PART 1(Pharmaceutics - MCQ)

**Question 1** [1.00 pt(s) **Shuffle Disabled**]

Routes of administration that avoid "first-pass" hepatic effect do not include:

- the sublingual route
- the oral route
- the transdermal route
- the inhalation route

**Question 2** [1.00 pt(s)]

"Keep the pharmaceutical product in a cool and dry place" means: Not More than

- 15° C /55% RH
- 30° C /55% RH
- 15° C /35% RH
- 30° C /35% RH

**Question 3** [1.00 pt(s)]

The use of Calcium sulfate instead of lactose as a tablet diluent can ...... drug absorption.

- Enhance
- Retard
- Prevent
- Facilitate

**Question 4** [1.00 pt(s)]

Which of the following statement is correct concerning transdermal patches?

- They are used to give a local effect
- They need patient training before use
- They are associated with bad patient compliance
- They may induce hypersensitivity skin reactions
Question 5 [1.00 pt(s)]

Vd of a drug can be used to:

- estimate the elimination rate constant
- determine the biological half-life
- calculate a reasonable loading dose
- determine the best dosing interval

Question 6 [1.00 pt(s)]

Concerning instantly disintegrating or dissolving tablets:

- They are less friable than normal tablets
- Their disintegration time is longer than 2 minutes
- They are designed to mask taste
- They can be prepared by direct compression

Question 7 [1.00 pt(s)]

Sugar-coating of tablets:

- Retains the contour of the original tablet
- Increases weight substantially by 30 to 50%
- Allows multi-particle coating
- Requires only a single step to apply

Question 8 [1.00 pt(s)]

The main difference between soft and hard gelatin capsules composition is:

- The gelatin used in manufacturing soft capsules has low bloom strength
- Hard capsules are manufactured and filled in one operation
- Shells of hard gelatin capsules are highly plasticized
- Hard gelatin capsules can be used to attain complete absorption

Question 9 [1.00 pt(s)]

The release of a drug from a dissolution controlled system is governed by:

- Fick’s law
- Higuchi law
- Noyes-Whitney law
- Degradation of the membrane

Question 10 [1.00 pt(s)]

Water/Oil emulsion base is:
Hydrophilic
Non-greasy
Poorly washable
Vehicle for hydrolysable drugs

**Question 11 [1.00 pt(s)]**

After taking a modified release tablet, the patient was frustrated since he realized a residual tablet in his feces. What kind of tablet did the patient take:

- Repeat Action Tablet
- Hydrophilic Matrix System
- Inert Plastic Matrix System
- Coated tablet

**Question 12 [1.00 pt(s)]**

All of the following factors will affect the percutaneous absorption, EXCEPT:

- Hydration of the skin
- The drug molecular weight
- The site of application
- Organoleptic properties of the drug

**Question 13 [1.00 pt(s)]**

Which skin layer usually determines drug percutaneous absorption:

- Stratum corneum
- Epidermic cellular layer
- Dermis layer
- Hypodermis layer

**Question 14 [1.00 pt(s)]**

Lanolin is an example of:

- Water Removable Bases
- Absorption Bases
- Water Soluble Bases
- Oleaginous Bases

**Question 15 [1.00 pt(s)]**

Which of the following excipients is considered as a hydrophilic base?

- White Petrolatum.
- Stearyl alcohol.
- Sodium lauryl sulfate.
**Polyethylene glycol**

**Question 16 [1.00 pt(s)]**

Which of the following preparation technique requires heating?

- Incorporation
- Fusion
- Levigation
- Roller mill

**Question 17 [1.00 pt(s)]**

All of the following compounds have been used as Skin Penetration Enhancer EXCEPT:

- Dimethyl acetamide
- Dimethyl sulfoxide
- Propylparaben
- Propylene glycol

**Question 18 [1.00 pt(s)]**

All of the following factors predict favorable transdermal drug absorption for systemic therapy EXCEPT:

- A Full hydration of the stratum corneum
- A high partition coefficient of the drug
- Molecular weight of 100 to 400
- High aqueous solubility of the drug

**Question 19 [1.00 pt(s)]**

The most striking difference between creams and pastes is:

