.

- 4A) Explain the mechanism of Imine formation with suitable example. (5)
- 4B) Describe potential energy changes in the progress of chlorination of methane with energy diagrams. (5)
- 4C) Explain Cannizaro's reaction with mechanism. (5)
- 4D) Discuss the mechanism of formation of ethylene dibromide. (5)
- 4E) Explain the mechanism involved in the bromination of toluene. (5)
- 4F) Explain Bronsted Lowry and Lewis theory of acids and bases. (5)

5. Give Reasons for the Following:

- 5A) Cyclobutane is less reactive than cyclopropane. (2)
- 5B) As an atom size increases boiling point increases. (2)
- 5C) Formyl group of benzaldehyde is a strong meta directing deactivator. (2)
- 5D) Polar protic solvents are not suitable for S_N2 reactions. (2)
- 5E) Chlorination of methane is a chain reaction. (2)

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Question Paper

Exam Date & Time: 25-Jun-2022 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

FIRST YEAR PHARM D DEGREE EXAMINATION - JUNE 2022
SUBJECT: PCH 1.5T - PHARMACEUTICAL INORGANIC CHEMISTRY
(REVISED REGULATION 2014)

Marks: 70

Duration: 180 mins.

Answer all the questions.

Long Answer Questions:

- 1A) With reactions, explain the principle involved in the limit test for Arsenic. (5)
- 1B) Write the principle involved in the limit test for Iron. (5)
- 2A) Classify and define the types of solvents used in non-aqueous titrations. (3)
- 2B) Classify dental products. Give examples. (3)
- 2C) Give the preparation, assay and use of calcium carbonate. (4)
- 3A) Classify antacids? Give examples. (2)
- 3B) What are the qualities of ideal antacids? (3)
- 3C) Explain the preparation, assay and use of Magnesium carbonate. (5)

4. Short Answer Questions:

- 4A) Briefly explain the various steps involved in the gravimetric analysis. (5)
- 4B) Give the preparation, assay and use of ammonium chloride. (5)
- 4C) List out the qualities of a primary standard. (5)
- 4D) Explain the preparation, assay and use of Potassium permanganate. (5)
- 4E) Define: (a) Hydrogen error (b) Acid error (c) Alkali error (d) Hydroxyl error. (5)
- 4F) Give the preparation, assay and uses of oxygen. Explain the apparatus used in assay procedure with suitable diagram. (5)

5. Give Reasons for the Following:

- 5A) Ammonia-ammonium chloride buffer is added in complexometric titrations. (2)
- 5B) Conc. HNO_3 is added instead of dil. HNO_3 in the limit test for chlorides for the given sample of sodium bicarbonate. (2)
- 5C) Phenolphthalein is a preferred indicator for titrating a weak acid against a strong base. (2)
- 5D) Perchloric acid is diluted with acetic acid before the addition of acetic anhydride. (2)
- 5E) Starch indicator is added near the equivalence point in Iodometric titrations and not at the beginning (2)