UNIVERSITY OF JAFFNA, SRI LANKA
BACHELOR OF PHARMACY
FOURTH YEAR SECOND SEMESTER EXAMINATION – AUGUST 2017
PHADD 4202 DRUG DISCOVERY AND DEVELOPMENT

Date: 18/08/2017 **Time: 3 Hours**

Answer all 6 questions.

1.

1.1 List the differences between the combinatorial and parallel synthesis of compounds. (20 Marks)

1.2 Draw the structure of four (04) resins that can be used for solid phase synthesis. (20 Marks)

1.3 Describe the Fmoc/t-Bu protection strategy with relevant chemical structures. (60 Marks)

2.

2.1 Describe the procedure of *de novo* drug design. (40 Marks)

2.2 Briefly describe the manual and automated d*e novo* drug design. (20 Marks)

2.3 Describe one of the computer programmes used in d*e novo* drug design. (40 Marks)

3.

3.1 List the benefits and concerns of animal models in drug discovery. (20 Marks)

3.2 Explain the "3R" principle described by the Russell and Burch for animal experiments. (30 Marks)

3.3 Describe the aspects that need to be considered, when developing animal models for drug development. (50 Marks)

4.

4.1 Explain the circumstances with examples where

4.1.1. enzymes are used as drug targets. (50 Marks)

4.1.2. nucleic acids are used as drug targets. (50 Marks)

5.

5.1 Describe the high throughput screening (HTS) in drug discovery. (50 Marks)

5.2 Explain the properties of a lead compound that are required to develop it as a drug. (50 Marks)

6.

6.1 List the phases in the clinical trial. (20 Marks)

6.2 Describe all the phases mentioned in 6.1 in detail. (80 Marks)