UNIVERSITY OF JAFFNA
BACHELOR OF PHARMACY
FOURTH YEAR SECOND SEMESTER EXAMINATION
PHADD 4223 DRUG DISCOVERY AND DEVELOPMENT

Date: 19.09.2018 **Time: 3 Hours**

Answer All Six Questions.

1. 1.1 Describe the steps involved in the *de novo* drug design. (30 Marks)
   1.2 List the advantages of manual and automated *de novo* drug design. (30 Marks)
   1.3 Describe two (02) computer programmes used in the *de novo* drug design. (40 Marks)

2. 2.1 Define the term "Solid phase synthesis". (10 Marks)
   2.2 List the advantages of solid phase synthesis. (30 Marks)
   2.3 Draw the structure of four (04) resins used in the solid phase synthesis. (20 Marks)
   2.4 Draw a synthetic pathway to describe the solid phase synthesis. (40 Marks)

3. 3.1 Discuss the merits and demerits of using animals in the *in vivo* studies. (25 Marks)
   3.2 Explain the "3R principle" that are used in the animal studies. (25 Marks)
   3.3 Write an account on animal models used in drug discovery studies. (50 Marks)

4. 4.1 4.1.1 List four (04) methods to optimise chemical reactions in drug synthesis. (10 Marks)
   4.1.2 Describe the methods mentioned in 4.1.1 with relevant examples. (40 Marks)
   4.2 4.2.1 List four (04) factors considered during the scaling up of a reaction. (10 Marks)
   4.2.2 Describe the factors mentioned in 4.2.1 with relevant examples. (40 Marks)

5. 5.1 Describe the phases of clinical trial. (50 Marks)
   5.2 List the characteristics of subjects who are enrolled in the Phase 1 study. (25 Marks)
   5.3 Briefly describe the roles of an ethical review committee that is involved in the clinical trial. (25 Marks)

6. 6.1 List the different methods that drugs can act on the DNA. (20 Marks)
   6.2 Describe the methods mentioned in 6.1 with relevant examples. (80 Marks)

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