



UNIVERSITY EXAMINATIONS

**EXAMINATION FOR THE AWARD OF DEGREE OF MASTERS OF SCIENCE
IN BIOCHEMISTRY**

BIOC 852: PHARMACOLOGY AND PHYTOMEDICINE

STREAMS:

TIME: 2 HOURS

DAY/DATE: FRIDAY 12/4/2024

11.30A.M. –1.30 P.M.

INSTRUCTIONS: Answer ANY FOUR Questions

QUESTION ONE (20 marks)

- (a) Describe the scope of pharmacognosy and phytomedicine. (10 marks)
- (b) Discuss FIVE categories of drugs derived from plants and give examples of specific plants, active components and therapeutic indications in each case. (10 marks)

QUESTION TWO (20 marks)

- (a) Explain the merits of herbal plants cultivation. (10 marks)
- (b) Explain the basic structure of flavonoids (6 marks)
- (c) Highlight FOUR pharmacological effects of chalcones and dihydrochalcones(4 marks)

QUESTION THREE (20 marks)

- (a) Demonstrate using a suitable diagram, the biochemical metabolism of phenylpropanoids products in plants. (10 marks)
- (b) Explain any FIVE reasons for intentional herbal drug adulterations. (10 marks)

QUESTION FOUR (20 marks)

- (a) By use of structures, describe the biosynthesis of caffeine in plants. (10 marks)
- (b) Describe various parameters determined in physical evaluation of herbal drug formulations. (10 marks)

QUESTION FIVE (20 marks)

- (a) With a use of suitable diagram, demonstrate the acetate/mevalonate pathway involved in the formation of isopentenyl pyrophosphate, the basic 4 carbon unit terpenoids biosynthesis. (10 marks)
- (b) Explain any FIVE biological screening methods for centrally acting analgesic compounds. (10 marks)
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