



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2011/2012

**SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR
OF SCIENCE IN BIOCHEMISTRY AND BIOTECHNOLOGY**

SBC 307: PHARMACOGNOSY

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DATE: THURSDAY 29TH MARCH 2012 TIME: 2.00 P.M. – 4.00 P.M.

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INSTRUCTIONS

**ANSWER ALL QUESTIONS IN SECTIONS "A" AND "B" (COMPULSORY) AND ANY
OTHER TWO QUESTIONS IN SECTION C**

(All answers MUST be written in the Examination Booklet)

SECTION A: Answer ALL the Questions (20 marks)

1. List any five factors that affect the quality and quantity of bioactive constituents in medicinal plants. (5 marks)
 - i) _____
 - ii) _____
 - iii) _____
 - iv) _____
 - v) _____

2. List any five pharmacological activities of crude, semi-pure and pure constituents of natural drugs that act on human cardiovascular system. (5 marks)
 - i) _____
 - ii) _____
 - iii) _____
 - iv) _____
 - v) _____

3. Chemically distinct populations within a species with similar phenotypes but different genotypes are termed as _____. (1 marks)
4. Mother Nature has continuously provided biologically active compounds which are used either as drugs in their native forms or serve as templates in chemical synthesis of more potent medicines for use in allopathic system of medicine. List three diseases that have benefited immensely from plant-derived drugs. For each of the disease, name the drug and the source plant. (9 marks)

	<u>Disease name</u>	<u>Drug name</u>	<u>Source-plant name</u>
i)	_____	_____	_____
ii)	_____	_____	_____
iii)	_____	_____	_____

SECTION B: Answer ALL the Questions (30 marks)

- 1 a). Briefly explain the term “pharmacognosy”. (2 marks)
- b). Explain the three factors that can contribute to “polyvalence” in phytomedicines. (3 marks)
2. Explain the five fields of contemporary study of pharmacognosy. (5 marks)
3. Explain the five approaches used in classification of natural drugs. (5 marks)
4. Briefly explain the following techniques used in modern discovery of novel medicines in pharmaceutical industry.
 - (i) High throughput screening. (3 marks)
 - (ii) Combinatorial chemistry. (2 marks)
5. Explain the difference of the following paired terms as used in phytomedicines.
 - i) Synergism and polyvalence
 - ii) Antagonism and additive effect (5 marks)
6. What are the advantages of cultivated medicinal plants over the wild ones as sources for phytomedicines? (5 marks)

SECTION C: Answer ANY TWO Questions (20 marks)

1. Briefly explain various modern techniques of improving the quality and quantity of bioactive constituents in medicinal plants. (10 marks)

2. Explain the steps involved in the process of modern drug discovery based on ethnopharmacology and explain the advantages of using this approach. (10 marks)

3. Briefly explain the three biological tests that are included in a screening architecture of natural medicines, and list the nature of information that Can be deduced from each test. (10 marks)