

22-05-2018

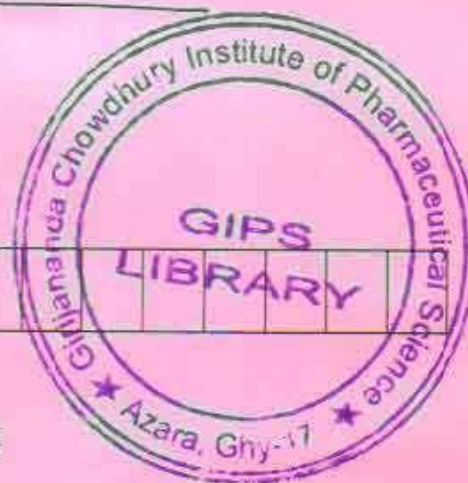
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PY 132401

Roll No. of candidate

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2018



B.Pharm. 4th Semester End-Term Examination

PHARMACEUTICS — III

(Physical Pharmacy — II)

Full Marks – 100

Time – Three hours

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

Answer Question No. 1 and any *six* from the rest.

1. Choose the correct answer of MCQs : (10 × 1 = 10)

(a) Particle size range of colloidal dispersion is

(i) 1 mm to 1 cm (ii) 1 nm to 1 μ m

(iii) 1 nm to 1 mm (iv) 1 cm to 1 m

(b) In first order reaction half life ($t_{1/2}$) is equal to

(i) 0.693/k (ii) 0.1052/k

(iii) 0.963/k (iv) 2.303/k

(c) Unit of viscosity is

(i) dyne.cm⁻² (ii) dyne.sec.cm

(iii) dyne.sec.cm⁻² (iv) dyne.sec².cm

!Turn over

(d) Gelatin solution exhibits

- (i) Plastic flow (ii) Pseudo plastic flow
(iii) Dilatant flow (iv) Newtonian flow

(e) Peptization is a method of preparation of

- (i) solution
(ii) emulsion
(iii) colloidal dispersion
(iv) solid dispersion

(f) Dialysis is a process of purification of

- (i) solution
(ii) emulsion
(iii) colloidal dispersion
(iv) all of the above

(g) Gold number of gum acacia is

- (i) 0.01 (ii) 0.1
(iii) 0.2 (iv) 0.02

(h) Self life of a drug means unchanged amount available is

- (i) 10% (ii) 90%
(iii) 100% (iv) 50%

(i) EDTA is a

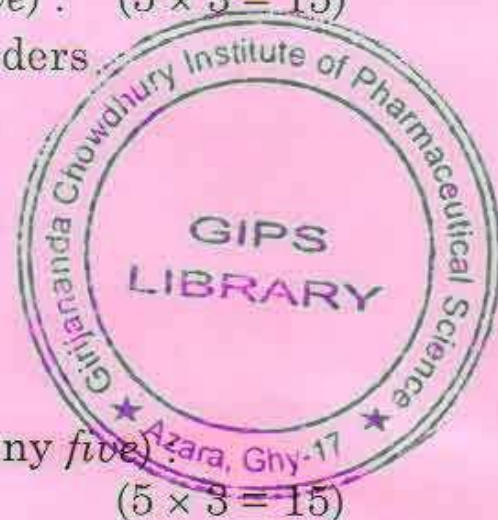
- (i) buffering agent
(ii) chelating and anticoagulant
(iii) suspending agent
(iv) thickening agent

(j) Example of an antioxidant is

- (i) Vitamin E (ii) Vitamin B
(iii) Vitamin D (iv) All of the above

2. Explain the following briefly (any *five*) : (5 × 3 = 15)

- (a) Fundamental properties of powders
- (b) Thixotropy
- (c) Gold number
- (d) importance of drug stability
- (e) association colloids
- (f) emulsions.



3. Write short notes on the following (any *five*) : (5 × 3 = 15)

- (a) Qualities of good suspensions
- (b) Purification of colloids
- (c) Determination of self life of drugs
- (d) Viscometers
- (e) First Fick's law of diffusion
- (f) Chelation.

4. Differentiate between the following (any *five*) : (5 × 3 = 15)

- (a) Glidants and lubricants
- (b) True density and bulk density
- (c) Plastic and pseudo plastic flow
- (d) Lyophilic and lyophobic colloids
- (e) Suspension and emulsion
- (f) Adsorption and absorption.

5. (a) Briefly describe measures taken to improve flow property of a tablet granulation.
- (b) Explain porosity and particle number and give their significance.
- (c) Describe the techniques for the assessment of flow properties of powders.
- (d) The true density of aspirin is 1.3 gm/c.c and the granule density is 1.33 gm/c.c. What is the porosity within the granules? (4 + 4 + 4 + 3 = 15)

6. (a) Explain the Newton's law of flow and kinematic viscosity. Mention the flow characteristics of Non-Newtonian materials.

(b) What do you understand by viscoelasticity? Describe mechanical models to illustrate the same.

(c) Discuss the applications of rheology in pharmacy. $((2 \times 2 + 3) + (2 + 3) + 3 = 15)$

7. (a) Derive the expression to calculate rate constant, half-life and self life for first order reaction.

(b) What is accelerated stability testing? Mention the different causes of drug's instability.

$((2 \times 3) + 2 + 7 = 15)$

8. (a) Define diffusion and dissolution of drugs. Give the Noyes-Whitney equation, explaining the significance of the term.

(b) Define complexation. Give the importance of complexation phenomenon in pharmacy.

(c) Briefly describe the theories of emulsification.

$((2 \times 2 + 3) + (2 + 3) + 3 = 15)$

9. (a) Write notes on :

(i) Optical properties of colloids

(ii) Identification tests for type of emulsions

(iii) Critical Micelle Concentration (CMC).

$(4 + 4 + 3)$

(b) Give the examples of the followings – anti coagulant, chelating agent, flocculating agent and wetting agent. (4)