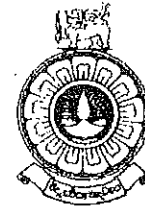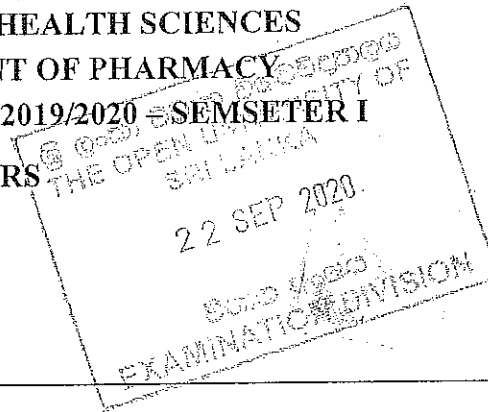# THE OPEN UNIVERSITY OF SRI LANKA
FACULTY OF HEALTH SCIENCES
DEPARTMENT OF PHARMACY
ACADEMIC YEAR 2019/2020 – SEMSETER I

BACHELOR OF PHARMACY HONOURS
FMU4357- PHYSICAL PHARMACY
FINAL EXAMINATION
DURATION: THREE (03) HOURS

DATE: 22ND SEPTEMBER 2020

TIME: 09.30 A.M. –12.30 P.M.

INDEX NO: ....

Part B (20 marks)

01.

1.1. Write three (03) main applications of Thermodynamics in Pharmacy   (06 marks)

I)..

II)...

III)...

1.2. What is the meaning of Steady State Diffusion?   (02 marks)

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1.3. Write two (02) applications of micromeritics in Pharmacy.   (02 marks)

I)..

II)...

02.

2.1. What is thixotropy?   (02 marks)

....

....

....

2.2. Write three (02) main criterias used to categorized suspensions.   (04 marks)

I)..

II)...

2.3. Write the radioactive decay equation and define the terms. (04 marks)

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Part C (60 marks)

01.

1.1. Write four (04) main pathways of chemical decomposition of drugs? (02 marks)

1.2. To overcome the chemical degradation due to one of the above pathways, one IV single dose ampoule manufacturer uses opaque box to store ampoules. Name and briefly explain this pathway. (02 marks)

1.3. What is an elementary reaction? (01 mark)

1.4. An unexposed co-amoxicillin suspension undergoes the chemical degradation due to the atmospheric water. This degradation obeys zero order reaction kinetics. Give the equation which can be used to calculate the time taken to reduce its initial concentration (A_0) by half. (01 mark)

1.5. When the t = 0, the drug container had co-amoxicillin 99.90 mg/mL and after 60 minutes it had only 38.90 mg/mL. Calculate the time that would take to reduce its initial concentration by half. (04 marks)

1.6. What will be the time (time that would take to reduce its initial concentration by half) if the degradation follows first order reaction kinetics? (05 marks)

02.

2.1. Write main steps of the dissolution of solid dosage form. (03 marks)

2.2. What are the purposes of conducting dissolution tests for drug dosage forms? (04 marks)

2.3. Name two dissolution test models. (02 marks)

2.4. Explain briefly the surface renewal theory and the diffusion layer model. (06 marks)

03.

3.1. What is a polymer? (01 mark)

3.2. Write four (04) uses of polymers in pharmacy? (02 marks)

3.3. What are the main four (04) classes of polymers? (02 marks)

3.4. What are the thermoplastic and thermoset polymers? (02 marks)

3.5. What is polymerization? (01 mark)

3.6. Explain briefly the addition polymerization. (05 marks)

3.7. What is the addition homo-polymerization? (02 marks)

04.

4.1. What are the main three (03) categories of liquid dispersion? (03 marks)

4.2. Write four (04) properties of a good suspension. (04 marks)

4.3. Explain briefly the role of electrolytes and surfactants in "Floccules Formation". (06 marks)

4.4. Name two (02) quality control testing techniques for suspensions. (02 marks)