

20/05/17

Total No. of printed pages = 5

**PY 132401**

Roll No. of candidate

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**2017**

**B. Pharm. 4th Semester End-Term Examination**

**PHARMACEUTICS - III**

**(Physical Pharmacy - II)**

Full Marks – 100 Pass Marks – 35 Time – Three hours

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The figures in the margin indicate full marks  
for the questions.

1. Answer briefly any *six* of the following questions : 2×6=12

- (a) What do you understand by “structured vehicles” of suspension ?
- (b) Define ‘Thixotrophy’.
- (c) Define specific surface.
- (d) Define ‘shelf life’ and ‘energy of activation’.

[Turn over

- (e) Classify colloids with examples.
- (f) What is 'order of reaction' ? Define 'first order reaction'.
- (g) Write the principle of falling sphere viscometer.

2. Answer briefly any *six* of the following questions :

3×6=18

- (a) What is 'half life' ? Derive the equation for determining half life.
- (b) Write application of suspension in pharmacy.
- (c) Write 'Arrhenius equation'. Mention the application of Arrhenius equation in stability study.
- (d) Briefly mention the application of diffusion of pharmacy.
- (e) Mention any two methods for identification of type of emulsion.
- (f) Define the term 'dissolution'. Write 'Noyes-Whitney equation' for estimation of dissolution rate.

- (g) With the help of Stokes' law, mention the factors affecting stability of suspension.
- (h) Define micelle and critical micelle concentration.

3. Answer in short any *eight* of the following questions : 5×8=40

- (a) With a neat schematic diagram, explain the working principle of 'Ostwald viscometer'.
- (b) Define 'chelating agents'. Enlist their application in pharmacy.
- (c) What is 'accelerated stability study' ? Mention its limitations.
- (d) Compare the properties of flocculated and deflocculated suspensions.
- (e) Briefly write application of colloids in pharmacy.
- (f) Classify IP dissolution apparatus.
- (g) Describe interfacial properties of suspension.
- (h) Classify colloids. Briefly explain each type.

- (i) What is steady state diffusion ? How it is differ from sink condition ?
- (j) A sample of acetaminophen was analyzed by means of optical microscopy, and following data was obtained :

Size range	No. of particles in each size range
1 – 5	18
5 – 11	60
11 – 15	105
15 – 21	56
21 – 25	39
25 – 31	11

Calculate different types of mean diameter of the powdered sample.

4. Answer any *three* of the following questions :

10×3=30

- (a) What is porosity ? With a schematic diagram, explain the Coulter Counter apparatus for determination of particle volume.

- (b) With proper rheogram, explain different types of Non-Newtonian fluid flow. With schematic diagram, explain the working principle of falling-sphere viscometer.
- (c) Briefly enumerate different theories of emulsification.
- (d) What are inclusion complexes ? With suitable examples, discuss different types of inclusion complexes.