



UNIVERSITY OF RUHUNA – FACULTY OF ALLIED HEALTH SCIENCES

DEPARTMENT OF PHARMACY

SECOND BPHARM PART I EXAMINATION – NOVEMBER 2019

PH 2153 PHARMACEUTICAL MICROBIOLOGY (SEQ)

TIME: TWO HOURS

INSTRUCTIONS

- There are **four** questions in A, B, C and D parts of the SEQ paper.
- Answer **each** part in a separate booklet.
- No paper should be removed from the examination hall.
- Do not use any correction fluid.
- Use illustrations where necessary.

PART A

1.

- 1.1. Define the term “microbiological assay of antibiotics”. *(10 marks)*
- 1.2. Mention **two** methods that can be used to perform microbiological assay of antibiotics. *(10 marks)*
- 1.3. List **three** principal sources of microbial contamination of medicines. *(15 marks)*
- 1.4. Briefly explain the importance of the antimicrobial preservative efficacy test. *(25 marks)*
- 1.5. Describe the preventive measures that can be taken to control microbial contamination when designing a pharmaceutical manufacturing plant. *(40 marks)*

2.

- 2.1. Briefly describe **three** physicochemical factors contributing to the microbial spoilage of pharmaceutical products. *(25 marks)*

PART B

- 2.2. Define the following terms. *(25 marks)*
- 2.2.1. Ecto-parasite (Ectozoa)
- 2.2.2. Endoparasite
- 2.2.3. Permanent parasite
- 2.2.4. Facultative parasite
- 2.2.5. Obligatory parasite

PART C

- 2.3. List **three** infections that can be transmitted to a health care worker by a needle stick injury. (06 marks)
- 2.4. Briefly describe the measures that can be taken to prevent transmission of the infections mentioned in 2.3. (18 marks)
- 2.5. Briefly describe the viral infections that can be prevented by active immunization. (26 marks)
- 3.
- 3.1. Briefly describe the mechanisms of action of the different groups of antibiotics giving **two** examples of antibiotics for each group. (32 marks)
- 3.2. Enumerate the factors need to be considered before the administration of an antibiotic to a patient. (18 marks)
- 3.3. Briefly describe the mechanisms of development of resistance to antimicrobials giving examples. (30 marks)
- 3.4. Discuss briefly how a pharmacist can contribute to minimize the development of antimicrobial resistance in your hospital. (20 marks)

PART D

- 4.
- 4.1. Define "normal/commensal flora" of microorganisms in humans. (10 marks)
- 4.2. State **three** beneficial effects of normal/commensal flora in humans. (10 marks)
- 4.3. List **five** methods of transmission of infections in humans and state **one** infection for each method. (10 marks)
- 4.4. Define the term "bacterial virulence factors". (10 marks)
- 4.5. List **three** bacterial virulence factors and state how each of them cause its effect. (15 marks)
- 4.6. List **two** important characteristics of viruses used in their classification. (10 marks)
- 4.7. List the major groups of antifungal agents and give **one** examples for each group. (15 marks)
- 4.8. Briefly explain the modes of action of the groups of antifungal agents listed in 4.7. (20 marks)

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