



CRAWFORD UNIVERSITY
COLLEGE OF NATURAL AND APPLIED SCIENCES
DEPARTMENT OF INDUSTRIAL CHEMISTRY
HARMATTAN EXAMINATION 2012/2013

COURSE CODE: ICH 431

COURSE TITLE: BASIC CONCEPTS OF DRUG DESIGN

UNITS: 2

TIME ALLOWED: 2HRS

DATE: FEBRUARY, 2014

INSTRUCTIONS: ANSWER ANY FOUR (4) QUESTIONS.

- 1(i) Compare the chemical structure of phenacetin (Phensic^(R)) and paracetamol (Panadol^(R)).
(ii) Why is paracetamol a safer drug to use for analgesic purpose than aspirin?
(iii) What is the mode of action of analgesics?
(iv) How will you synthesize alkyl barbiturates?
- 2(i) What is drug design and development?
(ii) List the procedures adopted in searching for a 'lead' substances in an effort to design a new drug.
(iii) List the approaches to drug design
(iv) Explain the modes of action of chemical contraceptives.
- 3(i) Describe structural activity relationship in penicillin
(ii) Describe the general method of commercial production of penicillin
(iii) Write the general structure of clavulanic acid.
(iv) Explain the mode of action of penicillin.
- 4(i) What do you understand by the term 'biotransformation of drug'?
(ii) Give the activity of the final product, the type of reaction; the biotransformation of the following drug: Levodopa, iproniazid and codeine.
(iii) What are the factors influencing drug metabolism?
- 5(i) Outline seven (7) ways of classifying drugs with examples.
(ii) Majority of drugs are classified into the first two classes; give five (5) differences between these two classes.
(iii) List all the classes of anti-malaria drug that you know.
(iv) What are steroids? Give the structure of steroidal hydrocarbon with one example.