
Pharmaceutics–I

Chapter—1

Different Dosage Forms

1. Which of the following oral liquid formulations which would be considered as an oropharyngeal formulation?
(a) Syrup (b) Elixir
(c) Mouthwash (d) Linctus
2. Which of the following formulations would not be applicable to ocular administration?
(a) Solution (b) Liniment
(c) Suspension (d) Ointment
3. A tablet to treat a headache must first be dissolved in water before swallowing. Which one of the following best describes this type of tablet?
(a) Modified release (b) Oral disintegrating
(c) Effervescent (d) Buccal
4. Capsules normally fall into two main categories. Which are they?
(a) Hard gelatin capsules and soft gelatin capsules
(b) Hard gelatin capsules and layered capsules
(c) Soft gelatin capsules and compressed capsules
(d) Compressed and layered capsules
5. Intravenous, intramuscular and subcutaneous are all examples of which routes of administration?
(a) Pulmonary administration (b) Parenteral administration
(c) Otic administration (d) Ocular administration
6. Where is the site of administration for a dosage form that uses transdermal delivery?
(a) The eyes (b) The lungs
(c) Under the tongue (d) The skin
7. Which of the following dosage forms delivers the API to the GI tract?
(a) Rectal suppositories (b) Nasal sprays
(c) Vaginal pessaries (d) Eye drops

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- 8. Name two different types of inhaler?**
(a) MDI & API (b) IV & SC
(c) DPI & MDI (d) GIT & ATP
- 9. Nasal administration is commonly used for the relief of?**
(a) Headache (b) Cough
(c) Sore throat (d) Congestion
- 10. Ocular administration involves the treatment of which area?**
(a) The skin (b) The eyes
(c) The ears (d) The lungs
- 11. The Samhita includes reference to drugs of animals, plants and mineral origin used until the first century A (d)**
(a) Ebers (b) Charaka
(c) Hippocrates (d) Shushruta
- 12. Who is the father of medicine.....**
(a) Ebers (b) Hippocrates
(c) Egyptian (d) Pontus
- 13. Use of formulations made up of numerous plants referred as.....**
(a) Galenicals (b) Parenteral
(c) Plant Vehicles (d) Generics
- 14. The first pharmacy shop was opened in**
(a) London (b) Bagdad
(c) Bangalore (d) Damascus
- 15. The first edition of IP was published in**
(a) 1965 (b) 1975
(c) 1955 (d) 1985
- 16. The second edition of IP was published in**
(a) 1955 (b) 1966
(c) 1985 (d) 1990
- 17. The third edition of IP was published in**
(a) 1985 (b) 1990
(c) 1960 (d) 1975
- 18. The fourth edition of IP was published in**
(a) 1985 (b) 1990
(c) 1960 (d) 1996

19. The fifth edition of IP was published in
- (a) 1996 (b) 2000
(c) 2007 (d) 2010
20. The sixth edition of IP was published in
- (a) 2005 (b) 2008
(c) 2010 (d) 2012
21. The seventh edition of IP was published in
- (a) 2014 (b) 2015
(c) 2013 (d) 2000
22. The chairman of the first edition of IP was.....
- (a) Dr. B N. Ghosh (b) Dr. B. Mukherjee
(c) Dr. Nityanand (d) Mr. PrasanaTotta
23. The "Pharmacy Act" came in force in
- (a) 1947 (b) 1948
(c) 1949 (d) 1950
24. Pharmacy Council of India (PCI) was established in
- (a) 1947 (b) 1948
(c) 1949 (d) 1950.
25. What is USP?
- (a) The United States Pharmacology
(b) The United States Pharmacy
(c) The United States Pharmacopoeia
(d) The United States Pharmaceuticals
26. The First US pharmacopoeia was published in
- (a) 1820 (b) 1822
(c) 1823 (d) 1821
27. The first National formulary was published in
- (a) 1860 (b) 1885
(c) 1888 (d) 1890
28. Supplement to the first edition of IP was published in
- (a) 1960 (b) 1975
(c) 1965 (d) 1968
29. Supplement of the second edition was added in
- (a) 1960 (b) 1975
(c) 1965 (d) 1968

