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B. Pharm. Fourth Semester (New)

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Physical Pharmaceutics - II : BP 403 T

P. Pages : 3
Time : Three Hours

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AW - 2350
Max. Marks : 75

Notes : 1. Answer all questions.
2. Assume suitable data wherever necessary.
3. Illustrate your answer necessary with the help of neat sketches.

1. MCQ's. **20**

i) -------- dispersions are unstable in the presence of even small concentration of electrolytes.
a) Lyophilic b) Hydrophilic
c) Amphiphilic d) Lyophobic

ii) The size of dispersed phase particles of colloidal dispersions is ----------.
a) Less than 1 nm b) Greater than 5 μm
c) 1 nm to 0.5 μm d) Greater than 0.5 μm

iii) The protective property of hydrophilic colloids is expressed in terms of ----------.
a) Gold number b) Lyotropic series
c) HLB value d) All of the above

iv) The ability of amphiphilic colloids to increase the solubility of normally insoluble materials in solution is known as ----------.
a) Peptization b) Sensitization
c) Protection d) Micellar solubilization

v) Ostwald's viscometer is a ---------- viscometer.
a) Capillary b) Falling sphere
c) Cone and plate d) Cup and bob

vi) Bingham bodies are ---------- in nature.
a) Shear thickening b) Dilatant
c) Shear thinning d) Newtonian

vii) The ---------- is a dimensionless quantity.
a) Stress b) Rate of shear
c) Strain d) Elastic modulus

viii) Deflocculated suspensions containing high concentration of small particles exhibit ------- flow.
a) Newtonian b) Plastic
c) Pseudo-Plastic d) Dilatant

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ix) The diameter of a sphere undergoing sedimentation at the same rate as the particle under question is known as -------- diameter.
a) Surface b) Volume
c) Projected d) Stoke's

x) The true density of particles can be measured by --------- method.
a) Mercury displacement b) Liquid displacement
c) Helium penetration d) All of the above

xi) The ratio of void volume to bulk volume is known as ----------.
a) Porosity b) Compressibility
c) Bulkiness d) Bulk density

xii) The theoretical porosity of powder containing uniform spheres is -------- in the closest pack.
a) 26% b) 74%
c) 48% d) 52%

xiii) The velocity of suspended particles is inversely proportional to ----------.
a) Density of dispersed phase
b) Density of dispersion medium
c) Radius of dispersed phase particles
d) Viscosity of dispersion medium

xiv) The velocity of sedimentation of dispersed particles is ---------- in flocculated suspensions than deflocculated.
a) Slower b) Faster
c) Same d) None of a, b, c

xv) Surfactants form -------- film at o/w interface in an emulsion.
a) Protective b) Monomolecular
c) Multimolecular d) Particulate

xvi) ---------- is a reversible incompatibility observed in emulsions.
a) Breaking b) Phase inversion
c) Creaming d) Coalescence

xvii) The rate of ---------- order reactions is proportional to the concentration.
a) Zero b) Pseudo
c) First d) Second

xviii) The unit for rate constant of a -------- order reaction is second^{-1}.
a) Zero b) Pseudo
c) First d) Second

xix) Classic-collision theory explains the effect of ---------- on rates of reactions.
a) pH b) Temperature
c) Catalysis d) Humidity

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xx) The half-life in a zero-order reaction is described by ----------.

a) $t_{1/2} = \frac{A_o}{2K_o}$ b) $t_{1/2} = \frac{0.693}{K}$

c) $t_{1/2} = \frac{1}{aK}$ d) $t_{1/2} = \frac{A_o - A}{2K_o}$

2. Long answer questions **any two.** **20**

a) Classify the flow properties of liquids with relevant equations and rheograms. Add a note on Thixotropy.

b) Describe the derived properties of powders in details.

c) Define rate, order & molecularity of a reaction & derive equation for first order reaction.

3. Short answer Questions **any seven.** **35**

a) Write a note on expiration dating of pharmaceutical dosage forms.

b) Describe any two methods of determination of particle size.

c) Write in brief about equivalent spherical diameters.

d) Give an account of optical properties of colloids.

e) Write a note on protective colloid action.

f) Discuss Bulges & spurs with relevant examples.

g) Enlist the instabilities in emulsions and discuss any two in details.

h) Write a note on sedimentation parameters.

i) Discuss Arrhenius theory in brief.

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