- Creams are thicker than pastes
- Pastes are thicker than creams
- Creams are suspensions, whereas pastes are emulsions
- They are both suspensions

**Question 20 [1.00 pt(s)]**

Gel applied to the joints for reducing pain in knee joints can be classified as:

- Topical delivery system
- Transdermal delivery system
- Percutaneous absorption system
- Systemic delivery system

**Question 21 [1.00 pt(s)]**
All are features of granules EXCEPT

- Good flowability
- Compressibility
- Easily wetted
- Likely to cake or harden by storage

Question 22 [1.00 pt(s)]

Titanium dioxide is used in hard gelatin capsules to __________

- Make it opaque
- Let patients be able to see inside
- Mask taste
- Increase capsule flexibility

Question 23 [1.00 pt(s)]

Hard gelatin capsule shell has ________ percent of moisture

- 13-16%
- 30-40%
- 5-10%
- 13-20%

Question 24 [1.00 pt(s)]

The shells of soft gelatin capsules may be made elastic or plastic like, by the addition of

- Glycerin
- Povidone
- Menthol
- Starch

Question 25 [1.00 pt(s)]

All are examples of lubricants Except:

- Talc
- Magnesium stearate
- Stearic acid
- Lactose

Question 26 [1.00 pt(s)]

All are fillers that add bulkiness to compressed tablets Except:
Question 27 [1.00 pt(s) ]

All are binders of compressed tablets Except:

- gelatin
- pregelatinized starch
- Calcium phosphate
- Glucose syrup

Question 28 [1.00 pt(s) ]

Which of the following improves the flow of granules into the die cavity for compression?

- Emollients
- Surfactants
- Glidants
- Binders

Question 29 [1.00 pt(s) ]

Which of the following is the most commonly used tablet lubricant

- Talc
- Magnesium stearate
- Mineral oil
- Glycerine

Question 30 [1.00 pt(s) ]

Which of the following procedures have the shortest time for tablet manufacturing?

- Dry granulation
- Wet granulation
- Direct compression
- Lyophilization

Question 31 [1.00 pt(s) ]

All of the following are functions of lubricant in a tablet formulation EXCEPT:

- Improving the granulation’s flow
- Reducing granule adhesion onto the dies and punches
- Aiding tablet ejection from the die
Question 32 [1.00 pt(s)]

Which of the following is used as a filler in direct compression?

- Spray dried lactose
- Powdered cellulose
- Lactose monohydrate
- Starch

Question 33 [1.00 pt(s)]

The accepted weight loss for a tablet in a friability test is

- Less than 1%
- Less than 1.2%
- Less than 2%
- Less than 3%

Question 34 [1.00 pt(s)]

To aid patients breaking tablets when they have to take only a half or quarter of the tablet, tablets are

- Scored
- Crushed
- Squared
- Coated

Question 35 [1.00 pt(s)]

Which of the following dosage forms are used for localized treatment in the mouth?

- Chewable tablets
- Sublingual tablets
- Lozenges
- Gelatin capsules

Question 36 [1.00 pt(s)]

While solving pharmacokinetic questions, one assumes that instantaneous distribution to all body tissues and fluids. Which of the following describes such process?

- One-compartment model
- Physiologic model
- Two-compartment model
- Multi-compartment model
Question 37 [1.00 pt(s)]

Which of the following statements is true about the drug’s half-life?

- Increases as clearance increases
- Increases as volume of distribution increases
- Related to drug route of elimination
- Determines the loading dose

Question 38 [1.00 pt(s)]

Which of the following statement is/are true about the bioequivalence tests?

- The Area Under Curve (AUC) is a relevant measure to assess whether test and reference formulation delivers the same dose.
- AUC is a relevant measure to assess whether test and reference formulation has the same volume of distribution.
- Tmax is a relevant measure to assess whether test and reference formulation has the same rate of absorption.
- Cmax differ between test and reference formulation if both deliver same doses (assume same rate of absorption for both formulations).

Question 39 [1.00 pt(s)]

Absolute Bioavailability is the fraction or percentage of administered drug that reaches the systemic circulation via a given route as compared to what route?

