



UNIVERSITY OF RUHUNA – FACULTY OF MEDICINE

ALLIED HEALTH SCIENCES DEGREE PROGRAMME

SECOND BPHARM PART I EXAMINATION – NOVEMBER/NOVEMBER 2015

PH 2153 –PHARMAEUTICAL MICROBIOLOGY (SEQ)

TIME: TWO HOURS

INSTRUCTIONS

- Answer **all** questions.
- No paper should be removed from the examination hall.
- Do not use any correction fluid.
- Use illustrations where necessary.

1. Answer **all** parts.

- 1.1. List the different classes of antifungal agents and give **one (01)** example of an antifungal for each class. **(30 marks)**
- 1.2. Describe the mode of action of the different classes of antifungal agents listed in 1.1. **(50 marks)**
- 1.3. List **two (02)** superficial fungal infections and state **one (01)** antifungal recommended for the treatment of the infections you listed. **(20 marks)**

2. Answer **all** parts

- 2.1.
 - 2.1.1. List the **four (4)** methods of sterilization. **(08 marks)**
 - 2.1.2. State **two (2)** items being sterilized using each method listed under 2.1.1. **(08 marks)**
 - 2.1.3. State **two (2)** high-level disinfectants and indicate **one** example for each of their use in the hospital. **(06 marks)**
- 2.2.
 - 2.2.1. List **four (4)** infections that can be transmitted to a health care worker by a needle stick injury. **(08 marks)**
 - 2.2.2. Briefly describe the methods of contamination of medicine/ drugs used in the hospital. **(10 marks)**
 - 2.2.3. Briefly describe how a pharmacist can contribute to minimize the spread of health care associated infections. **(10 marks)**

2.3. Name **one** parasite for each of the parasite categories mentioned below. **(10 marks)**

2.3.1. Obligatory –

2.3.2. Facultative –

2.3.3. Intracellular –

2.3.4. Extracellular –

2.4. Explain '**intermediate host**' giving an example **(15 marks)**

2.5. Explain '**mechanical vector**' giving an example **(15 marks)**

2.6. Name **one** parasite for each of the modes of transmission mentioned below. **(10 marks)**

2.6.1. Hand to mouth –

2.6.2. Food & Water borne –

2.6.3. Faeco-oral –

2.6.4. Percutaneous –

3. Answer **all** parts.

3.1 Outline the phases of bacterial growth curve. **(20 marks)**

3.2 List 3 differences between Gram positive bacteria and Gram negative bacteria. **(10 marks)**

3.3 List **five (05)** laboratory techniques used for the diagnosis of bacterial infections? **(15 marks)**

3.4 List the mechanisms of antibiotic resistance and give an example for each mechanism. **(15 marks)**

3.5 List **five (05)** laboratory techniques available for the diagnosis of viral infections? **(15 marks)**

3.6 Briefly explain how you would transport a specimen of nasopharyngeal aspirate for viral studies? **(10 marks)**

3.7 List the major groups of antiviral agents and give **one** example for each group? **(15 marks)**

4. Answer **all** parts.

4.1. Water activity, nutritional factors and pH are important factors to be considered in microbial spoilage of pharmaceutical preparations. Briefly describe these factors in relation to microbial spoilage of pharmaceuticals. **(30 marks)**

4.2. It is extremely difficult to control microbial contamination during pharmaceutical manufacturing. With your knowledge on Good Manufacturing Practice (GMP), describe how the pharmaceutical industry has overcome this problem successfully. **(30 marks)**

4.3. Polio is a disease caused by a virus with three immunological serotypes. However, this is a disease for which two vaccines are available.

4.3.1. List the two types of vaccines available for polio? **(02 marks)**

4.3.2. Briefly discuss the advantages and disadvantages of the two types of vaccines stated in 4.3.1. **(08 marks)**

4.4. A new disease has been identified to be caused by a toxic compound secreted by a bacterium. A vaccine is intended to be produced. Briefly outline the steps involved in the development of a successful vaccine, if a seed lot of the necessary bacterial strain has been provided. **(30 marks)**

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