



RAJARATA UNIVERSITY OF SRI LANKA
FACULTY OF APPLIED SCIENCES

B.Sc. Honors in Chemistry

Fourth Year - Semester II Examination - July 2020

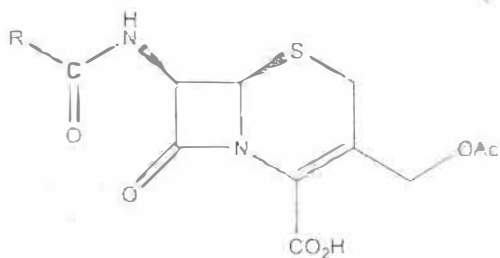
CHE 4212 - PHARMACEUTICAL AND MEDICINAL CHEMISTRY

Time: Two (02) hours

Answer all questions

01.

- List the uses of prodrugs. (15 Marks)
- Given below is the structure of Penicillin.



- Describe how bacteria can develop resistance to β -lactum antibiotics. (30 Marks)
- Explain how the performances of antibiotics can be improved by altering the basic structure of β -lactum antibiotics. (35 Marks)
- Discuss the properties to be included in a drug designed to treat meningitis (Central Nerve System infection). (20 Marks)

02.

- Discuss the types of rational drug design in new drug discovery with examples. (35 Marks)
- Outline the phases of clinical trials in drug development. (20 Marks)
- Describe *in vivo* and *in vitro* studies. (25 Marks)
- Explain the procedure "lead candidate refinement". (20 Marks)

03.

- a) Discuss the phases of biotransformation of drugs. (40 Marks)
- b) List five factors those effect to biotransformation of drug molecules. (15 Marks)
- c) Explain “volume of distribution” with factors effecting it. (25 Marks)
- d) Compare the likely characterises of two drugs with volume of distribution 1200L and 18L. (20 Marks)

04. Write short notes on the following topics (25x4 = 100)

- a) Antagonists and agonists
- b) Structure activity relationship (SAR)
- c) The relationship between pKa and solubility of a drug
- d) Chemical modification of drug molecules

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