UNIVERSITY F RUHUNA – FACULTY OF ALLIED HEALTH SCIENCES

DEPARTMENT OF PHARMACY

FIRST BPHARM PART I EXAMINATION – JULY 2018

PH 1132 PHARMACEUTICS IA (SEQ)

TIME: TWO HOURS

INSTRUCTIONS

- There are **four** questions in A, B and C 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. Answer all parts.

1.1.1. The solubility of silver chloride (AgCl) is 1.5×10^{-5} moldm^{-3} at 298 K. Calculate the solubility product constant of silver chloride at the same temperature. (**10 marks**)

1.1.2. The solubility product constant of calcium phosphate, $Ca_3(PO_4)_2$, is 1.0×10^{-26} mol^5 dm^{-15} at 298 K. Calculate the solubility of calcium phosphate in moldm^{-3} at this temperature.

(**10 marks**)

1.2. "Supersaturated solutions of most solids in water and most gases in water are prepared differently". Justify this statement.

(**10 marks**)

1.3. Briefly explain the surface renewal theory which is used to describe the dissolution process of solids.

(**30 marks**)

1.4. Write a short note on "Partition coefficient" in relation to a physicochemical property of a drug.

(**40 marks**)

2.

2.1. Define the term "micrometrics".

(**10 marks**)

2.2. List **two** important applications of micrometrics in relation to pharmacy field. (**20 marks**)

2.3. Describe **four** factors affecting the particle size distribution of solid dosage forms. (**40 marks**)

2.4. Briefly explain the Hausner ratio which is a test to evaluate the flow ability of a powder.

(**30 marks**)

PART B

3.

3.1. Define the following terms.

    3.1.1.Pharmacy profession   *(10 marks)*

    3.1.2.Pharmacist   *(10 marks)*

3.2. "Pharmacy is a profession rather than an occupation". Justify the statement.   *(30 marks)*

3.3. Briefly describe **three** responsibilities of a hospital pharmacist.   *(30 marks)*

3.4. Briefly describe the **two** values of information sources in pharmacy profession.

                                                                    (20 marks)

4.

4.1. Write a brief description on tertiary information resources.   *(30 marks)*

4.2. A 3 year-old girl was prescribed 5 ml Amoxicillin (50 mg/ml) suspension three times per day for five days to treat her lower respiratory tract infection. Calculate how much amoxicillin in grams (g), she would consume during the course of antibiotic treatment?   *(20 marks)*

PART C

4.3. Define following terms.

    4.3.1. Dose.   *(10 marks)*

    4.3.2. Dose regimen.   *(10 marks)*

4.4. Explain briefly the reasons to perform the dose adjustments for infants.   *(15 marks)*

4.5. A tissue plasminogen activator (TPA) ophthalmic solution is prepared to contain 20 µg/ 100 µL.

    4.5.1. Calculate the percentage content (w/v) of TPA in the solution.   *(05 marks)*

    4.5.2. What volume of solution containing TPA, 40 mg/ 100 mL should be used to prepare each 100 µL of ophthalmic solution?   *(10 marks)*

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