Question Paper

Exam Date & Time: 26-Sep-2022 (10:00 AM - 01:00 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

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

Answer ALL questions.
Draw a labelled diagram wherever necessary.

Marks: 70 **Duration: 180 mins.**

1. **Long answer questions :**

1A)	Compare and contrast skeletal, cardiac and smooth muscles.	(10)
1B)	Discuss the functions of kidney. Explain the role of renin angiotensin aldosterone system (RAAS) for mineral and fluid homeostasis in the body.	(10)
1C)	Explain the formation, storage, release and feedback regulation of thyroid hormones. Discuss their functions.	(10)

2. **Short answer questions :**

2A)	With examples, explain any five types of transportation methods across the plasma membrane in the body.	(5)
2B)	Define hemostasis. Explain briefly about three stages of hemostasis.	(5)
2C)	Compare and contrast somatic and autonomic nervous systems.	(5)
2D)	Describe the anatomy of stomach. Discuss the process of secretion of gastric juice.	(5)
2E)	Define pulmonary ventilation. Explain the factors affecting it.	(5)
2F)	Discuss any five birth control measures.	(5)

3. **Give reasons for the followings :**

3A)	During whole blood transfusion, the number of WBCs in the donor's blood has to be minimized.	(2)
3B)	Exercise increases heart rate.	(2)
3C)	Glucose filtered by the glomerulus is completely reabsorbed in a normal person, but in a patient with diabetes mellitus, glucose is excreted in urine.	(2)
3D)	A small amount of methyl mercaptan is added to natural gas cylinder used for cooking.	(2)
3E)	Breathing plays an important role in maintaining the pH of body fluids.	(2)

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Question Paper

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

MANIPAL ACADEMY OF HIGHER EDUCATION

FIRST YEAR PHARM D DEGREE EXAMINATION - SEPTEMBER 2022
SUBJECT: PCE 1.2T - PHARMACEUTICS
(REVISED REGULATIONS 2014 - REPEATERS)

Marks: 70 **Duration: 180 mins.**

Answer all the questions.

1. **Long Answer Questions :**

1A)	Explain the evaluation of suppositories.	(10)
1B)	Define posology. Describe any nine factors influencing the dose of drugs.	(10)
1C)	Define emulsions. Discuss physical instability of emulsions.	(10)

2. **Short Answer Questions :**

2A)	In what proportions should a preparation containing 20% of drug be mixed with one containing 45% of drug to prepare a mixture of 30% drug strength?	(3)
i)		
ii)	Convert 90% v/v alcohol into proof strength.	(2)
2B)	With suitable examples write the uses of Insufflation, Dusting powder, Eutectic powder, Tooth powder and Effervescent powder.	(5)
2C)	Write a note on alkaloidal incompatibilities.	(5)
2D)	Define maceration. Give brief description on the deferent types of maceration.	(5)
2E)	Briefly explain Plaster of Paris bandages.	(5)
2F)	Define suspensions. Discuss briefly deflocculated suspensions.	(5)

3. **Give Reasons for the Following :**

3A)	Why tetracycline cannot be prescribe with calcium supplements?	(2)
3B)	Why chromic salt is used in the preparation of catgut?	(2)
3C)	Percolation with interruption method is more preferable compared to the simple percolation. Why?	(2)
3D)	Eutectic powders are dispensed with adsorbents. Why?	(2)
3E)	Why each country has its own Pharmacopoeia?	(2)

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Question Paper

Exam Date & Time: 28-Sep-2022 (10:00 AM - 01:00 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

FIRST YEAR PHARM D DEGREE EXAMINATION - SEPTEMBER 2022
SUBJECT: PBT 1.3T - MEDICINAL BIOCHEMISTRY
(REVISED REGULATIONS 2014)

Marks: 70 **Duration: 180 mins.**

Draw neat labeled diagrams wherever necessary

LONG ANSWER QUESTIONS :

1)	Sketch the reactions of anaerobic glycolysis. 'Aerobic glycolysis yields 6 or 8 ATPs while anaerobic only 2', justify.	(10)
2)	Write short notes on the following lipid abnormalities: i. Obesity ii. Fatty liver	(10)
3)	Describe the following with respect to the process of transcription: i. RNA Polymerase ii. Promoter iii.Termination of transcription iv. Post transcriptional modification	(10)

