



PHYSICAL PHARMACEUTICS MCQ

1 A vapor is:

- i) A very dense gas
- .ii) A gas with weak Vander Waal forces
- iii) A gas that is normally a liquid
- iv) A liquid that is normally a gas

ans iv) A liquid that is normally a gas

2). Polymorphism refers to compounds having:

- i) Different stereochemistry
- iii) Different composition)
- ii) Different crystal structure
- iy) all of the above

ans Different crystal structure

3). The maximum temperature at which the two phase region exists in a mixture of two partially miscible liquids

known as:

- I. Lower concentration temperature
- II. Upper concentration temperature
- III. Critical temperature
- IV. Kraft point

ANS Kraft point

4). Amorphous form of a drug dissolves more than the crystalline form:



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- i) Slower
- ii), Faster
- iii) Equal to
- iv) Do not dissolve.

Ans Faster

5). The kind of liquid crystal consists of parallel molecules in layers.

- i) Cholesteric
- ii) Nematic
- iii) Smectic)

ans Smectic

6). The change of state from a solid directly to a gas is known as:

- i) Fusion
- jii) Sublimation
- iv) Evaporation
- ii) Boiling

ANS Sublimation

7). The following characteristics are NOT shared by liquids and gases?

- i) Ability to diffuse
- ii) Indefinite volume
- iii) Indefinite shape
- iv) Fluidity

ANS Indefinite shape



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8). The process of converting ice to water by the application of heat proceeds with

- i) An increase in energy and a decrease in entropy
- ii) An increase in energy and an increase in entropy
- iii) A decrease in energy and a decrease in entropy
- iv) A decrease in energy and an increase in entropy)

ANS An increase in energy and an increase in entropy

9). Mesomorphic substances:

- i) Are in between solids and liquids
- ii) Are nematic
- iii) Are Synectic

ANS i) Are in between solids and liquids

10). The kind of liquid crystal consists of parallel molecules in layers.

- i) Cholesteric
- ii) Nematic
- iii) Smectic
- iv) All of the above

ANS Smectic

11). The change of state from a solid directly to a gas is known

- i) Fusion
- ii) Boiling
- iii) Sublimation



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iv) Evaporation gases.

ANS iii) Sublimation

12). The following characteristics are NOT shared by liquids and

ii) Indefinite volume

i) Ability to diffuse

iii) Indefinite shape

iv) Fluidity

ANS i) Ability to diffuse

13). The process of converting ice to water by the application of heat proceeds with.

i) An increase in energy and a decrease in entropy

ii) An increase in energy and an increase in entropy

iii) A decrease in energy and a decrease in entropys

iv) A decrease in energy and an increase in entropy)

ANS An increase in energy and an increase in entropy

14). An ice is melting to form water at constant pressure, which of the following holds good.

i) The entropy of the system decreases

ii) The density decreases

iii) The temperature of the system remains constant

iv) The temperature of the system increases

ANS iv) The temperature of the system remains constant

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15). How does vapour pressure react to increased temperature

- i) The vapor pressure is decreased
- ii) The vapor pressure is increased
- iii) The vapor pressure does not change unless the

ANS The vapor pressure is increased

16). The quantity of heat absorbed when a change of state from liquid to vapor occurs at its boiling point without changing the temperature of the material is known as:

- i) Latent heat of fusion
- ii) Latent heat of vaporization
- iii) Latent heat of sublimation
- iv) latent heat of condensation

ANS ii) Latent heat of vaporization

17). A eutectic is

- i) A mixture of two compounds with a sharp melting point higher than those of either component
- ii) A mixture of two compounds with a sharp melting point lower than those of either component
- iii) A mixture of two compounds with a sharp melting point equal to that of either component
- iv) A mixture of two compounds with a density lower than those of either component

ANS ii) A mixture of two compounds with a sharp melting point lower than those of either component



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18) Surfactants are characterized by the presence of

- i) Hydrophobic groups in the molecule
- ii) Hydrophilic groups in the molecule
- iii) Both hydrophobic and hydrophilic groups in the same molecule
- iv) Negative charges in the molecule

ANS Both hydrophobic and hydrophilic groups in the same molecule

19) The temperature above which cloudiness suddenly appears for non-ionic surfactants in solution is known as

- I. Cloud point
- II. Eutectic point
- III. Isoelectric point
- IV. Thermal point

