

Name : .....

Roll No. : .....

Invigilator's Signature : .....

**CS/B.Pharm (NEW)/SEM-3/PT-306/2009-10**

**2009**

**PHARMACEUTICS ( PHYSICAL PHARMACY )**

Time Allotted : 3 Hours

Full Marks : 70

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words  
as far as practicable.*

**GROUP - A  
( Multiple Choice Type Questions )**

1. Choose the correct alternatives for any *ten* of the following : 10 × 1 = 10

- i) The angle of repose values are utilized to
  - a) measure the movement of granules from hopper to the table of tableting machine
  - b) select proper containers for capsules of a given mass of powders
  - c) study the absorption of drugs
  - d) understand dissolution of medicament.
- ii) Fluidity is a term associated with Newtonian fluids. An equivalent term in plastic flow fluids is
  - a) apparent viscosity
  - b) flexibility
  - c) mobility
  - d) plastic viscosity.

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- iii) The systemically available drug concentration is directly related to pharmacological action. The concentration is usually referred to
- a) bound drug                      b) dose  
c) total drug                        d) unbound drug.
- iv) EDTA is an example of one of the following ligand type :
- a) bidentate                        b) tetradentate  
c) unidentate                      d) hexadentate.
- v) For an ideal suspension the sedimentation volume should be
- a) equal to one                    b) less than one  
c) more than one                d) zero.
- vi) An 'emulsion within emulsion' is designated as
- a) o/w/w                            b) w/o/w  
c) w/o/o/w                        d) w/o/o.
- vii) Tween 80 means
- a) polyoxyethylene sorbitan monolurate  
b) polyoxyethylene sorbitan monooleate  
c) sorbitan monooleate  
d) sorbitan monostearate.
- viii) Which one is the example of dilatant flow ?
- a) solution of tragacanth  
b) concentrated titanium dioxide suspension  
c) solution of gelatin  
d) suspension of zinc oxide in mineral oil.
- ix) Half-life of zero order reaction is
- a)  $\frac{0.693}{k}$                             b)  $\frac{0.1052}{k}$   
c)  $\frac{\text{initial concentration}}{2k}$                       d) none of these.
- x) Effect of temperature on reaction rate can be determined by
- a) Stokes law                        b) Arrhenius equation  
c) Schulz hardy rule                d) Poiseuilles equation.



- xi) Antifoaming agent have HLB of
- |          |                   |
|----------|-------------------|
| a) 6-9   | b) 1-3            |
| c) 15-18 | d) none of these. |
- xii) Which of the following is not used as suspending agent ?
- |                     |                    |
|---------------------|--------------------|
| a) Acacia           | b) Tragacanth      |
| c) Methyl cellulose | d) Soluble starch. |

**GROUP – B**

**( Short Answer Type Questions )**

Answer any *three* of the following.  $3 \times 5 = 15$

2. Define shelf life. What additional information should be specified along with shelf life on the label of a product ?  $2 + 3$
3. Write the applications of drug - protein binding in drug activity. 5
4. What do you mean by liquid crystals ? Define eutectic mixtures. 5
5. Define spreading co-efficient of liquid. 5
6. Write a note on the phenomenon of electrical double layer with a neat diagram. 5

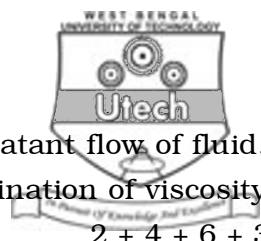
**GROUP – C**

**( Long Answer Type Questions )**

Answer any *three* of the following.  $3 \times 15 = 45$

7. Define an emulsion. Mention three advantages of emulsion with suitable example. Discuss the factors which improve the physical stability of emulsions.  $2 + 5 + 8$

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8. What is meant by yield value ? Explain dilatant flow of fluid. Describe a suitable method for the determination of viscosity of dilatant fluid. What is thixotropy ? 2 + 4 + 6 + 3
9. a) What do you understand by the term 'specific surface of particles' ? With the help of labelled diagram, explain the working of an instrument used to determine specific surface area.
- b) What do you mean by intraparticle porosity ? The true density of a powder mixture is 3.023. When compressed into tablet form, the granule density of the mixture is found to be 3.138. What is the porosity of the tablet ? 2 + 6 + 2 + 5
10. a) Define order of reaction.
- b) Write the derivation of rate constant, half life and shelf life of zero order reaction.
- c) A suspension shows zero order kinetics with a rate constant of 2 mg/ml month. The dose of the suspension is 20 mg/ml.
- i) Calculate  $t_{90}$ . The solubility is 0.1 mg/ml.
- ii) What is the first order rate constant ? Calculate half life of zero order. 2 + 6 + 7
11. a) Classify disperse systems on the basis of particle size with example.
- b) Differentiate between flocculated and deflocculated suspension.
- c) Write a note on accelerated stability study. 4 + 4 + 7
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