- Oral
- Intravenous
- Transdermal
- Cerebrospinal fluid

Question 40 [1.00 pt(s)]

For a bitter tasted drug the best oral dosage form would be

- Solution
- Chewable tablet
- Effervescent formula
- Lozenges

Question 41 [1.00 pt(s)]

The following parenteral dosage form should have a neutral pH:

- IV
- IM
- Subcutaneous
- Intra-ocular injection
Question 42 [1.00 pt(s)]

The best dosage form for drugs with high first pass metabolism is:

- Capsules
- Suppositories
- Sublingual tablets
- Chewable tablets

Question 43 [1.00 pt(s)]

For drug X, the following oral dosage form would have the fastest onset:

- Compressed tablet
- Hard gelatin capsule
- Solution
- Suspension

Question 44 [1.00 pt(s)]

The sweetened dosage form that contains alcohol is:

- Elixir
- Syrup
- Aromatic water
- Spirit

Question 45 [1.00 pt(s)]

The following solvent is the most widely used in ear drops:

- Acetone
- Glycerol
- Ethyl alcohol
- Isopropyl alcohol

Question 46 [1.00 pt(s)]

Increasing emulsion stability can be achieved by:

- Increasing globule size
- Heating
- Addition of surfactant
- Dilution

Question 47 [1.00 pt(s)]

Solubility of most solids is highly affected by:
Question 48 [1.00 pt(s) ]

The equation that describes the rate of diffusion of drugs from solid dosage forms:

- Noyes-Whitney equation
- Henderson-Hasselbalch equation
- Fick’s law
- Stock’s law

Question 49 [1.00 pt(s) ]

One of the most disadvantages of cacao butter as a suppository base is:

- The wide interval between solidification and melting temperatures
- Miscibility in body fluid
- Higher content of saturated fatty acid
- Non-irritating effect

Question 50 [1.00 pt(s) ]

Which capsule size has the largest capacity?

- 0
- 1
- 5
- 000

Question 51 [1.00 pt(s) ]

Spansules are:

- Direct compression tablets
- Multilayered tablets
- Hard gelatin capsules
- Coated beads with different colors

Question 52 [1.00 pt(s) ]

Mottling of tablets is due to increasing of:

- Lubricant
- Coating material
- Moisture content
- Drying temperature
Question 53 [1.00 pt(s)]

Lamination of tablets is due to:

- Excessive moisture content of granules
- Excessive tablet hardness
- Excessive entrapped air
- Excessive lubricant

Question 54 [1.00 pt(s)]

Which substance is used to lubricate the mold in case of gelato-glycerin suppository

- Water
- Paraffin oil
- Stearic acid
- Soap lubricant

Question 55 [1.00 pt(s)]

Surfactants are incorporated in gelatin capsule shell to

- Avoid microbial contamination during manufacturing
- Reduce rigidity of gelatin
- Sterilize capsules at end of manufacturing process
- Enable gelatin solution to take up the shape of the mold

Question 56 [1.00 pt(s)]

A suitable oil for sustained release (long-acting) IM injections is:

- Paraffin oil
- Sesame oil
- Turpentine oil
- Cacao oil

Question 57 [1.00 pt(s)]

A special type of valve in aerosols that delivers a prearranged measured quantity of product each time the valve is evacuated:

- Foam valve
- Powder valve
- Metered valve
- Compressed gas valve

Question 58 [1.00 pt(s)]
Borate buffers can be used:

- Orally
- Rectally
- Topically
- Parenterally

**Question 59 [1.00 pt(s)]**

Adsorption of a drug on solid surfaces is inversely proportional to:

- Surface area of solids
- Temperature
- Colligative properties
- pH

**Question 60 [1.00 pt(s)]**

Plant and animal origin colors are not widely used in liquid dosage forms due to:

- Cost
- High toxicity
- Color fading
- Intense color

**Question 61 [1.00 pt(s)]**

Which HLB range could be optimal to formulate an oil/water emulsion?

