

UNIVERSITY OF JAFFNA, SRI LANKA
B.PHARM FOURTH YEAR SECOND SEMESTER EXAMINATION—JANUARY 2013
PHARMACEUTICAL CHEMISTRYV - PHACH4201 (Old Syllabus)

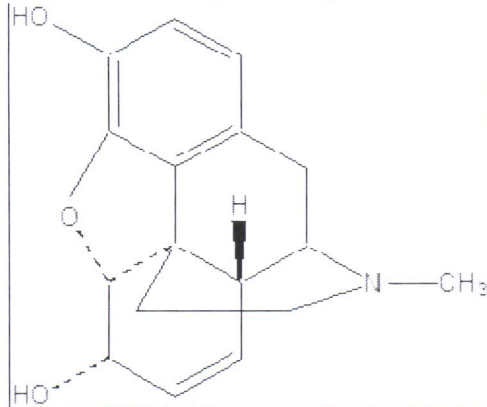
Paper II

Date: 09.01.2013

Time: 02 hours

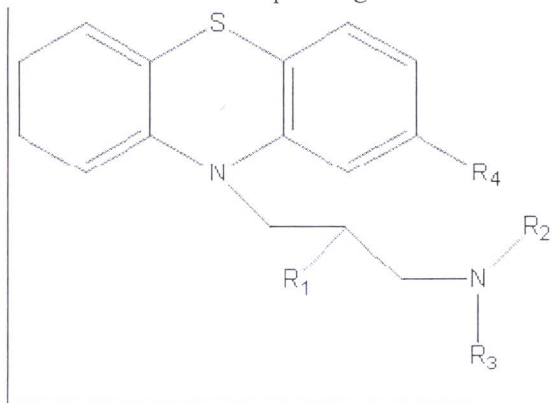
ANSWER ALL THE EIGHT QUESTIONS

1. Structure of Morphine is given below.



- 1.1. Discuss the structure-activity relationship of morphine. (60 Marks)
- 1.2. Give examples for 4 – phenyl piperidine analogs. (20Marks)
- 1.3. Draw the structure for one the drugs mention in the 1.2. (20 Marks)

2. Structure of a neuroleptic is given below.



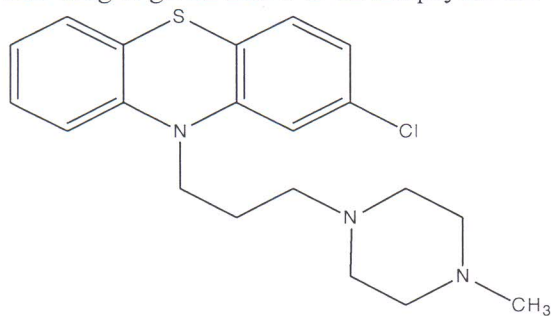
- 2.1. Discuss the structure-activityof the above drug for neuroleptic activity. (40 Marks)
- 2.2. List 05 examples of phenothiazine analogs. (20 Marks)
- 2.3. Give the synthesis of haloperidol. (40 Marks)

3.

- 3.1. Sketch out the synthesis of phenindione . (35 Marks)
- 3.2. Briefly describe the biological activity of coumarins in relation to its anti-coagulant activity. (30 Marks)
- 3.3. List 03 examples for coumarin derivatives. (15 Marks)
- 3.4. Give 02 examples with structure for anti-platelet drugs. (20 Marks)

- 4.
- 4.1. Describe the structure-activity relationship of benzodiazepines in relation to their anxiolytic activity. (40 Marks)
 - 4.2. Give the synthesis of diazepam. (40 Marks)
 - 4.3. List the medical uses of benzodiazepines. (20 Marks)

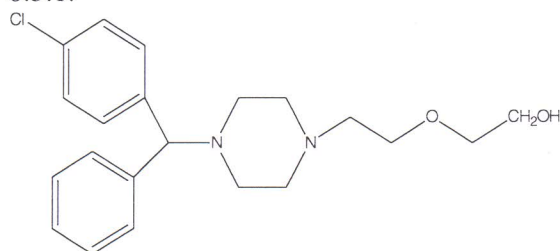
5. The drug A given below is an antipsychotic.



- 5.1. Give the chemical classification of antipsychotic agents. (20 Marks)
- 5.2. Give the IUPAC name and the chemical name of drug A. (10 Marks)
- 5.3. Mention the important groups that are responsible for antipsychotic activity of drug A. (30 Marks)
- 5.4. Sketch out the route of synthesis of drug 'A' using 2-chloro phenothiazine as the starting material. (40 Marks)

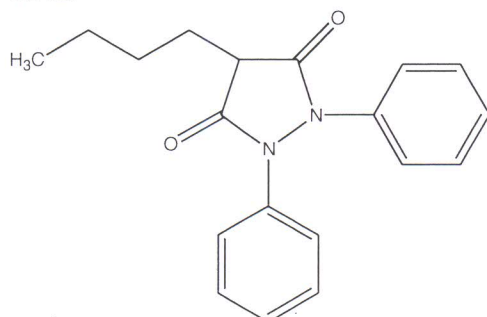
- 6.
- 6.1. What is the quantitative structure-activity relationship (QSAR) of a drug? (30 Marks)
 - 6.2. List the chemical and physical parameters that are used in the study of quantitative structure-activity relationship (QSAR) of a drug. (20 Marks)
 - 6.3. Explain the metabolic changes of the following drugs.

6.3.1.



(20 Marks)

6.3.2.



(30 Marks)

7.

7.1.

7.1.1. Give the chemical classification of medicinal dyes. (25Marks)

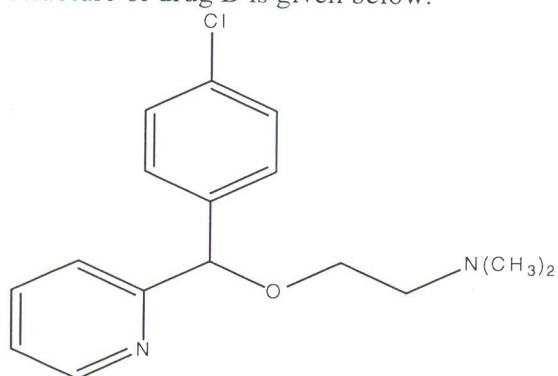
7.1.2. Give the steps of the chemical reactions of the triphenylmethane derivatives form colour. (25 Marks)

7.2.

7.2.1. What are prodrugs? (10 Marks)

7.2.2. Give the biological application of the prodrugs with example. (40 Marks)

8. Structure of drug B is given below.



8.1. Write the chemical name of drug B. (10 Marks)

8.2. Describe the structure-activity relationship studies in order to increase its activity. (30 Marks)

8.3. What structural modifications to be done to synthesis of following analogs. Give 02 examples for each analog.

8.3.1. Ethylenediamines. (20 Marks)

8.3.2. Propylamines. (20 Marks)

8.3.3. Piperazines. (20 Marks)