

04-06-19

Printing Pages : 3

Paper Code : BP-302 T

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B.PHARM.

(2nd YEAR, 3rd SEM.) EXAMINATION

Physical Pharmaceutics I

Time : 3 Hours]

[Max. Marks : 75

Note: Attempt all question. Each question carries equal marks.

1. Attempt all questions.

[1×20=20

- (i) The solubility of the drug will be high when it is in its
 - (a) Metastable form
 - (b) Stable form
 - (c) Unstable form
 - (d) All of above
- (ii) Cohesive forces are the forces acting.
 - (a) Between molecules of different materials
 - (b) Between molecules of same material
 - (c) Between water and glass capillary tube
 - (d) Due to gravity
- (iii) The Freundlich adsorption isotherm can be used to model:
 - (a) Multilayer adsorption
 - (b) Monolayer adsorption
 - (c) Both
 - (d) None of the above
- (iv) If osmotic pressure of a solution is equal to osmotic pressure of plasma, then it is said to be
 - (a) Isotonic
 - (b) Isobaric
 - (c) Hypertonic
 - (d) Hypotonic
- (v) Change of a state from a solid directly to gas is known as
 - (a) Fusion
 - (b) Sublimation
 - (c) Vaporization
 - (d) Distillation.
- (vi) Which of the following are properties of amorphous solids?
 - (a) No crystal structure
 - (b) No definite melting point
 - (c) Glassy
 - (d) All of the above
- (vii) Adsorption of hydrogen on charcoal is
 - (a) Physical
 - (b) Chemical
 - (c) Sorption
 - (d) None of these

- (viii) Physical Adsorption is a process
 (a) Reversible (b) Complex
 (c) Irreversible (d) None of these
- (ix) Adsorbate is that substance which
 (a) Concentrate on surface (b) Adsorption takes place
 (c) Evaporate from surface (d) None
- (x) Dipole moment is denoted by
 (a) π (b) η
 (c) μ (d) γ
- (xi) Which one of these is unit of Dipole moment
 (a) Debye (b) Dyne
 (c) Dyne/m (d) Debye/m
- (xii) Nernst distributin law is also known as
 (a) Partition law (b) Henry law
 (c) Reoult's law (d) Equilibrium law
- (xiii) Haemolytic method is used to measurement of
 (a) Viscosity (b) Porosity
 (c) Tonicity (d) Density
- (xiv) Normal pH of blood is
 (a) 7.0 (b) 7.2
 (c) 7.3 (d) 7.4
- (xv) Buffer are mixtures of
 (a) Strong acid strong base (b) Strong acid weak base
 (c) Weak acid and their conjugated base (d) Weak base and their conjugated acid
- (xvi) Newton / meter is the unit of
 (a) Density (b) Viscosity
 (c) Surface tension (d) None

- (xvii) At the boiling point of water, its surface tension
 (a) Is infinite (b) Is zero
 (c) Is the same as that at room temperature (d) Is maximum
- (xviii) Rain drops are spherical because of
 (a) Gravitational force (b) Surface tension
 (c) Air resistance (d) Low viscosity of water
- (xix) How do insects such as pond skaters stay afloat on water?
 (a) Because of high surface tension of water (b) As they can swim
 (c) Because they are less dense than water (d) None of the above reasons
- (xx) A surfactant with a very large Hydrophile Lipophile balance (HLB) value (e.g.40) is expected to function as a
 (a) Anti – foaming agent (b) W/o emulsifier
 (c) O/w emulsifier (d) Solubility enhancer

2 Attempt any two questions of the following.

[10×2=20]

- (i) Define buffer, buffer equation and application of buffer in pharmaceutical preparation.
- (ii) Explain Distribution law in detail with its limitations and application.
- (iii) Explain following in detail (a) Refractive index (b) Raoult's law

3 Attempt any seven questions of the following.

[5×7=35]

- (i) Write about buffered isotonic solution in detail.
- (ii) Define complexation and its classification.
- (iii) Define surface tension and any method for estimating surface tension.
- (iv) Define surface active agents give example with its classification.
- (v) Discuss following terms- (a) Liquid crystal (b) Aerosol inhaler.
- (vi) Write about physiochemical properties of drug molecule and discuss optical rotation.
- (vii) Write about binary solution and discuss solubility of liquid in liquid.
- (viii) Explain polymorphism phenomenon in detail with suitable example.
- (ix) Discuss diffusion principles in biological system.