- 1-2
- 4-6
- 8-18
- 30-40

**Question 62 [1.00 pt(s)]**

Vaginal tablets commonly use the following diluent:

- Sucrose
- Cellulose
- Lactose
- Calcium sulfate

**Question 63 [1.00 pt(s)]**

A drug with a Vd of 500 Liters is expected to be:

- Confined to blood plasma
Highly protein-bound
Have short half-life
Distributed to deep tissues

**Question 64** [1.00 pt(s)]

If the Clnon-renal is equal to 2X and ClT to 3X L/hr respectively, the Clrenal would be:

- 6X
- 5X
- X
- 1.5X

**Question 65** [1.00 pt(s)]

In bioequivalence testing, the only source of variability should arise from:

- Tested products
- Volunteers
- Analytical methods
- Food intake

**Question 66** [1.00 pt(s)]

Cross-linking of gelatin in hard gelatin capsules may lead to:

- Enhanced dissolution testing
- Improved gelatin solubility
- Reduced side effects
- Reduced dissolution rate of gelatin

**Question 67** [1.00 pt(s)]

All the following factors can influence drug degradation through hydrolysis except:

- Drug molecular weight
- Drug concentration
- pH
- Drug flow properties

**Question 68** [1.00 pt(s)]

Turbidity of poorly-stored Tween solution may be attributed to:

- Oxidation
- Span production
- Hydrolysis
- Polymerization
Question 69 [1.00 pt(s)]

The allowable levels of degradation products for drugs with little information on their toxicity profile is:

- 1 - 2%
- 0.2 - 0.5%
- 2 - 5%
- Not allowed at all

Question 70 [1.00 pt(s)]

Drugs formulated in sugar-coated tablets may suffer from serious bioavailability problems due to:

- Water-proofing
- Oil-sealing
- Increased wetability
- Oil-separation

Question 71 [1.00 pt(s)]

According to the biopharmaceutical classification system (BCS), a drug is considered of low solubility when its highest dose fails to dissolve in:

- 25 ml water
- 50 ml water
- 150 ml water
- 250 ml water

Question 72 [1.00 pt(s)]

When formulating a tablet that contains a polymorphic drug, the main challenge is to ......... the metastable form of the drug.

- Select
- Discard
- Dissolve
- Maintain

Question 73 [1.00 pt(s)]

Gastric emptying rate is very critical for the drug absorption from:

- Soft gelatin capsules
- Hard gelatin capsules
- Direct compressible tablets
- Enteric coated tablets

Question 74 [1.00 pt(s)]
A critical barrier facing paracellular drug delivery is:

- pH
- Tight junction
- Hydrolytic enzymes
- P-glycoprotein

**Question 75** [1.00 pt(s)]

An abnormal reaction to a normal dose of the drug is termed:

- Idiosyncrasy
- Antagonism
- Synergism
- Tolerance

**Question 76** [1.00 pt(s)]

The following is true regarding 1st order elimination rate constant ($K_e$) of drugs in the human body:

- Dependant on dose of the drug
- Dependant on route of administration
- Dependant on dosage form
- Independent of dose and route of administration

**Question 77** [1.00 pt(s)]

All the following are pharmacokinetic methods to assess bioavailability except:

- Clinical observation
- Measurement of the Plasma drug concentration
- Measurement of Urinary drug concentration
- Measurement of Saliva drug concentration

**Question 78** [1.00 pt(s)]

For a drug of 23 hr half-life, the expected complete wash-out period would be:

- 1 day
- 3 days
- 4 days
- 6 days

**Question 79** [1.00 pt(s)]

The best type of glass to use in parenteral preparations containers:
Soda lime glass
Quartz
Borosilicate glass
Treated Soda-lime glass

Question 80 [1.00 pt(s)]

One part of a sparingly soluble solid needs a number of solvent parts equal to:

- 1-10
- 10-30
- 30-100
- 100-1000

Question 81 [1.00 pt(s)]

The following alcohol is expected to have the highest water solubility:

- n-butanol
- n-pentanol
- iso-butanol
- Ethanol

Question 82 [1.00 pt(s)]

Dissolution rate of solids is inversely proportional to:

- Rate of agitation
- Temperature
- Particle size
- pH

Question 83 [1.00 pt(s)]

A good suspending agent should have:

- Newtonian flow
- Pseudoplastic flow
- Plastic flow
- Dilatants flow

Question 84 [1.00 pt(s)]

