BRAINWARE UNIVERSITY
Term End Examination 2020 - 21
Programme – Bachelor of Pharmacy
Course Name – Physical Pharmaceutics I
Course Code - BP302T
Semester / Year - Semester III

Time allotted : 90 Minutes   Full Marks : 75

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)   1 x 75=75

1.   *(Answer any Seventy five)*

(i) Solubility of a molecule in a specific pH is known as

   a) Buffered solubility   b) Un buffered solubility

   c) Intrinsic solubility   d) None of these

(ii) Cavitation energy present in between the molecule of

   a) Solvent   b) Solute

   c) Solute – solvent   d) All of these

(iii) According to USP, freely soluble compound requires _____ part of solvent for 1 part of solute.

   a) 1-10   b) 10-30

   c) 30-100   d) 100-1000

(iv) According to USP, soluble compound requires _____ part of solvent for 1 part of solute

   a) 1-10   b) 10-30

   c) 30-100   d) 100-1000

(v) Solubility of calcium oxide will _____ with increase in temperature.

   a) Increase   b) Slowly Increase

c) Decrease   d) no change

(vi) Solubility of potassium nitrate will _____ with increase in temperature.

    a) Increase   b) Slowly Increase

    c) Decrease   d) no change

(vii) Polar compound has

    a) Strong electronegativity   b) Strong dipolemoment

    c) Hydrogen bonding capacity   d) All of these

(viii) Molarity is

    a) gram mole in 1 lit   b) gram equivalent in 1 lit

    c) moles of solute in 1 kg solvent   d) None of these

(ix) Molality is

    a) gram mole in 1 lit.   b) gram equivalent in 1 lit.

    c) moles of solute in 1 gm solvent   d) None of these

(x) According to Fick's 1st law of diffusion _____

    a) flux proportional to time   b) flux proportional to cross-sectional area

    c) flux proportional to concentration   d) flux proportional to path length
    gradient

(xi) Active transport requires energy for

    a) uphill transport   b) to move from low to high concentration

    c) Both uphill transport and to move from   d) None of these
    low to high concentration

(xii) Raoult's law is followed by

    a) Real gas   b) Ideal gas

c) Both Real gas and Ideal gas   d) None of these

(xiii) In between molecule of Real gas have
    a) cohesive forces   b) adhesive forces
    c) Both cohesive forces and adhesive forces   d) None of these

(xiv) For real gas, positive deviation of Raoult's law observed when
    a) Adhesive force increased   b) Cohesive force increased
    c) Both Adhesive force increased and   d) None of these
    Cohesive force increased

(xv) Cohesive force present in
    a) same molecule   b) real solution
    c) unlike molecule   d) both same molecule and real solution

(xvi) Which of the following transport process require energy from ATP?
    a) Active transport   b) Passive transport
    c) Both Active transport and Passive   d) Ion-pair transport
    transport

(xvii) What is the normality of 0.0521M H3PO4?
    a) 0.156N   b) 0.456N
    c) 0.656N   d) 0.856N

(xviii) Diltiazem is an example of…
    a) Class I drug   b) Class II drug
    c) Class III drug   d) Class IV drug

(xix) Which method(s) is/are used to determine solubility of drug?
    a) Turbidometric method   b) Nephlometric method
    c) Ultra-filtration   d) All of these

(xx) What will be the normality of 5 molar solution of calcium hydroxide?

a) 2.5N

b) 4.5N

c) 1.3N

d) 4.6N

(xxi) Identify the correct solubility profile

a) Anhydrous> Hydrates> Solvates

b) Hydrates> Solvates >Anhydrous

c) Solvates >Anhydrous> Hydrates

d) Anhydrous> Hydrates=Solvates

(xxii) Identify the parts of solvent required for one part of sparingly soluble solute.