Answer Key

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|---------|---------|---------|---------|---------|---------|
| 1. (c) | 2. (b) | 3. (c) | 4. (a) | 5. (b) | 6. (d) |
| 7. (a) | 8. (c) | 9. (d) | 10. (b) | 11. (b) | 12. (b) |
| 13. (a) | 14. (b) | 15. (c) | 16. (b) | 17. (a) | 18. (d) |
| 19. (c) | 20. (c) | 21. (a) | 22. (a) | 23. (b) | 24. (c) |
| 25. (c) | 26. (a) | 27. (c) | 28. (a) | 29. (b) | |

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Chapter—2

Metrology

- How many mL of water must be added to 300 mL of 70% alcohol solution to make a 40% alcohol solution?
 (a) 225mL (b) 300mL
 (c) 180mL (d) 275mL
- A prescription calls for an elixir that contains 45% alcohol. On hand, you have 10% alcoholic elixir and a 75% alcoholic elixir. How many mL of the 75% elixir must be combined to make 1000 mL of 45% alcoholic elixir?
 (a) 538mL (b) 355mL
 (c) 500mL (d) 462mL
- How many ounces are there in one pound?
 (a) 18 (b) 16
 (c) 14 (d) 15
- One pound is equal to how many kilograms?
 (a) 0.482 (b) 0.454
 (c) 0.445 (d) 0.431
- One ounce is equal to how many grams?
 (a) 28.65 (b) 27.95
 (c) 28.35 (d) 28.85
- How many kilograms are there in one metric ton?
 (a) 100 kg (b) 10000 kg
 (c) 10 kg (d) 1000 kg
- One gallon is equal to how many litres?
 (a) 4.55 (b) 4.45
 (c) 4.65 (d) 4.35

8. One litre is equal to how many gallons?

- | | |
|------------|------------|
| (a) 0.2200 | (b) 0.2100 |
| (c) 0.2500 | (d) 0.2300 |

Answer Key

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|--------|--------|--------|--------|--------|--------|
| 1. (a) | 2. (d) | 3. (b) | 4. (b) | 5. (c) | 6. (d) |
| 7. (a) | 8. (a) | | | | |

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Chapter—3 Packaging of Pharmaceuticals

- Containers meant for storage of injectables are made of

(a) Lime-soda glass	(b) Type II glass
(c) Neutral glass	(d) Type I and II glass
- Air tight sealed containers are used for

(a) Tablets	(b) Injectables
(c) Capsules	(d) Liquid preparations
- Hydraulic resistance test is performed on glass in order to find out

(a) Mechanical strength
(b) Quality
(c) Alkali liberated by it
(d) Limit of Alkalinity liberated by it
- Collapsible tubes made from lead is not used for pharmaceutical packaging due to

(a) Inferior metal	(b) Risk of lead poisoning
(c) Soft in nature	(d) Not good in appearance
- Sulphur glass is prepared from soda glass by treating it's surface with -

(a) Sulphur	(b) Sulphur dioxide
(c) Sodium sulphate	(d) None of the above
- Filling of sterile containers with commercially sterile product is known as _____

(a) passive packaging	(b) active packaging
(c) intelligent packaging	(d) aseptic packaging

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7. The sealing in aseptic packaging is known as _____
(a) vacuum sealing (b) hermetic sealing
(c) closed sealing (d) thermo sealing
8. Which of the following steps is not included in aseptic packaging?
(a) Sterilizing product before filling
(b) Hermetic Sealing
(c) Aseptic filling
(d) Sterilizing product after filling
9. The first aseptic packaging of food was carried out in _____
(a) 1913 (b) 1926
(c) 1950 (d) 1974
10. _____ process is used in aseptic packaging.
(a) Autoclaving (b) Sterilization
(c) Disinfection (d) Heating
11. Which of the following is a must in food labeling?
(a) Name (b) Standard Specification
(c) Place of Origin (d) All of the mentioned

Answer Key

1. (d) 2. (b) 3. (d) 4. (b) 5. (b) 6. (d)
7. (b) 8. (d) 9. (a) 10. (b) 11. (d)

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Chapter—4
Size Reduction

1. Size reduction is done by how many methods?
(a) 2 (b) 3
(c) 4 (d) 5
2. What happens in attrition mode?
(a) Blades are used for size reduction
(b) Forceful object strikes the stationary object