The most serious problem in suspensions is:

- Sedimentation
- Cake formation
- Flocculation
- pH change
Question 85 [1.00 pt(s)]

Upon reaching the critical micelle concentration of a surfactant:

- Solubilization is minimum
- Surface tension is minimum
- Surface tension is maximum
- pH is maximum

Question 86 [1.00 pt(s)]

To improve suspension stability the zeta potential should be:

- Reduced
- Increased
- Reversed
- Unchanged

Question 87 [1.00 pt(s)]

Purification of colloids cannot be done using:

- Simple filtration
- Dialysis
- Electro-dialysis
- Electro-decantation

Question 88 [1.00 pt(s)]

Bees wax is used in ointments as:

- Emollient and stiffening agent
- Antioxidant
- Absorption base
- Absorption base and Emulsifying agent

Question 89 [1.00 pt(s)]

During an emulsion preparation, sodium lauryl sulfate should be added:

- In the aqueous phase
- In the oily phase
- In the final emulsion
- Part in aqueous phase and part in oily phase.

Question 90 [1.00 pt(s)]

Water resistant cream is usually a:
Question 91 [1.00 pt(s)]

Retinoic acid cream should be applied:

- In the morning
- In the morning and evening
- In the evening
- After sunscreens

Question 92 [1.00 pt(s)]

Overmelting of cocoa butter during suppositories preparation leads to:

- Cocoa butter polymorphic transformation
- Cocoa butter decomposition
- Hard suppositories
- Cracked suppositories

Question 93 [1.00 pt(s)]

During the preparation of suppositories, refrigeration is a must for:

- All types of suppository bases
- Polyethylene glycol suppository bases
- Gelatoglycerin suppository bases
- Cocoa butter suppository bases

Question 94 [1.00 pt(s)]

Effervescent granules should consist of the following effervescent base:

- Sodium bicarbonate and sucrose
- Sodium bicarbonate, citric acid and sucrose
- Sodium bicarbonate, sodium hydroxide and sucrose
- Sodium bicarbonate, citric acid, sodium hydroxide and sucrose

Question 95 [1.00 pt(s)]

Solid dispersions consisting of a water soluble carrier and a drug will tend to:

- Improve the dissolution rate of the drug
- Reduce the dissolution rate of the drug
- Improve drug stability
Question 96 [1.00 pt(s)]

Pharmacokinetics refers to the relationship of drug

- Dose to drug concentration in plasma
- Concentrations to drug effect
- Dose to drug clearance at the eliminating organs
- Dose to drug effect

Question 97 [1.00 pt(s)]

Which one from the following factors will not affect drug absorption?

- Gastric motility
- Blood flow
- Food intake
- Drug elimination half-life

Question 98 [1.00 pt(s)]

How does the glomerular filtration rate (GFR) change after the age of 40?

- Increase 1% each year
- Increases 2% each year
- Decreases 1% each year
- Decreases 2% each year

Question 99 [1.00 pt(s)]

The following table represents data of a:

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<thead>
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<th>C₀ (M/L)</th>
<th>0.2</th>
<th>0.4</th>
<th>0.6</th>
<th>0.8</th>
<th>1.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>T₁/₂ (min.)</td>
<td>100</td>
<td>50</td>
<td>33</td>
<td>25</td>
<td>20</td>
</tr>
</tbody>
</table>

- Zero order reaction
- First order reaction
- Second order reaction
- Pseudo Zero order reaction

Question 100 [1.00 pt(s)]

Which of the following describes minimal effective concentration (MEC)?

- The minimal drug plasma concentration that can be detected
- The minimal drug plasma concentration to enter tissues
- The minimal drug plasma concentration to interact with receptors
- The minimal drug plasma concentration to produce effect
Question 101 [1.00 pt(s)]

Which of the following drug permeation mechanisms uses the Henderson-Hasselbalch equation for the ratio of solubility for the weak acid or weak base?

- Aqueous diffusion
- Lipid diffusion
- Carrier molecules
- Endocytosis and exocytosis

Question 102 [1.00 pt(s)]

Which of the following drug permeation mechanisms is used for peptides, amino acids, and other large or insoluble molecules?