a) 30-100

b) < 1

c) 1-10

d) 10-30

(xxiii) Partition coefficient says

a) state of unionized drug

b) state of ionized drug

c) Both state of unionized drug and state of ionized drug

d) None of these

(xxiv) Distribution coefficient says

a) state of unionized drug

b) state of ionized drug

c) Both state of unionized drug and state of ionized drug

d) None of these

(xxv) Degree of freedom depends on

a) number of phase

b) number of component

c) size of phase

d) Both number of phase and number of component

(xxvi) In phase diagram, which curve is not included

a) boiling point curve

b) vapour pressure curve

c) melting point curve

d) sublimation curve

(xxvii) Critical temperature of water is

a) 645K

b) 642.5K

c) 647K

d) 648K

(xxviii) What is the volume of 1 mole gas in 0°c and 760 mm Hg pressure?

a) 220 L

b) 25 L

c) 23.5 L

d) 22.4 L

(xxix) Critical pressure of water is

a) 212 atm

b) 215 atm

c) 218 atm

d) 220 atm

(xxx) Joule Thomson expansion is carried out in

a) precooled condition

b) pressurized container

c) vacuum system

d) Both precooled condition and pressurized container

(xxxi) Below eutectic point

a) no liquid phase is present

b) no solid phase is present

c) no conjugate phase is present

d) conjugate phase is present

(xxxii) The vapour pressure of bromine is:

a) 0.7 atm

b) 0.3 atm

c) 0.08 atm

d) 0.03 atm

(xxxiii) Identify the factor(s) affecting vapour pressure.

a) Surface area

b) Temperature

c) Intermolecular force

d) All of these

(xxxiv) Identify the correct statement (s) regarding nematic liquid crystals.

a) Molecules have no positional order

b) Molecules have long-range orientational

order

c) Both Molecules have no positional order and Molecules have long-range orientational order

d) Preparaed by mixing two or more substances one of which is a polar molecule

(xxxv) Which force helps to hold the particles of NaCl together?

a) Ionic force

b) Hydrogen bonding

c) Metallic bonding

d) Co-valent bonding

(xxxvi) Which force helps to hold the particles of Mg together?

a) Ionic force

b) Hydrogen bonding

c) Metallic bonding

d) Co-valent bonding

(xxxvii) Eutectic point of thymol and salol mixture is

a) 13°c

b) 15°c

c) 20°c

d) 10°c

(xxxviii) Present state of humidity in relative to maximum humidity is called

a) absolute humidity

b) relative humidity

c) equilibrium humidity

d) None of these

(xxxix) Crystalline solids have

a) fixed geometric pattern

b) ordered arrangement

c) definite shape

d) All of these

(xl) Urea is the example of _____ crystal system.

a) Tetragonal

b) cubic

c) Rhombic

d) Monoclinic

(xli) Sucrose is the example of _____ crystal system.

a) Tetragonal

b) cubic

c) Rhombic   d) Monoclinic

(xlii) Polymorph have
    a) Different solubility   b) Different melting point
    c) Chemically identical structure   d) All of these

(xliii) Theobroma oil have
    a) 3 polymorphic form   b) 5 polymorphic form
    c) 2 polymorphic form   d) None of these

(xliv) When transition between two polymorphs is irreversible, it is called
    a) enatiotropic   b) monotropic
    c) thermotropic   d) lyotropic

(xlv) Which statement is false for amorphous solid?
    a) It is called supercooled liquid   b) They tend to flow in sufficient pressure
    c) They have a definite melting point   d) Glass is an amorphous solid

(xlvi) Due to its similar property in all direction, amorphous solid is called
    a) Isotropic   b) Anisotropic
    c) Enantiotropic   d) None of these

(xlvii) Crystalline form of novobiocin have
    a) poor water solubility   b) poor therapeutic activity
    c) both poor therapeutic activity and poor   d) None of these
    therapeutic activity

(xlviii) HLB scale was introduced by:
    a) Griffin   b) Teller
    c) Emmett   d) Brunauer

(xlix) Which of the following method is used to obtain surface tension?

a) X-ray diffraction

b) Karl Fischer method

c) Capillary rise method

d) Sedimentation method

(l) Pseudoplastic flow is typically exhibited by:

a) Emulsion

b) Polymer solution

c) Suspension

d) Ointment

(li) Which of the following surfactant also possess antibacterial activity?

