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SECOND B.Pharm. DEGREE EXAMINATION

(Old Regulations)

Paper II -- ADVANCED PHARMACEUTICAL
ORGANIC CHEMISTRY

Time : Three hours Maximum : 100

Answer any SIX questions.

Question No. 1 and 5 are compulsory.

Give chemical equations wherever necessary.

1. (a) Discuss the synthesis and reactions of pyridin
- (b) How is Thiazole synthesised? Give its im-
reactions and derivative of pharmaceutical importance.
- (c) Name with structures the medicinally
compounds of acridine. (6)
2. (a) How is phenothiazine synthesised? How
numbering done? Name important derivatives of phen-
and uses.
- (b) How will you synthesise acridine? Give
reactions.
- (c) Name medicinally useful compounds of Quinc
their uses. (6)

(a) Give the synthesis of Indole and its important reaction
derivs.

(b) Give the electronic structures and reaction behaviours

(i) Pyrrole (ii) Pyrazole (iii) Imidazole. (10 + 6)

Write short notes on : (6 + 6 + 4)

(a) Mechanism of

(i) Bischler-Napierulski reaction.

(ii) Fischer-Indole synthesis.

(b) Importance of Molecular symmetry in organic
compounds.

(c) Classify polynuclear hydrocarbons with examples.

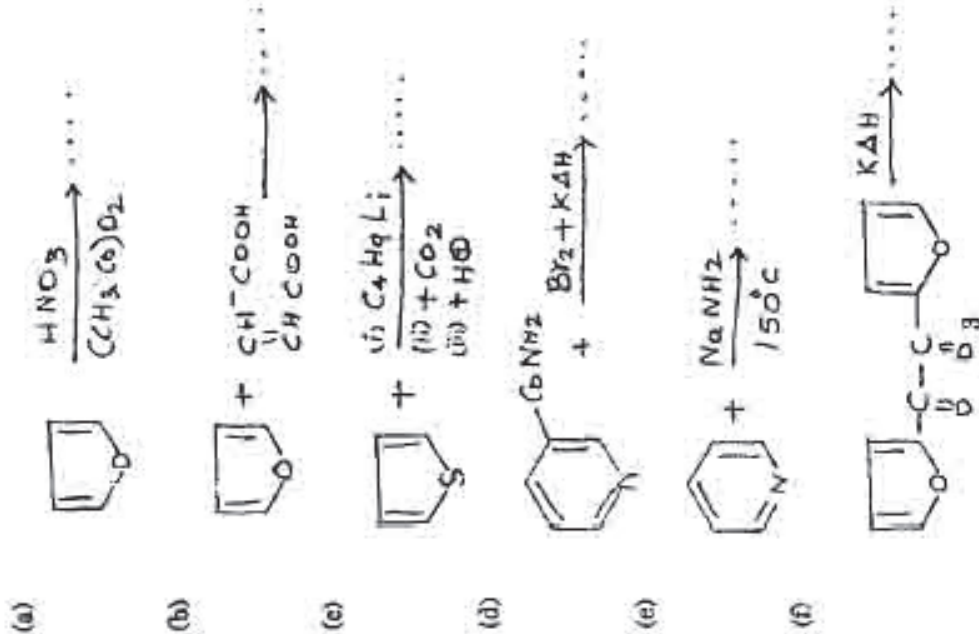
(b) What are triphenyl methane dyes? How will you
synthesize (i) Malachite green (ii) Rosaniline. Give their uses.

(c) Give the method of preparation and reactions of
naphthalene.

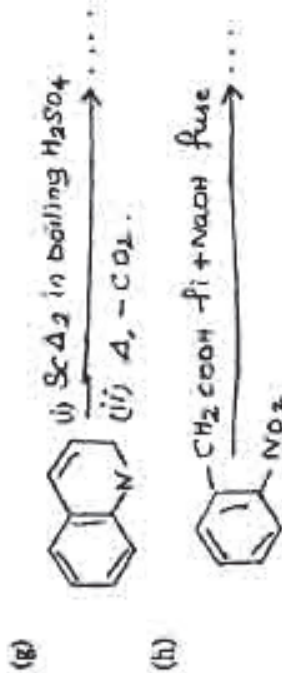
(c) Give structures and uses of (i) methyl violet (ii) crystal
et (iii) acetaminophenone. (3 + 8 + 4 + 3)

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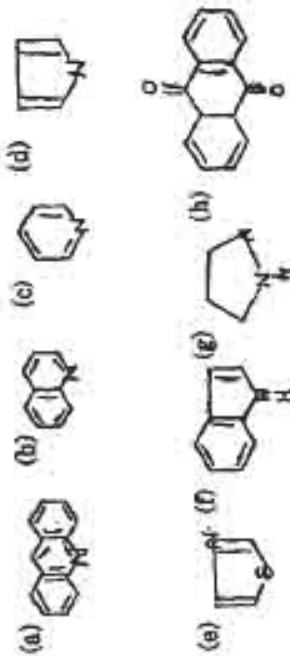
6. Name the reaction products with conditions : (8 x 2 = 16)



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7. (a) Discuss the chemistry of amines and oximes and their importance in synthetic chemistry with example.
 (b) Explain the rules of nomenclature of isomers.
 (c) What is optical activity? Discuss the molecular structural requirements so that a compound shows optical activity. (8 + 8)
 8. Name one compound each for the following basic nuclei showing medicinal uses for each one of them. (8 x 2 = 16)



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SECOND B.Pharm. DEGREE EXAMINATION.

(New Regulations)

Paper II -- ADVANCED PHARMACEUTICAL ORGANIC
CHEMISTRY

Time : Three hours Maximum : 90 marks

Two and a half hours Sections A and B : 60 marks
for Sections A and B

Answer Sections A and B in separate answer books.

Answer Section C in the answer sheet provided.

SECTION A -- (2 x 15 = 30 marks)

Answer any TWO questions.

1. What are enantiomers? What are dia-stereomers? Explain clearly the phenomena with suitable examples. Explain the conditions that are required for optical activity.
2. Outline the synthetic methods for the following heterocycles. Give two examples of medicinally useful compounds for each group.

- (a) Thiazole.
- (b) Quinoline.
- (c) Acridine.

3. What do you understand by the term restricted rotation? How does this give rise to geometric isomerism? Give all the possible examples to explain the same. Explain the stereochemistry of fused ring compounds.

4. What is aromaticity? Compare the aromaticities of pyrrole, thiophene, furan, pyron and pyridine. Discuss the electrophilic substitution reactions and nucleophilic substitution reactions with regard to indole and pyrrole.

SECTION B -- (6 x 5 = 30 marks)

Answer any SIX questions.

5. Give three reactions each for the following :

- (a) Isoquinoline.
- (b) Pyrazole.
- (c) Phenothiazine.

6. Give the methods of preparation for the following :

- (a) Anthracene.
- (b) Naphthalene.

Give two reactions for each class of compounds.

7. Write notes on the following (any TWO) :

- (a) Asymmetric synthesis.
- (b) Anti and skew conformations.
- (c) Walden inversion.

8. Explain syn and anti forms with suitable example. How do you establish their structures?

9. Describe different methods of resolution of a racemic mixture.

10. Give the structures of boat and chair forms of cyclohexane. Discuss the stabilities of the different conformational isomers of cyclohexane with the help of energy diagram and Newman's projection formula.

11. Describe the synthesis of

- (a) Pyrimidine.
- (b) Imidazole.

12. Write a note on sequence rules to decide R & S configurations.

13. How did taking the configuration of glyceraldehyde molecule help in the configurations of carbohydrates? Explain.