

UNIVERSITY OF SWAZILAND
FINAL EXAMINATION – 2015, November

TITLE OF PAPER : Chemotherapy

COURSE NUMBER : C601

TIME : Three Hours

INSTRUCTIONS :

1. Answer any two questions in Section A (Total 50 marks)
2. Answer any two questions in Section B (Total 50 marks)
3. All questions carry equal points

NB: all questions are to be answered in a separate answer sheet

Section A.

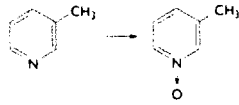
- 1 Discuss the mechanisms and routes of aromatic hydroxylation.
 - a. What are the effects of electron donating and withdrawing groups in aromatic hydroxylation?(5)
 - b. What type of Carbon in a drug molecule cannot be hydroxylated? Why?(7)
 - c. What is allylic and benzylic hydroxylation? Show drug examples.(7)
 - d. What is NIH shift? Explain your results with an example of a drug. (6)

- 2 The organs kidney, muscle tissue, intestinal wall, liver, lungs and skin are involved in drug transformation. Which organ is most relevant for drug transformation and give reasons for your choice? Put the organs in order of their involvement in drug transformation. (25)

- 3 What are pro-drugs and ante-drugs? What are the advantages and disadvantages in relation to bioavailability? Give relevant examples. (25)

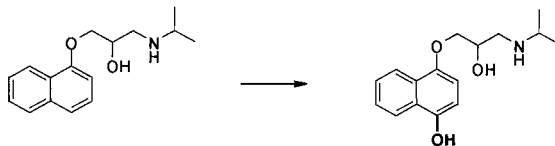
Section B

4. Why steroids are important physiologically and what is their role in body building and how are steroids based drugs metabolized in human body? Give appropriate examples with steroid based drugs metabolism.(25)
5. a) What type of reaction is the following reactions? (7)



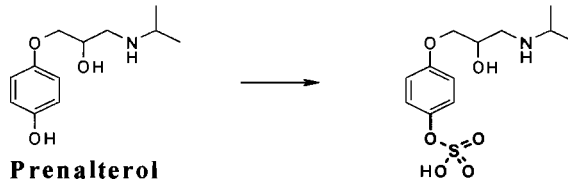
what is this reaction and give an example of a drug that undergoes this reaction?

- b) What type of reaction is the one bellow and give examples of drugs undergoing this reaction in the human body? (8)



Propranolol
(β -blocker)

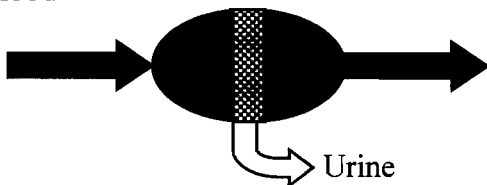
- c) What type of reaction is the one bellow and support your answer with an example? (10)



Prenalterol
(β -blocker)

6. a) Explain the mechanism of renal excretion of drugs?(12)

Blood



- b) What are the structural features of the most widely used anti-cancer agents, their major therapeutic uses and dose-limiting toxicities, and their mechanisms of action?(13)