

FACULTY OF HEALTH SCIENCES
DEPARTMENT OF PHARMACY
BACHELOR OF PHARMACY (HONOURS)

PHA 2408- PHARMACEUTICS II

SUPPLEMENTARY EXAMINATION PAPER

AUGUST 2023

TIME: 3 HOURS

TOTAL: 100 Marks

INSTRUCTIONS

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

1. Compare and contrast between crystalline materials and amorphous materials in terms of their solid-state properties. **10 marks**
2. Discuss why the particle size characterization is an important consideration in drug development and manufacturing. **10 marks**
3. Mention and explain the mechanism by which each of the following equipment below effect particle size reduction. **10 marks**
4. Explain the technique of elutriation method of particle size separation. **10 marks**
5. A) Explain the difference between positive, negative, neutral mixtures and substantiate by giving examples. **6 marks**
B) Briefly discuss what is meant by ordered mixing? **4 marks**
6. Describe the principle of mechanically vibrated sieve method of analysis; include the size range of analysis and sample preparation. **10 marks**
7. Discuss the mechanisms of powder mixing [**6 marks**] and explain how the *speed of mixing* influences powder mixing efficiency [**4 marks**]. **Total 10 marks**
8. Explain the three mechanisms by which particle size influences powder segregation [**6 marks**] and mention any four strategies that can be employed to minimize powder segregation [**4 marks**]. **Total 10 marks**
9. Describe the principle, uses, advantages and disadvantages of Turbine mixers in liquid mixing. **10 marks**
10. Discuss the following powder flow improvement strategies below. **10 marks**
 - I. Alteration of particle shape and texture
 - II. Use of flow activators