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B.PHARM.

(2nd YEAR, 3rd SEM.) EXAMINATION (carry over)

Pharmaceutical Microbiology

Time : 3 Hours]

[Max. Marks : 80

Note: Attempt all question. Each question carries equal marks.

1. Attempt all questions.

[1×20=20

(i) Microbiology is based on:-

(a) Microorganism

(b) Microscope

(c) Raw material

(d) Bacterial growth

(ii) Which scientist demonstrated the role of bacteria in causing disease?

(a) Robert Koch

(b) Robert hook

(c) Elbert

(d) Paul enrich

(iii) Who discovered the penicillin from penicillium notatum that destroy several pathogenic bacteria?

(a) Alexander Flemming

(b) Pasteur

(c) Elward Jenner

(d) None of these

(iv) Contributions of Loius Pasteur depend are:-

(a) Microbiology

(b) Spontaneous germination

(c) Development of effective vaccines rabies and anthrax

(d) All of these

(v) Agar media prepared by-

(a) Beef extract

(b) Peptone

(c) NaCl

(d) All of these

(vi) Define " 10 value-

(vii) Concentration at 884 mg/ltrs exposure time

(a) 2 HRS

(b) 100HRS

(c) 0.8 HRS

(d) None

- (viii) Mercury in concentration of 1:1000 used as
 (a) Bacteriostatic (b) Bactericidal
 (c) Both (d) None
- (ix) Clean Room 'M' must not contain more the ----- no. of particles.
 (a) 100 (b) 200
 (c) 1000 (d) 50
- (x) Cell wase of fungus is made of:-
 (a) Chitin (b) Teichoic acid
 (c) Plasmin (d) Lipoic acid
- (xi) Differential staining based on -
 (a) Gm⁺ve (b) Gm⁻ve
 (c) Both a & b (d) None of these
- (xii) Mercury in concentration of 1:1000 used as
 (a) Bacteriostatic (b) Bactericidal
 (c) Both (d) None
- (xiii) Who is the father of microbiology?
 (a) Louis Pasteur (b) John Tyndall
 (c) Robert Koch (d) Richard petri
- (xiv) History of microbiology divides into ----- phases:-
 (a) 4 (b) 3
 (c) 2 (d) 1
- (xv) In Simple staining we use
 (a) Safranin (b) Iodine
 (c) Both (d) None
- (xvi) Zhiel Neilson carbol Fuchsin used in
 (a) Acid fast (b) Gram staining
 (c) Simple (d) All

- (xvii) Spread plating technique used for-
 (a) Isolation of bacteria (b) Cultivation of bacteria
 (c) Measurement of bacteria (d) Shape of bacteria
- (xviii) Boiling point of ethylene oxide
 (a) 10.8°C (b) 100.8°C
 (c) 0.8°C (d) None
- (xix) Decimal reduction time is denoted by:-
 (a) Z value (b) F value
 (c) Q₁₀ value (d) None
- (xx) UV rays shows maximum activity at
 (a) 3257 (b) 2345
 (c) 90 (d) 120

2 Attempt any two questions of the following.

[10×2=20]

- (i) Define staining technique and biochemical tests (IMVIC)?
 (ii) Explain history and branches of microbiology?
 (iii) Give the principle and method of different microbiological assay of antibiotics and vitamins?

3 Attempt any seven questions of the following.

[5×7=35]

- (i) What is quantitative measurement of bacterial growth?
 (ii) Differentiate prokaryotes and Eukaryotes
 (iii) Define biochemical essay?
 (iv) Explain sterility testing IP, BP and USP?
 (v) Define the morphology and cultivation of virus?
 (vi) Define factor influencing of disinfection efficacy.
 (vii) Designing of aseptic area?
 (viii) Discuss application of cell culture?
 (ix) Explain equipments employed in large scale sterilization.

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B.PHARM.

