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BSc-MSc Chemistry, Semester-III Examination 2023
Paper Name: Pharmaceutical Chemistry
Paper Code: BCH-SEC03

Time: 1.5 hours

Maximum Marks: 37

Note: This paper has 3 sections A, B, and C, Attempt all the three sections

Section A: Answer all the questions; **Section B:** Answer any 2 out of 4; **Section C:** Answer all the questions, each question has an internal choice

Abbreviations Used

CLO- Course Learning Outcome, PLO- Program learning Outcome, BTL- Bloom Taxonomy Level: BT level 1-Remember; BT level 2-Understand; BT level 3-Apply; BT level 4-Analyse; BT level 5-Evaluate, BT level 6-Create

SECTION A

Very Short Type Questions (Attempt all questions)

(7x1=7Marks)

Q. No	Question	BTL	CLO	PLO
A1	What are antipyretics and analgesics?	2	2-3	2
A2	Define: Synthons and FGI	1	1-2	2
A3	What is the importance of p-Amino benzoic acid?	1	3-4	1
A4	Give two examples of Sulpha drug	1	1-2	1
A5	Draw the structure of AZT. Highlighting the 3' and 5' notation of the sugar in AZT	2	3-5	3
A6	Draw the structure of Corrin ring. And state the oxidation number of the metal centre in Vit B12	2	2-3	3
A7	Why β -lactam is more reactive than γ and δ lactam.	2	1-3	4

SECTION B

Long Type questions (Attempt any two out four)

(2x7.5=15 marks)

Q. No	Question	BTL	CLO	PLO
B1.	a) Define fermentation. b) Explain the production of Penicillin and citric acid using Fermentation Process	1-4	5-6	5
B2.	a) Draw the most suitable Retrosynthesis of Aspirin b) Explain the mechanism of action of Aspirin	1-4	2-5	5

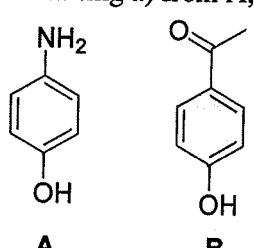
PTO

- | | | | | |
|-----|--|-----|-----|---|
| B3. | Differentiate between the Voot and Hoetsch Process of Ibuprofen synthesis. | 5/6 | 2-4 | 4 |
| B4. | Who gave the first synthesis of Vitamin B12. Draw the structure of Vitamin B12 highlighting the structural features. | 5,6 | 2-3 | 3 |

SECTION C

Short Type questions (Attempt all questions)

(5x3=15 marks)

Q. No	Question	BTL	CLO	PLO
C1	Synthesize paracetamol starting a) from A; b) from B	3,4	3,6	2,4
	 A B			
	OR			
	Explain the synthesis and mechanism of action of chloramphenicol	3/4	4-5	3
C2	Differentiate between the porphyrin and corrin ring.	5/6	5	5/6
	OR			
	Why barbituric acid is less potent than phenobarbital? Also mention their synthesis.	5,6	3	6
C3	How the following compound are produced using the fermentation process a) Ethanol; and b) Vitamin C	5,6	4	5/6
	OR			
	How the following compound are produced using the fermentation process a) Vitamin B2; and b) Lysine	2,3	1,2	4-7
C4	Explain the synthesis and mechanism of action of the following a) Dapsone; b) Glycerol trinitrate	3,4	1,2	4-7
	OR			
	Explain the mechanism of action of the paracetamol and correlate it with Aspirin	3,4	5	3
C5	Give the synthesis of AZT and Diazepam and state which is nucleoside-based drug.	5,6	4-6	5
	OR			
	Give the synthesis of Acyclovir and briefly discuss its mechanism of action	5,6	4-6	5

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