a) Glyceryl monostearate

b) Quaternary ammonium compounds

c) Sodium oleate

d) Sodium lauryl sulphate

(lii) _____ is a zwitterionic surfactant.

a) SLS

b) Lecithin

c) Tween

d) Benzalkonium chloride

(liii) Sorbitan esters, used as nonionic surfactants, are:

a) Tweens

b) Spans

c) Polywaxes

d) Polyols

(liv) 180° contact angle indicates:

a) Insignificant wetting of wetting agent

b) Significant wetting of wetting agent

c) Significant flow property of powder

d) Poor flow property of powder

(lv) Birefringent property of a solid can

a) Absorb the light and reflects

b) Divide the light in two different component with same velocity

c) Divide the light in two different component with different velocity

d) Divide the light in two different component with same refractive index

(lvi) Atherosclerosis is the example of _____

a) Crystalline solid   b) Liquid crystal

c) Amorphous solid   d) None of these

(lvii) Wavelength for sodium D line is _____

a) 549 nm   b) 520 nm

c) 578 nm   d) 589 nm

(lviii) Dipole moment is present in _____

a) Polar molecule   b) Chiral carbon

c) Asymmetric molecule   d) All of these

(lix) Unit of capacitance is _____

a) Coulomb   b) Volt

c) Farad   d) None of these

(lx) Dielectric constant is high, when

a) Resistance to charge separation is high   b) Resistance to charge separation is low

c) Number of carbon atom in straight chain   d) Dipole moment is low
increased

(lxi) Surface tension denotes the

a) Adhesive force between immiscible   b) Cohesive force between immiscible
liquid   liquid

c) Cohesive force in a liquid   d) None of these

(lxii) Interfacial tension denotes the

a) Adhesive force between immiscible   b) Cohesive force between immiscible
liquid   liquid

c) Cohesive force in a liquid   d) None of these

(lxiii) Tween 80 is a surfactant of type

a) Amphi-ionic   b) Anionic

c) Cationic   d) Non-ionic

(lxiv) Which is an example of cationic surfactant?

a) Benzalkonium chloride   b) Tween 80

c) Sodium lauryl sulphate   d) Sorbitan Monooleate

(lxv) Identify the function (s) of EDTA.

a) Anti-coagulant in-vitro   b) Detoxify poisonous metal agents

c) Remove coloring impurities from antibiotic preparation   d) All of these

(lxvi) Intestinal absorption of heparin is increased due to presence of:

a) EDTA   b) SLS

c) Dioctyl sodium sulfosuccinate   d) All of these

(lxvii) Vitamin K binds with:

a) ?-1 acid glycoprotein   b) Lipoprotein

c) ?-1 globulin   d) ?-2 globulin

(lxviii) Span has

a) Low HLB value   b) Lipophilic nature

c) Hydrophilic nature   d) Both Low HLB value and Lipophilic nature

(lxix) HLB range for wetting agent is

a) 3-6   b) 2-3

c) 8-16   d) 13-15

(lxx) HLB range for solubilizing agent is

a) 3-6   b) 2-3

c) 8-16

d) 13-15

(lxxi) Chelates are. …..

a) Metal complex

b) Organic molecular complex

c) Inclusion complex

d) None of these

(lxxii) Hypotonic solution when injected in to the blood stream may cause
_____ of RBC

a) Crenation

b) Hemolysis

c) Swelling

d) All of these

(lxxiii) Freezing point of blood plasma is _____

a) $0^{\circ}c$

b) $0.5^{\circ}c$

c) $-0.52^{\circ}c$

d) $52^{\circ}c$

(lxxiv) The hydronium ion concentration of an acid was found to be $2.24*10-3$ M, calculate pH of the solution.

a) 2.65

b) 3.65

c) 8.65

d) 7.65

(lxxv) Electrometric method can measure pH in the range of….

a) 0.1-0.001

b) 0.1-0.0001

c) 0.01-0.001

d) 0.1-0.00001