1st YEAR II SEMESTER EXAMINATION

Subject: PHARMACEUTICAL ENGINEERING

Time : 3 Hours]

[Max. Marks : 75

Note: Attempt all question as per Instructions. Draw well labeled diagram wherever necessary.

I. Attempt all. Choose the correct option.

[1×20=20]

- i) Fluid Dynamics is the study of fluid in :
 - a) Rest b) Motion c) both a & b d) none of the above
- ii) When the velocity of water is low in Reynolds Experiment, then flow is:
 - a) Laminar b) Turbulent c) both d) none of above
- iii) Hammer mill works on the principle of
 - a) Compression b) impact c) impact & attrition d) cutting
- vi) Size Reduction is also known as :
 - a) Centrifugation b) compaction d) comminuting d) Extraction
- v) According to IP 1996, pharmaceutical powders are classified into how many types?
 - a) 3 b) 4 c) 5 d) 6
- vi) In Elutriation process the size separation of heavy particles occurs by:
 - a) Mixing b) sedimentation c) Screening d) none of the above
- vii) Heat transfer which involves movement of fluid particles is:
 - a) Conduction b) Convection c) Radiation d) All of the above
- viii) Which of the equipment uses Heat transfer by radiation?
 - (a) Hot Air oven (b) Microwave oven
 - (c) Incubator (d) Refrigerator
- (ix) The product obtained in Evaporation is:
 - a) Dry product b) Concentrated Liquid c) Both d) none of the above
- x) Evaporation involves :
 - a) Conversion of vapour into its liquid b) conversion of liquid into its vapour c) conversion of solid into gas d) none of the above

- (xi) is the process of heating a liquid mixture to form vapour & then cooling it to get pure component.
 a) Crystallization b) Sublimation c) Distillation d) Chromatography
- xii) Drying step is generally done:
 a) At the starting of any process b) At the end of the process c) in between the process d) All of the above
- (xiii) Which of the following is true with respect to mixing?
 a) It is used to distribute heat uniformly to all components of the mixture.
 b) Mixing is difficult when one of the phases to be mixed is in minor quantity.
 c) Solid-solid mixing is more difficult than other mixing
 d) All of the above
- (xiv) Filter medium is the:
 a) Accumulated solid matter
 b) Porous medium that filters the suspension
 c) Both a and b
 d) All of above
- xv) Following is an example of a Filter Aid:
 a) Gelatin b) Methyl cellulose c) Talc d) Sodium alginate
- (xvi)is widely used to separate biological products from a liquid by applying centrifugal force.
 a) Centrifuge b) Microscope c) Dryer d) Laminar Air bench
- xvii) Centrifugation is a process of :
 a) Mixing b) Separation c) Drying d) Extraction
- xviii) During pharmaceutical plant construction, factors, affecting selection of materials are:
 a) Physical factors b) Chemical factors c) mechanical factors d) all of the above

- xix) Corrosion of metals involves:
 a) Physical reactions b) Chemical reactions c) Both d) none
- xx) Protection against sunlight can be achieved by using which container:
 a) Amber coloured b) Transparent c) Yellow coloured d) Green coloured

II. Attempt any two

[10×2=20]

- (i) What are the two types of Fluid Flow? Explain this with Reynolds Experiment & tell about the Reynolds number.
- (ii) Explain the principle, construction, Working & uses of a Fluid Energy Mill.
- iii) Give the objectives applications & factors influencing Mixing. Also write about the mechanisms of mixing.

III. Attempt any SEVEN

[5×7=35]

- (i) What do you mean by Size Reduction? Give the mechanisms (Methods) of size Reduction.
- (ii) What are the official standards of Powders?
- (iii) Give the mechanisms of Heat Transfer. (Explain in brief)
- iv) What is Evaporation? Give the factors influencing evaporation.
- v) Give the principle, construction & method of Fractional Distillation.
- vi) Give the objectives & application of drying. Give the full form of EMC.
- vii) Explain the principle, construction, working & uses of a plate & Frame Filter press.
- viii) Give the principle, construction & working of Double Cone Blender
- ix) Write in brief the classification of materials for plant contraction.