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UNIVERSITY OF RUHUNA – FACULTY OF ALLIED HEALTH SCIENCES

DEPARTMENT OF PHARMACY

THIRD BPHARM PART I EXAMINATION – JULY 2018

PH 3125 PHARMACOGNOSY II (SEQ)

TIME: THREE HOURS

INSTRUCTIONS

- There are six (06) questions in parts A, B, C, D, E and F of the paper.
- Answer **each part** in a separate booklet provided.
- Do not use any correction fluid.
- Marks will be deducted for illegible handwriting.

PART A

1. Answer all parts.

- 1.1. Write the steps in the process of proper identification of medicinal plants. **(10 marks)**
- 1.2.
- 1.2.1. Describe briefly the uses of crude drugs in Ayurveda medicine. **(10 marks)**
- 1.2.2. Describe the main methods used
- 1.2.2.1. for the preparation and evaluation of “crude drugs” for the commercial market. **(10 marks)**
- 1.2.2.2. for the standardization of herbal drugs in the commercial market. **(10 marks)**
- 1.3. List the issues on safety and quality control of herbal medicines. **(05 marks)**
- 1.4. Write the essential components of individual herbal monograph. **(05 marks)**

PART B

1.5. Fill the blanks given in the table. **(12 marks)**

Botanical name	Common name	Principle phytochemical constituent
<i>Withania somnifera</i>	1.5.1.....	Alkaloid
1.5.2.....	Liquorice	1.5.3.....
<i>Allium sativum</i>	1.5.4.....	1.5.5.....
<i>Panax japonica</i>	1.5.6.....	Glycoside

1.6.

- 1.6.1. Define the term “immunoassays”. **(08 marks)**
- 1.6.2. Explain the types of immunoassays used in the analysis of a pharmaceutical product. **(30 marks)**

PART C

2. Answer all parts.
- 2.1. Distinguish between *in vitro* gene banks and *in vivo* gene banks. (20 marks)
- 2.2. Briefly discuss
- 2.2.1. the major causes of somaclonal variations in plant cells and tissue cultures. (20 marks)
- 2.2.2. the practical applications of above causes in *in-vitro* derived products. (20 marks)
- 2.3. Briefly describe the importance of aseptic conditions for the success of plant tissue cultures with reference to:
- 2.3.1. the major sources of infections. (20 marks)
- 2.3.2. explant preparation and sterilization. (20 marks)

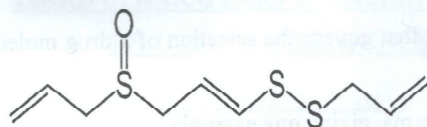
PART D

3. Answer all parts.
- 3.1. Write **five** examples of medicinal plants and **one** use of each plant in Sri Lankan traditional medicine. (10 marks)
- 3.2. State **four** reasons for unsustainable level of harvesting of medicinal plants. (08 marks)
- 3.3. Briefly explain the following;
- 3.3.1. Different cultivation systems for medicinal plants. (16 marks)
- 3.3.2. Good harvesting practices for medicinal plants. (16 marks)

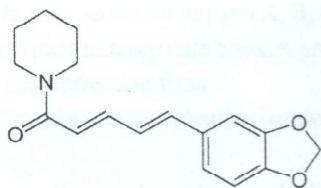
PART E

- 3.5. Define the term "antivenom". (10 marks)
- 3.6. Explain the production process of snake antivenom. (40 marks)
4. Answer all parts.
- 4.1. Define the term "live attenuated vaccines". (05 marks)
- 4.2. Mention **three** methods of culturing viruses used for vaccine production. (15 marks)
- 4.3. Briefly describe the role of clinical pharmacognosist in healthcare sector. (30 marks)
- 4.4. Pre-drug stage is the initial step in the process of new drug development from plant sources. Give a brief description about pre-drug stage. (30 marks)

- 4.5. Name the chemical compounds shown below and indicate **one** pharmacological action of each compound. (20 marks)



4.5.1.



4.5.2.

PART F

5. Answer all parts.

5.1. Marine ecosystem is considered as one of the rich sources of natural products. At present, several compounds isolated from marine organisms are in different stages of clinical trials.

5.1.1. List **five** marine organisms that produce biologically active natural products.

(10 marks)

5.1.2. How would you classify marine natural products based on their action?

(10 marks)

5.1.3. Following compounds with marine origin are in different stages of clinical trials.

Briefly describe the source, activity and the clinical status of each of the following molecules.

(60 marks)

- 5.1.3.1. Bryostatin 1
- 5.1.3.2. Trabectedin
- 5.1.3.3. Ara-A
- 5.1.3.4. Plakortin (a cyclic peroxide)
- 5.1.3.5. TZT-1027 (a Dolastatin 10 derivative)

5.2. Identify **one** enzyme each that could be used in the treatment of following medical conditions. (20 marks)

- 5.2.1. Autism
- 5.2.2. Soft-tissue inflammation
- 5.2.3. Haematoma
- 5.2.4. Pancreatectomy
- 5.2.5. Thromboembolic disorders

06. Answer all parts.

6.1. Identification of the target is the initial step in the pre-drug stage of drug discovery and development process.

6.1.1. List **five** major factors that govern the selection of a drug molecule for a specific target. **(20 marks)**

6.1.2. Define the following terms, giving **one** example. **(20 marks)**

6.1.2.1. Agonist

6.1.2.2. Antagonist

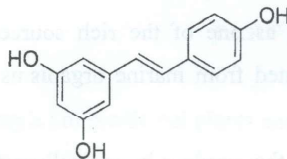
6.1.2.3. Allosteric modulator

6.1.2.4. Inhibitor

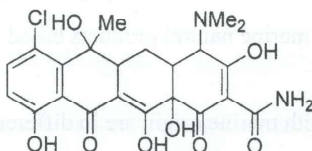
6.1.3. Briefly explain the requirements that characterize a drug molecule. **(35 marks)**

6.2. Identify the following natural products and indicate **one** biological activity of each molecule. **(25 marks)**

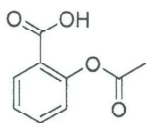
6.2.1



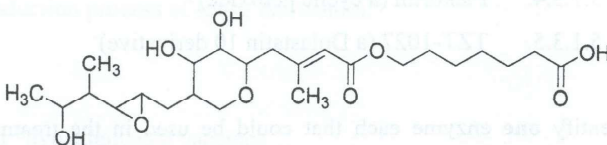
6.2.2



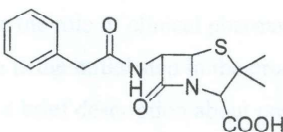
6.2.3



6.2.4



6.2.5



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