- Aqueous diffusion
- Lipid diffusion
- Carrier molecules
- Endocytosis and exocytosis

Question 103 [1.00 pt(s)]

Which of the following is NOT needed for drug bioequivalence?

- Same strength or concentration
- Same dosage form
- Same route of administration
- Same side effects

Question 104 [1.00 pt(s)]

For intravenous (IV) dosages, what is the bioavailability assumed to be?

- 0%
- 25%
- 75%
- 100%

Question 105 [1.00 pt(s)]

For a measured bioavailability, generic drug to be bioequivalent to an innovator drug (per FDA), it must be in of subjects to fall within of the mean of the test population

- 50; 50 %
- 80; 20 %
- 20; 80 %
- 95; 5 %

Question 106 [1.00 pt(s)]

Which of the following is NOT a pharmacokinetic process?

- Alteration of the drug by liver enzymes
- Drug metabolites are removed in the urine
Movement of drug from the gut into general circulation
The drug causes dilation of coronary vessels

**Question 107 [1.00 pt(s)]**

Which of the following can produce a therapeutic response? A drug that is:

- Bound to plasma albumin
- Concentrated in the bile
- Concentrated in the urine
- Unbound to plasma proteins

**Question 108 [1.00 pt(s)]**

Which of the following describes most correctly steroid hormones with respect to their ability to gain access to intracellular binding sites?

- They cross the cell membrane via aqueous pores
- They have a high permeability coefficient
- They are passively transported via membrane carriers
- They require vesicular transport

**Question 109 [1.00 pt(s)]**

Which of the following statements concerning the bioavailability of a drug is correct?

- It is strictly dose-dependent
- It depends on the route of administration
- It is increased by the first pass hepatic effect
- It remains the same after a change of excipient

**Question 110 [1.00 pt(s)]**

Two patients are receiving a constant I.V. infusion of a drug M. Patient A received a loading dose (Css Q, Vd), while Patient B did not. Assume that the drug disposition can be described by a one compartment model. At what time would steady-state plasma concentrations of the drug be obtained for Subject A?

- Immediately
- After 2 half-lives
- After 7 half-lives
- It would depend on the half-life and infusion rate of the drug M

**Question 111 [1.00 pt(s)]**

All the following physiologic changes may occur in elderly patients EXCEPT:

- A decrease in GFR
- A decrease in gastric pH
- A decrease in serum albumin
- A decrease in hepatic mass

**Question 112 [1.00 pt(s)]**
What would be the dose of a drug to be administered to achieve a target concentration of 10 µg/L if the volume of distribution (Vd) is 350 liters?

- 350 µg
- 350 mg
- 3.5 mg
- 35 µg

**Question 113 [1.00 pt(s)]**

The elimination half-life of quinidine sulfate (F = 0.8, 1st order reaction) is almost 6h. What would be the percentage of the drug remaining in the body 12 hours after the administration of 100 mg IV bolus:

- 12.5%
- 25%
- 50%
- 75%

**Question 114 [1.00 pt(s)]**

A 40mg of a drug is administered by IV bolus. Its initial plasma concentration (Co) is 5 mg/L. Its plasmatic half-life is 25 hours. The volume of distribution of this drug is:

- 125 liters
- 25 liters
- 8 liters
- 5 liters

**Question 115 [1.00 pt(s)]**

The pharmacokinetics of a new drug was studied in healthy volunteers. It was found that the drug follows first-order, one-compartment model kinetics and has a volume of distribution of 100 L. After the oral administration of 200 mg, the theoretical plasma concentration at time 0 turned out to be 1 mg/L. Which of the following is most likely the oral bioavailability of the drug?

- 0.1
- 0.5
- 0.8
- 1.0

**Question 116 [1.00 pt(s)]**

A 22-year-old man suffering from adult autism and violent behavior started a treatment that included buspirone, a drug with a large first-pass effect. Which of the following pharmacokinetic properties of the drug is most likely affected by this large first-pass effect?