4. **SHORT ANSWER QUESTIONS :**

4A)	Write short notes on the following with respect to enzymes: i. Lock and Key model ii. Koshland model	(5)
4B)	Sketch the ornithine cycle.	(5)
4C)	Enlist the contributors and sketch the de novo synthesis of Uridine Mono Phosphate. Add a note on the conversion of ribonucleotide to deoxyribonucleotide.	(5)
4D)	Explain indirect ELISA and competitive ELISA.	(5)
4E)	Write a note on liver function tests for the detoxification and metabolic functions.	(5)
4F)	With the help of a neat labelled diagram explain chemiosmotic mechanism of ATP generation. Add a note on the enzyme complexes involved in this process.	(5)

5. **GIVE REASONS FOR THE FOLLOWING :**

5A)	Plasma membrane structure is considered 'fluid mosaic'.	(2)

5B)	Renin angiotensin system maintains electrolyte balance.	(2)
5C)	ISE can be used for the determination of Na+.	(2)
5D)	Arachidonic acid can fall under essential fatty acid.	(2)
5E)	Phenylalanine is both ketogenic and glucogenic.	(2)

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Question Paper

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

MANIPAL ACADEMY OF HIGHER EDUCATION

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

Marks: 70 **Duration: 180 mins.**

Answer all the questions.

1. **Long Answer Questions :**

1A)	Explain the mechanism of electrophilic addition to conjugated dienes.	(5)
i)		
ii)	Write a detailed mechanism for the Allylic bromination using NBS.	(5)
1B)	Explain with mechanism nitration of toluene. Predict the major products and justify your answer.	(10)
1C)	Define the following named reactions and discuss with an example the mechanism: i. benzoin condensation ii. Reformatsky reaction	(10)

2. **Short Answer Questions :**

2A)	What are Intermolecular forces? Explain with an example the hydrogen bonding.	(5)
2B)	Discuss in detail the resonance stabilization of allyl radical.	(5)
2C)	Give a method of preparation, principle involved in assay and medicinal uses of aspirin.	(5)
2D)	Differentiate S_N1 and S_N2 reactions.	(5)
2E)	Explain with an example the mechanism of any one method of Nucleophilic aromatic substitution reaction.	(5)
2F)	Write structures for the following IUPAC names i. Prop-2en-1ol ii. Propanal iii. Hex-4-en-2-one iv. Butane 1,4 diamine v. Imidazole (1 mark X 5 = 5 marks)	(5)

3. **Give Reasons for the Following :**

3A)	Methylbenzene is less reactive than aniline towards electrophilic aromatic substitution.	(2)

3B)	Benzene is not an unsaturated compound even after having three double bonds in its structure.	(2)
3C)	Peroxide effect is observed in the addition of HBr with propylene and not in case of addition of HI or HCl.	(2)
3D)	Intermolecular forces are weaker than intramolecular forces.	(2)
3E)	The boiling point of methane is much lower than that of Hydrogen fluoride.	(2)

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Question Paper

Exam Date & Time: 30-Sep-2022 (10:00 AM - 01:00 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

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

Marks: 70 **Duration: 180 mins.**

Answer all the questions.

1. **Long Answer Questions :**

1A)	What are the ideal characteristics of antimicrobial agents?	(2)
i)		
ii)	Explain protein precipitation and halogenation as a mechanism of action of antimicrobials.	(4)
iii)	Give the preparation and assay of boric acid.	(4)
1B)	Explain the three major physiological buffer systems in body.	(5)
i)		
ii)	Give the principle involved in the limit test for Sulphate.	(5)
1C)	Classify antacids. What are the advantages of non-systemic antacids over systemic antacids?	(5)
i)		
ii)	Explain the three acid base theories with their limitations.	(5)

2. **Short Answer Questions :**

2A)	Define a primary standard giving two examples. Classify volumetric methods and briefly explain each method.	(5)
2B)	Give the assay of sodium benzoate along with the reactions involved.	(5)
2C)	Define accuracy and precision. Explain the different types of errors with example.	(5)
2D)	Explain the preparation and standardization of 0.1 N potassium permanganate along with the reactions involved.	(5)
2E)	Explain the preparation, assay and use of Sodium thiosulphate.	(5)
2F)	Define Essential and trace elements. Explain the physiological roles of Iron and copper.	(5)

3. **Give Reasons for the Following :**

3A)	Phenolphthalein is not a suitable indicator for titrating a weak base against a strong acid.	(2)

3B)	Dilute nitric acid is used in the limit test for chlorides.	(2)
3C)	Quenching gas is required for the working of Geiger Muller Counter.	(2)
3D)	Potassium iodide is added in the iodometric titration.	(2)
3E)	Nitrobenzene is used in the modified Volhard's method.	(2)

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