

**NATIONAL UNIVERSITY OF LESOTHO**  
**FACULTY OF HEALTH SCIENCES**  
**DEPARTMENT OF PHARMACY**  
**BACHELOR OF PHARMACY (HONOURS)**

**PHA 2402- PHARMACEUTICS 1**

**SUPPLEMENTARY EXAMINATION PAPER**

**AUGUST 2023**

**TIME: 3 HOURS**

**TOTAL: 100 Marks**

**INSTRUCTIONS**

- **ANSWER ALL THE QUESTIONS IN THIS PAPER**
- **BEGIN EACH ON A NEW PAGE**

1. Discuss why there is a need to design pharmaceutical dosage forms. **10 marks**
2. Explain fully, the stages of dissolution process of solids into liquids. **10 marks**
3. Discuss in details, the factors affecting rate of in-vitro dissolution of solids into liquids. **10 marks**
4. Explain the rotating and static disc technique of measuring dissolution rate? **5 marks**
5. Explain the precautions to consider when determining solubility of solids into liquids. **10 marks**
6. Discuss any five factors affecting the solubility of solids and liquids. **20 marks**
7. "A quantitative pharmaceutical analysis is performed when an analyte is present in a solution". To show your understanding on expressing solubility and concentrations, answer the questions below. **5 marks**
  - a. Differentiate between Molarity and Molality [**1 mark**]
  - b. (i) 0.100g paracetamol (molar mass = 151.2g/mol) is dissolved in water and the total volume is adjusted to 500.0 ml. Calculate the molarity of paracetamol? Express your answer in mM. [**2 marks**]  
  
(ii) What is the mass % (m/v) of a solution prepared by dissolving 5.0 g of KI to give a final volume of 250 ml [**2marks**]
8. Discuss the differences between ideal and non-ideal solutions. **10 marks**
9. Briefly discuss all the factors which affect the adsorption from solution onto solids. **10 marks**
10. Explain thoroughly, the 3 types of non-Newtonian fluids. **10 marks**