- Volume of distribution
- Oral bioavailability
- Renal clearance
- Sublingual bioavailability
Question 117 [1.00 pt(s)]

A 52-year-old woman suffering from rheumatoid arthritis started a treatment that included Infliximab, a monoclonal antibody against tumor necrosis factor-α (TNF-α). The drug has a volume of distribution of about 3 L. Which of the following is most likely the main site of distribution of this drug?

- Fat tissue
- Plasma
- Extracellular fluids
- Cell cytosol

Question 118 [1.00 pt(s)]

The dissolution rate of a substance depends on all the following factors EXCEPT:

- The dosage form of the substance
- The type of the dissolution apparatus
- The physicochemical characteristics of the substance
- The pharmacodynamic properties of the substance

Question 119 [1.00 pt(s)]

In zero order reaction, the rate of transfer is:

- Variable and independent of the concentration
- Constant and concentration-dependent
- Variable and concentration-dependent
- Constant and independent of the concentration

Question 120 [1.00 pt(s)]

BCS classification takes into account the following properties of a drug EXCEPT

- Solubility
- Dissolution
- Permeability
- Therapeutic index

Question 121 [1.00 pt(s)]

Which of the following conditions is not necessary to take in consideration prior the establishment of an in vivo/in vitro level A correlation?

- The preexistence of the PK/PD relationship
- The release of the active ingredient is the limiting factor
- The linearity of the rate input of the active ingredient
- May be considered after several administrations

Question 122 [1.00 pt(s)]

Which of the following statements is correct?
The equation $C_p = C_{p0} - kt$ is for first-order elimination.
The equation $\ln C_p = \ln C_{p0} - kt$ is for zero-order elimination.
The equation $C_p = Ae^{-kt} + Bt$ is for one-compartment model.
The half-life of a one-compartment model is determined by $t_{1/2} = 0.693/k$.

**Question 123 [1.00 pt(s)]**

Which of these statements concerning flip-flop is incorrect:

- Usually used when the absorption half-life is greater than the elimination half-life
- Concerns particularly the sustained-release preparations
- It often results with an increase of $T_{max}$
- It often results with a decrease of $C_{max}$

**Question 124 [1.00 pt(s)]**

Drug D has a Clearance of 4 L/hr and a volume of distribution of 250 L. What is the drug half-life?

- About 6 minutes
- About 24 hours
- About 2.5 hours
- About 40 hours

**Question 125 [1.00 pt(s)]**

Gels can be used to administer medications in all of the following, except:

- Orally
- Vaginally
- Topically
- Subcutaneously

**Question 126 [1.00 pt(s)]**

What would be the maximum beyond use date of an extemporaneous aqueous solution?

- 3 months
- 1 month
- 14 days
- 6 months

**Question 127 [1.00 pt(s)]**

Which of the following is not correct about emulsions:

- Can be used topically, orally, and intravenously
- Can be flavored as to overcome taste problems
- Are thermodynamically stable with a two-phase system
- Some emulsions can be self-emulsifying
Question 128 [1.00 pt(s)]

Which of the following options does not usually necessitate a preservative?

- Otic preparations
- Nasal preparations
- Single-dose ophthalmic preparations
- Multi-dose ophthalmic preparations

Question 129 [1.00 pt(s)]

Which of the following dosage forms would be suitable for the administration of medications to treat a systemic condition?

- Ophthalmic preparations
- Otic preparations
- Vaginal ovules
- Rectal suppositories

Question 130 [1.00 pt(s)]

Which of the following agents can serve as a humectant, a wetting agent, a lubricant, and a preservative?

- Gelatin
- Alcohol
- Glycerin
- Mineral oil

Question 131 [1.00 pt(s)]

Hair growth agents include all of the following except

- Vasodilators
- Hair follicle stimulants
- Nourishing agents
- Exfoliating agents

Question 132 [1.00 pt(s)]

Which one of the following statements is not considered a criterion of an appropriate solvent?

- It should be inert
- It should dissolve the solute completely
- When it is heated, it should remain safe and nontoxic
- It should have a synergistic effect with the active ingredient.

Question 133 [1.00 pt(s)]

Give an example of a solvent that is intended for internal use in the preparation of non-aqueous solutions.

- Methyl alcohol
Question 134 [1.00 pt(s)]

Which solution has the largest osmolarity?