- (c) Force is applied by the means of hammer
- (d) Rubbing the material between two surfaces
- 3. **What type of materials is size reduced by compression?**
 - (a) Fibrous
 - (b) Waxy
 - (c) Brittle
 - (d) None of the above
- 4. **Which of the following is counted as the advantages of size reduction?**
 - (a) Content uniformity
 - (b) Absorption is increased
 - (c) Sedimentation rate decreases
 - (d) All of the above
- 5. **Brittle drugs are size reduced by which mill?**
 - (a) Ball mill
 - (b) Hammer mill
 - (c) Fluid energy mill
 - (d) Both A and B
- 6. **Which of the following mill works on the principle of both attrition and impact?**
 - (a) Ball mill
 - (b) Hammer mill
 - (c) Cutter mill
 - (d) Pin mill
- 7. **Which of the following statement is NOT true?**
 - (a) Penetration becomes slow when particles are large
 - (b) Wet grinding is used for production of tablets
 - (c) Colloid mill is not used for dry milling
 - (d) Impact is done in 2 ways
- 8. **Roller mill works on the principle of:**
 - (a) Impact
 - (b) Compression
 - (c) Attrition
 - (d) None of the above
- 9. **Output of size reducing machine is related to:**
 - (a) Bulk density
 - (b) Ratio of feed size to product size
 - (c) Temperature
 - (d) None of the above
- 10. **Which one of these mills is used for size reduction of fibrous material?**
 - (a) Roller mill
 - (b) Hammer mills
 - (c) Cutter mill
 - (d) Ball mill

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- 11. Decrease in particle size is associated with:**
(a) Increase in solubility of solid particle
(b) Decrease in solubility of solid particle
(c) No effect on solubility of solid particle
(d) None of the above
- 12. Which mill is based for powdering hard crude drug**
(a) Edge runner mill (b) Colloidal mill
(c) Disintegrator (d) Fluid energy mill
- 13. Which one of these machine does not contain any moving part?**
(a) Ball mill (b) Disintegrator
(c) Fluid energy mill (d) Colloidal mill
- 14. Roller mill used for millings of ointment works on the principle:**
(a) Impact (b) Attrition
(c) Impact and attrition (d) None of these
- 15. Which one of these mill is used for getting very fine powders of vitamin?**
(a) Ball mill (b) Hammer mill
(c) Fluid energy mill (d) Colloidal mill
- 16. Ball mill works on the principle of:**
(a) Impact (b) Compression
(c) Attrition (d) Attrition and impact
- 17. Roller mill works on the principle of:**
(a) Impact (b) Compression
(c) Attrition (d) None of the above

Answer Key

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|---------|---------|---------|---------|---------|---------|
| 1. (A) | 2. (D) | 3. (D) | 4. (D) | 5. (A) | 6. (A) |
| 7. (B) | 8. (B) | 9. (A) | 10. (C) | 11. (A) | 12. (C) |
| 13. (C) | 14. (B) | 15. (C) | 16. (D) | 17. (B) | |

Chapter—5

Size Separation

1. **The working of mechanical sieving devices are not based on any one of the following methods.**
 - (a) Agitation
 - (b) Brushing
 - (c) Centrifugal
 - (d) Cutting
2. **In..... the sieve is mounted in a frame that oscillates back and forth.**
 - (a) Vibration
 - (b) Oscillation
 - (c) Gyration
 - (d) Sedimentation
3. **Which of the following separation technique is most suitable to remove particles of size 0.1 -1 μm ?**
 - (a) Gravity settler
 - (b) Cyclone separator
 - (c) ESP
 - (d) Fabric filter
4. **Cyclone separator is used to remove.....from the gases.**
 - (a) Gas molecules
 - (b) Particulate matter
 - (c) Both gas molecules and particulate matter
 - (d) None of these
5. **Mixtures need to be separated because**
 - (a) to remove undesirable substances
 - (b) to get desirable substances
 - (c) to obtain highly pure substances
 - (d) all of the above
6. **A solid is dissolved in water. Which one of the following methods can be used to separate it?**
 - (a) Filtration
 - (b) Decantation
 - (c) Distillation
 - (d) Evaporation
7. **A mesh which is used to separate things on the basis of their difference in size**
 - (a) sieve
 - (b) thresher
 - (c) filter paper
 - (d) none of these

