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UNIVERSITY OF RUHUNA – FACULTY OF MEDICINE
ALLIED HEALTH SCIENCES DEGREE PROGRAMME
FIRST BPHARM PART II EXAMINATION – JANUARY 2017
PH 1242 PHARMACEUTICS I B (SEO)

TIME: TWO HOURS

INSTRUCTIONS

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

1.

1.1. Define the term “colloidal dispersion”. **(10 marks)**

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1.2. Differentiate lyophilic and lyophobic colloids. **(15 marks)**

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1.3. Using Stokes’ Law, briefly describe the factors affect on sedimentation rate of a colloid. **(15 marks)**

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1.4. Briefly describe the “tindall effect” of a colloid. **(15 marks)**

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1.5. Differentiate flocculated suspension and deflocculated suspension. **(20 marks)**

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1.6. List two (02) examples of flocculating agents. **(05 marks)**

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1.7. Briefly describe “cracking” of an emulsion. **(20 marks)**

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2.

2.1. Define the term 'distillation'. (05 marks)

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2.2. Assume that you are asked to separate hexane and toluene mixture by using simple distillation.

2.2.1. Draw a labelled diagram of the appropriate apparatus which can be used. (15 marks)

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2.2.2. Describe the principle behind the distillation process mentioned in the question 2.2.

(Please note to draw the expected temperature-time graph where required).

Boiling point of hexane = 68 °C

Boiling point of toluene = 110 °C (30 marks)

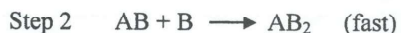
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2.3. Define the term “reaction kinetics”.

(10 marks)

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2.4. Suppose the reaction: $A + 2B \longrightarrow AB_2$ occurs by the following mechanism:



Write the rate law for the reaction of $A + 2B \longrightarrow AB_2$.

(05 marks)

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2.5. Kinetics of the degradation of drug A is given below.

Time (hours)	Concentration of the drug (mg/L)
0.00	8.53
1.00	7.23
3.00	5.15
6.00	3.09
12.00	1.11
18.00	0.40

Assume that drug A follows 1st order kinetics.

2.5.1. Calculate the rate constant.

(15 marks)

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2.5.2. Calculate the half-life of the drug A.

(10 marks)

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2.5.3. Calculate the shelf-life of the drug A.

(10 marks)

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