- 0.20 M KBr in water
- 0.20 M MgCl₂ in water
- 0.20 M CH₃OH in water
- 0.20 M Na₃PO₄ in water

Question 135 [1.00 pt(s)]

A solution is saturated:

- When we need to heat for the dissolution to happen
- When the solute is soluble up to 10 g/l
- When we cannot dissolve additional solute
- When it is prepared with a buffer

Question 136 [1.00 pt(s)]

Concerning solubility, which of the following is true?

- Solid/liquid: increase of temperature ---> decrease of solubility
- Liquid/liquid: increase of temperature ---> decrease of solubility
- Gaz/liquid: increase of temperature ---> increase of solubility
- Gaz/liquid: increase of temperature ---> decrease of solubility

Question 137 [1.00 pt(s)]

You have a mixture that is a combination of two or more substances, and it looks the same throughout, even under an electronic microscope. What is the term for that mixture?

- a dispersed system
- an emulsion
- a suspension
- a solution

Question 138 [1.00 pt(s)]

A transdermal patch:

- Is used to have a local effect
- Needs a complex patient training for use
- Is associated with bad patient compliance
- May induce hypersensitivity reactions

Question 139 [1.00 pt(s)]

Intradermal route of administration:
Used only for large volumes
Preparations must be sterile
Is an enteral route of administration
Has the best drug absorption profile

Question 140 [1.00 pt(s)]

Concerning the nasal drug delivery systems:

- The bioavailability of smaller drug molecules should be improved by means of absorption enhancers
- The concentration of the absorption enhancer used should be high enough to modify the nasal cavity properties for at least 3 to 4 months after use
- The absorption enhancer used should not be irritating
- Trapping of the drug by the nasal mucus will increase its systemic effect

Question 141 [1.00 pt(s)]

All the following statements concerning nasal sprays are true except:

- They undergo quick loss after administration
- They consist of atomized jet of liquid
- The drug is put in a solution or suspension
- They have a better absorption than nasal drops

Question 142 [1.00 pt(s)]

The characteristics of nasal gels over solutions include:

- Lower absorption
- More post-nasal drip
- More anterior leakage of the formulation
- Higher residence time

Question 143 [1.00 pt(s)]

Which one of the following statements is true regarding nasal systemic absorption?

- Higher the hydrosolubility, better the absorption
- Lower the molecular weight, higher the leakage loss
- Higher the susceptibility to enzyme degradation, lower the absorption
- Higher the molecular weight, better the absorption

Question 144 [1.00 pt(s)]

Which one of the following statements is true regarding absorption of drugs after pulmonary administration?

- Absorption is higher at the trachea level due to large surface of contact
- The tightness of cell junctions goes down from a maximum in the trachea to a minimum in the distal airways
- Macrophages present at the alveoli level increase drugs bioavailability
- There is no real absorption after pulmonary administration
Question 145 [1.00 pt(s)]

The patient dependent factors that affect pulmonary drugs absorption include all of the following except:

- Compliance
- Weight
- Coordination of aerosol generation with inspiration
- Inhaled volume

Question 146 [1.00 pt(s)]

Which one of the following statements about mucociliary clearance is true?

- Mucociliary clearance is relevant in otic and ocular routes of drugs administration
- Mucociliary clearance includes the role of macrophages in the lungs alveoli
- Mucociliary clearance usually increases drugs bioavailability
- Mucociliary clearance is a limiting factor for absorption of drugs to the blood

Question 147 [1.00 pt(s)]

Concerning nebulizers:

- They deliver the total quantity of a drug in seconds
- They are specifically used for small drug doses
- They do not require propellant
- They require patient coordination

Question 148 [1.00 pt(s)]

Concerning Pre-metered DPIs (Dry powder inhalers):

- The medication is most commonly stored in solution
- They include previously measured doses or dose fractions
- They need a propellant gas
- They have an internal reservoir containing sufficient formulation for multiple doses

Question 149 [1.00 pt(s)]

Sugar-coating of tablets:

- Retains the contour of the original tablet
- Increases weight substantially by 30 to 50%
- Allows multi-particulate coating
- Requires a single step only to apply