ANS Cloud point

20). Detergents usually have an HLB value in the range of

- i) Cloud
- ii) Krafft's point
- iii) Critical micellar concentration
- iv) Triple point

ANS Critical micellar concentration



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21). Surfactants having an HLB value of more than 16 are useful as

- i) Solubilizing agents
- ii) Detergents
- jii) Antifoaming agents
- iv) wo emulgents

ANS Solubilizing agents

22). Chemically, spans are called as

- I. Sorbitol esters of fatty acids
- II. Polyoxymethylene sorbitol esters of fatty acids
- III. Fatty acid-polyethylene glycol esters
- IV. iv) Alcohol-polyethylene glycol esters

ANS Sorbitol esters of fatty acids

23). The concentration of surfactant at which it begins to form micelles is known as

- I. Krafft's point
- II. Cloud point
- III. Spreading coefficient
- IV. Critical point

ANS Krafft's point

24). The surface tension of liquids is,

- I. Zero
- II. critical temperature



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- III. Oval
- IV. Linear

ANS Linear

25). For the proper wetting of solids by liquids, the contact angle should be nearly

- I. 90
- II. 0°
- III. 270
- IV. 180°

ANS 90

26). The following electron acceptor is capable of forming organic molecule complexes.

- I. Carbon tetrachloride
- II. Pieric acid
- III. Benzene
- IV. toluene

ANS Carbon tetrachloride

27) The following can be categorized as a chelate.

- ii) Haemoglobin
- i) Cisplatin
- iv) Ferrocene
- iii) Povidone-iodine

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ANS Cisplatin

28) DI A is an example of

1. Bidentate ligand
2. Tetradentate ligand
3. Hexadentate ligand

ANS Bidentate ligand

29) The following is not a multidentate ligand?

DEDA

1. Ammonia
2. Deferoxamine
3. Dimethylglyoxime

ANS Ammonia

30). The property of drug molecules that is usually modified by complexation is

1. Particle size
2. Particle shape
3. Solubility
4. All of the above

ANS Solubility

31). In a metal complex, the metal ion and ligand respectively are

- i) Lewis acid and base



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- ii) Lewis base and acid
- iji) Nucleophile and electrophile
- iv) Donor and acceptor

ANS Lewis acid and base

32). The pH value is calculated mathematically at the

- i) Negative log of the hydroxyl ion (OH) concentration
- ii) Log of the hydroxyl ion (OH) concentration
- iii) Negative log of the hydrogen ion (H⁺) concentration
- iv) Log of the hydrogen ion (H⁺) concentration

ANS Negative log of the hydroxyl ion (OH) concentration

33). Which of the following is a colligative property

- i) Osmotic pressure
- ii) Dissociation of a solute
- iii) Solubility of a solute
- v) Hydroxyl ion (OH) concentration

ANS Osmotic pressure

34). The pI of a pharmaceutical buffer system can be calculated by:

- i) pH partition theory
- ii) Michaelis Menten equation
- iii) Henderson Hasselbalch equation
- iv) Noyes Whitney equation



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ANS Henderson Hasselbalch equation

35). The term applied for two solutions having the same osmotic pressure is

- i) hypobaric solutions
- ii) Isotonic solutions
- iii) Hypertonic solutions
- iv) Heptoic solution

ANS Isotonic solutions

36). Buffer solutions...

- j) are strong acids
- ii) resist change in pl
- i) increase the pII of a solution

ANS resist change in pl

37). If the osmotic pressure of a solution is equal to the osmotic pressure of plasma.

- I. Decrease the pH of a solution then it is said to be:
- II. Isotonic solution
- III. Isobaric solution
- IV. Hypertonic solution

ANS Isotonic solution



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38). The buffer index can be defined as the ratio of the increment of strong base (or acid) to

- i) Change in pl
- ii) Change in buffer capacity
- iii) Change in osmotic pressure
- ii) Change in viscosity

ANS Change in buffer capacity

39). Buffers present in human plasma include:

- i) Carbonates
- ii) Carbonic acid
- iii) Acetates
- iy) Both (a) and (b)

ANS Both (a) and (b)

40). The change of state from a solid directly to a gas is known as: ii) Boiling

- i) Fusion
- .jji) Sublimation
- iv) Evaporation

ANS Sublimation