



UNIVERSITY OF RUHUNA – FACULTY OF ALLIED HEALTH SCIENCES

DEPARTMENT OF PHARMACY

THIRD BPHARM PART I EXAMINATION - JUNE 2022

PH 3125 PHARMACOGNOSY II – SEQ

TIME: THREE HOURS

INSTRUCTIONS

- Answer all questions.
- No paper should be removed from the examination hall.
- Do not use any correction fluid.
- Use illustrations where necessary.

PART A

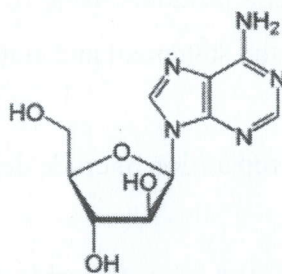
01.

New drugs with improved characteristics are needed to be discovered. Drug discovery and development process consists of multiple steps regardless of their origin; natural or synthetic.

- 1.1 State five characteristics that you expect from a new drug. *(15 marks)*
- 1.2 Briefly explain why preclinical studies are mandatory to be conducted before a clinical trial of a new drug candidate. *(25 marks)*
- 1.3 Explain phases of clinical trial of a new drug candidate. *(60 marks)*

02.

2.1 Structure given below is a naturally occurring drug.



- 2.1.1 Mention the name of this drug and give one indication of this drug. *(15 marks)*
- 2.1.2 What is the **scientific name** of the source organism of this drug? *(10 marks)*
- 2.2 According to the Enzyme Commission (EC), enzymes are classified in to seven types.
 - 2.2.1 Mention five (05) types of enzymes out of seven types of enzymes. *(25 marks)*
 - 2.2.2 List five (05) therapeutic uses of enzymes with one example for each. *(30 marks)*

2.3 List one major toxic compound present in following plants.

(20 marks)

2.3.1 *Datura stramonium*

2.3.2 Castor oil plant

2.3.3 *Gloriosa superba*

2.3.4 Yellow oleander (Kaneru)

PART B

03.

3.1 Name major constituents of plant tissue culture media and respective role of each component. (20 marks)

3.2 Briefly explain the role of plant growth regulators on plant morphogenesis in plant tissue culture. (20 marks)

3.3 Write five (05) functions of secondary metabolic products. (10 marks)

3.4 Briefly/describe four (04) main methods used to classify medicinal and aromatic plants. (20 marks)

3.5 Briefly explain the application/s and advantage/s of a bioreactor in ayurvedic medicine industry. (30 marks)

PART C

04.

4.1 Briefly describe the types of sources of herbs and their advantages in herbal/Ayurveda preparations in Sri Lanka. (10 marks)

4.2 "Standardization of herbal/Ayurveda products using different methods in the commercial market is a good practice". Justify the statement and state the examples where required. (30 marks)

4.3 What are the steps involved in the preparation of crude drugs for the commercial drug market in Sri Lanka? (30 marks)

4.4 Describe the importance of using Good Manufacturing Practices (GMP) in Ayurveda drug production. Examples should be written where required. (20 marks)

4.5 Briefly explain preparation of the pharmacopeial monograph for crude drugs and its importance for herbal drug industry. (10 marks)

PART D

05.

5.1 "Biological products may be produced through biotechnology in a living system, such as a microorganism, plant cell, or animal cell."

5.1.1 Define the term "Xenotransplantation". (10 marks)

5.1.2 List five (05) limitations related to biological products. (15 marks)

5.1.3 Write three (03) methods used to attenuate viruses for vaccine production. (15 marks)

5.1.4 Explain the production process of monoclonal antibodies. (30 marks)

5.2 "An immunomodulator is any drug or substance which can stimulate, suppress or modulate any of the components of the immune system".

5.2.1 State five (05) plants with immunomodulatory activity. (10 marks)

5.2.2 Briefly describe immunoassay methods used in pharmaceutical analysis. (20 marks)

PART E

06.

6.1

6.1.1 Botanically identify four (04) medicinal plants and their parts used for medicinal purposes. (08 marks)

6.1.2 Explain in brief,

a) Methods that can be adapted to sustainable utilization of medicinal plants. (10 marks)

b) *In vitro* conservation of medicinal plants. (16 marks)

6.1.3 Give four (04) suggestions to improve herbal drug exports from Sri Lanka. (16 marks)

PART F

6.2

6.2.1 Write the common name and two (02) therapeutic uses of the following medicinal plants. (20 marks)

Botanical Name	Common Name	Therapeutic Uses
a. <i>Allium sativum</i>
b. <i>Curcuma longa</i>
c. <i>Murraya koenigii</i>
d. <i>Phyllanthus emblica</i>
e. <i>Zingiber officinale</i>

6.2.2 State four (04) issues that encounter when searching herbal drugs as sources for drug discovery. (16 marks)

6.2.3 Name two (02) drugs originating from traditional medicinal plants. (04 marks)

6.2.4 Write two (02) applications of clinical pharmacognosy. (10 marks)

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