

Faculty of Pharmacy

End Semester Examination May 2025

PY3CO15 Physical Pharmaceutics -II

| | | | | | |
|------------------|---|----------|------------------------------|---|----|
| Programme | : | B.Pharm. | Branch/Specialisation | : | - |
| Duration | : | 3 hours | Maximum Marks | : | 75 |

Note: All questions are compulsory. Internal choices, if any, are indicated. Assume suitable data if necessary.
 Notations and symbols have their usual meaning.

Section 1 (Answer all question(s))

Marks CO BL
 2 1 2

Q1. Define colloids. Give two applications of colloidal particles.

| Rubric | Marks |
|-----------------------------------|--------------|
| Definition | 1 |
| two applications (0.5 marks each) | 1 |

Q2. Name two electro-kinetic properties of solid particles.

2 1 1

| Rubric | Marks |
|------------------------|--------------|
| each property (1 mark) | 2 |

Q3. States newton law of flow with equation.

2 2 1

| Rubric | Marks |
|---------------|--------------|
| Law | 1 |
| Equation | 1 |

Q4. Define viscosity. Give its two importance.

2 2 1

| Rubric | Marks |
|---------------|--------------|
| Definition | 1 |
| Importance | 1 |

Q5. Define suspension and name its types.

2 3 1

| Rubric | Marks |
|---------------|--------------|
| Definition | 1 |
| Types | 1 |

Q6. Name four stability problem of emulsion dosage form.

2 3 1

| Rubric | Marks |
|---------------|--------------|
| 0.5 each | 2 |

Q7. Give the formula of compressibility index and angle of response.

2 4 1

| Rubric | Marks |
|---------------|--------------|
| 1 for each | 2 |

Q8. List four importance of particle size and shape in pharma application.

2 4 1

| Rubric | Marks |
|----------|-------|
| 0.5 each | 2 |

Q9. Define shelf life. Name two factors affect shelf life of drug product.

2 5 1

| Rubric | Marks |
|--------------------------|-------|
| Definition | 1 |
| 0.5 each for each factor | 1 |

Q10. What is accelerated stability study? Give its temperature and humidity condition.

2 5 1

| Rubric | Marks |
|-----------------------|-------|
| Accelerated stability | 1 |
| Condition | 1 |

Section 2 (Answer any 2 question(s))

Marks CO BL

Q11. Describe the concept, classification and application of coarse dispersion system and properties of colloidal particles. 10 1 2

| Rubric | Marks |
|--|-------|
| Concept 3 marks classification of dispersion: 2 marks application 3 marks properties of colloidal particles 2 marks | 10 |

Q12. Differentiate between Newtonian and non-Newtonian fluid with discussion of types and properties of fluids. 10 2 2

| Rubric | Marks |
|---|-------|
| Difference 5 marks Types 3 marks Properties 2 marks | 10 |

Q13. Write a short note on optical, kinetic and electrical properties of colloids. Discuss the deformation of solid with suitable equations and examples. 10 2 2

| Rubric | Marks |
|--|-------|
| Optical 2 mark kinetic 2 mark electrical 1 mark | 5 |
| Deformation 3 Marks equations 1 mark examples 1 mark | 5 |

Section 3 (Answer any 2 question(s))

Marks CO BL

Q14. Differentiate between flocculated and deflocculated suspension.

5 3 2

| Rubric | Marks |
|--------------------------|-------|
| 5 difference 1 mark each | 5 |

Q15. Discuss the method of composition and method of preparation of suspension.

5 3 2

| Rubric | Marks |
|---------------------|-------|
| Composition 2 marks | 5 |
| Method 3 marks | |

Q16. Illustrate the theory of emulsification and stability problems of emulsion dosage form.

5 3 2

| Rubric | Marks |
|----------------------------|-------|
| Theory 2 Marks | 5 |
| stability problems 3 Marks | |

Section 4 (Answer any 2 question(s))

Marks CO BL

Q17. Discuss the process of determination of mean particle size and particle size distribution.

5 4 2

| Rubric | Marks |
|----------------------------|-------|
| Mean particle size 3 marks | 5 |
| distribution 2 marks | |

Q18. Explain the method of determining surface area and its application.

5 4 2

| Rubric | Marks |
|---------------------|-------|
| method 4 marks | 5 |
| application 1 marks | |

Q19. Discuss the powder bulk characterization and flow properties.

5 4 2

| Rubric | Marks |
|-------------------------------|-------|
| Bulk characterization 3 marks | 5 |
| flow properties 2 marks | |

Section 5 (Answer all question(s))

Marks CO BL

Q20. Describe the rate of reaction and its relation to drug stability.

5 5 2

| Rubric | Marks |
|--------------------------|-------|
| Rate of reaction 3 marks | 5 |
| Relation 2 marks | |

Q21. Explain physical and chemical factors affecting drug degradation.

5 5 2

| Rubric | Marks |
|------------------|-------|
| Physical 2 marks | 5 |
| Chemical 3 marks | |
| Oxidation | |
| Hydrolysis | |
| Photolysis | |

Q22. Discuss different types of stability studies with accounts to photostability of drug product.

5 5 2

| Rubric | Marks |
|--|--------------|
| Types and explanation 3 marks Photostability 2 marks ICH STABILITY | 5 |
