



UNIVERSITY OF RUHUNA – FACULTY OF ALLIED HEALTH SCIENCES
DEPARTMENT OF PHARMACY
THIRD BPHARM PART I EXAMINATION –OCTOBER/NOVEMBER 2019
PH 3125 PHARMACOGNOSY II (SEO)

TIME: THREE HOURS

INSTRUCTIONS

- Answer **all** questions in Part A,B,C,D,E and F in seperate booklets provided.
- No paper should be removed from the examination hall.
- Do not use any correction fluid.
- Use illustrations where necessary.

Part A

1.

- 1.1. Describe the associated problems of herbal/Ayurveda medicine in Sri Lanka. (20 marks)
- 1.2. Write the process of proper identification of medicinal plants. (30 marks)
- 1.3. Write the main methods for organoleptic evaluation of herbal drugs. (04 marks)
- 1.4. Write the main methods for the standardization of herbal drugs in the commercial market. (16 marks)
- 1.5. Write the different ways of industrial utilization of medicinal plants. (30 marks)



Part B

2.

- 2.1. Briefly explain benefits of plant tissue culture. (25 marks)
- 2.2. Briefly explain the importance of somaclonal variations in plant tissue culture. (25 marks)
- 2.3. Briefly explain how to minimize contaminations in plant tissue culture. (25 marks)
- 2.4. What are the factors affecting on the production of secondary metabolites under in vitro conditions? (25 marks)

Part C

3.

- 3.1. Mention **two** types of immunoassay. (10 marks)
- 3.2. Describe briefly the competitive design of immunoassays. (40 marks)

Part D

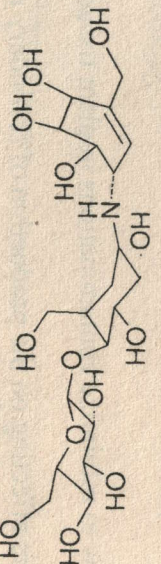
- 3.3. Briefly explain the following;
- 3.3.1. Measures can be taken to improve the medicinal plant sector in Sri Lanka. (18 marks)
- 3.3.2. Good collection practices for medicinal plants. (16 marks)
- 3.3.3. Factors to be considered in incorporating herbal medicine into national health system. (16 marks)

Part E

- 4.
- 4.1. List **five** examples for biologics which are used in clinical practice. (15 marks)
- 4.2. State **five** sources for the production of clinically important biologics. (15 marks)
- 4.3. State **four** advantages of information-driven selection of herbs or plants in drug discovery. (10 marks)
- 4.4. Briefly discuss the followings.
- 4.4.1. Killed or inactivated vaccines. (30 marks)
- 4.4.2. Importance of clinical pharmacognosy. (30 marks)

Part F

- 5.
- 5.1 Pesticides are mainly used to protect crops and agricultural products. (06 marks)
- 5.1.1 List **four** major classes of pesticides used in agriculture.. (06 marks)
- 5.1.2 What are the major routes of administration of pesticides to our body? (05 marks)
- 5.1.3 Briefly explain the involvement of natural products in pesticide industry. (15 marks)
- 5.2 Structure of the fungicide, validamycin A is shown below. (15 marks)



- 5.2.1 What is the source of validamycin A. (05 marks)
- 5.2.2 Validamycin A is a prodrug. Name the active compound of validamycin A and draw the structure of it. (10 marks)
- 5.2.3 What is the cellular target of the product you mentioned in 5.2.2? (05 marks)
- 5.2.4 Briefly explain how validamycin A shows a good biological selectivity. (10 marks)
- 5.2.5 List **two** other natural fungicides used in crop protection. (04 marks)

5.3 Complete the following table.

(40 marks)

Enzyme	Type	Source	Pharmaceutical use
5.3.1 Papain			
5.3.2 Seratiopeptidase			
5.3.3 Urokinase			
5.3.4 Collagenase			
5.3.5 Hyaluronidase			

06.

6.1 The marine environment provides an array of structurally unique and diverse constituents with diverse pharmacological activities.

6.1.1 What is the importance of having secondary metabolites in marine organisms?

(15 marks)

6.1.2 Briefly describe the factors which determine the occurrence and concentration of specific secondary metabolites in marine organisms.

(30 marks)

6.1.3 What is a "ROV" and briefly explain how it assists the collection of marine organisms.

(15 marks)

6.2 Answer the following questions.

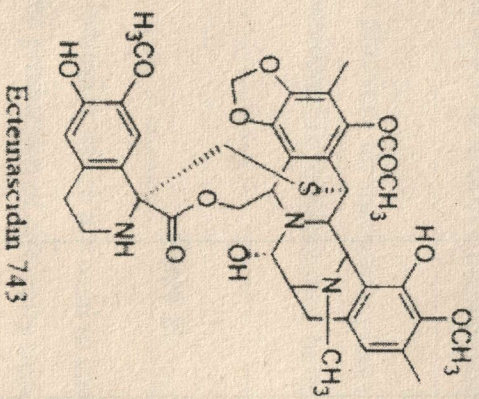
6.2.1 Identify the following marine organism.

(05 marks)



6.2.2 What is the drug derived from this organism and indicate the pharmacological activity of the drug you named? (05 marks)

6.3 Structure of Ecteinascidin-743, drug which is derived from α marine organism is shown below.



6.3.1 What is the source of this drug?

(05 marks)

6.3.2 Indicate the trade name of Ecteinascidin-743 and its clinical use.

(10 marks)

6.4 Following flow chart displays the essential steps in modern drug discovery approaches. Fill in the blanks. (15 marks)