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- 8. The property which forms the basis of sieving is**
(a) difference in weight (b) difference in colour
(c) difference in shape (d) difference in size
- 9. Sieve through which all particles must pass from 10**
(a) Coarse Powder (b) Moderately Coarse Powder
(c) Moderately Fine Powder (d) Fine Powder
- 10. Which of the following is not a type of sieve?**
(a) Bolting cloth sieves. (b) Bar screens.
(c) Punched plates (d) Granite Sieve
- 11. The diameter of the wire is represented by**
(a) Location (b) Oscillates
(c) Standard wire guage (d) Mesh
- 12. Sieve no. 10 contain:**
(a) 10 wiers per inch n each direction
(b) 10 meshes per inch in each direction
(c) Both (a) and (b)
(d) None of the above
- 13. Moderately fine powder must pass through sieve no:**
(a) 221 (b) 44
(c) 44 (d) 120
- 14. The limit of sieve number for coarse powder is:**
(a) 10/44 (b) 22/60
(c) 44 (d) 85
- 15. Very fine powders must pass through the sieve no:**
(a) 85 (b) 100
(c) 44 (d) 120

Answer Key

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|---------|---------|---------|---------|---------|---------|
| 1. (d) | 2. (b) | 3. (d) | 4. (b) | 5. (d) | 6. (d) |
| 7. (a) | 8. (d) | 9. (a) | 10. (d) | 11. (c) | 12. (b) |
| 13. (b) | 14. (a) | 15. (d) | | | |

Chapter—6

Mixing & Homogenization

1. **Mixing of semisolids is carried out using (M. Aulton, 2nd edition page no. 195)**
 - (a) Double cone mixer
 - (b) Rotating cube mixer
 - (c) Planetary mixer
 - (d) Fluidized bed mixer
2. **Mechanism not used in solid-solid Mixing:**
 - (a) Connective
 - (b) Shear Mixing
 - (c) Diffusion
 - (d) Tumbling
3. **Mechanism of mixing in sigma blade mixer:**
 - (a) Connective
 - (b) Tumbling
 - (c) Shearing
 - (d) Diffusion
4. **Mechanism of mixing in silverson mixer is:**
 - (a) Connective
 - (b) laminar
 - (c) Random
 - (d) Turbulent
5. **Degree of mixing is also known as:**
 - (a) Degree of Homogeneity
 - (b) Extent of mixing
 - (c) Ordered Mixing
 - (d) Random Mixing
6. **Turbine mixture is used for mixing of-----.**
 - (a) Suspension
 - (b) Semisoild
 - (c) Liquid paraffin
 - (d) Ointment
7. **Equipment used for mixing of liquid is-----.**
 - (a) Paddle mixer
 - (b) Planetary mixer
 - (c) Tumbler mixer
 - (d) None of these
8. **Which of the following randomization during mixing unit operation?**
 - (a) Dissimilar charges
 - (b) Dissimilar ions
 - (d) Dissimilar forces
 - (d) Dissimilar particles
9. **In which type of mixer, the trough is stationary?**
 - (a) Barrel mixer
 - (b) Ribbon mixer
 - (c) Double cone blender
 - (d) Zigzag mixer
10. **Solid mixing does NOT differ from liquid mixing in one of the following ways.**
 - (a) Flow currents are not possibles

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- (b) Homogeneity of components
- (c) Large sample is required for analysis
- (d) Mixing requires high power

Answer Key

1. (c) 2. (d) 3. (c) 4. (d) 5. (a) 6. (c)
7. (a) 8. (d) 9. (c) 10. (b)

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Chapter—7
Clarification & Filtration

1. In which of the following the size of particles retained is much smaller than the pore size of the medium?
(a) Batch filtration (b) Surface filtration
(c) Submerged filtration (d) Depth filtration
2. Which of the following does not influence filtration?
(a) Temperature (b) Density
(c) Viscosity (d) pH
3. The slurry is _____
(a) A suspension to be filtered
(b) A porous membrane used to retain the solids
(c) The solids which are present on the filter
(d) A clear liquid passing through the filter
4. What do you mean by filter cake?
(a) The cake which is to be filtered
(b) A porous membrane used to retain the solids
(c) The solids which are present on the filter
(d) A suspension to be filtered
5. Which of the following process is used to separate insoluble particles from liquids?
(a) Filtration (b) Extraction
(c) Drying (d) Sieving
6. In filtration, the use of 'filter aid' helps in?
(a) Reducing the filtration pressure
(b) Accelerating the rate of filtration

- (c) Depugging the filter medium
- (d) Enhancing the cake porosity in case of a dense impermeable cake
- 7. **Cloth filter is generally made of**
 - (a) canvas
 - (b) synthetic fabrics
 - (c) metal or glass fiber
 - (d) all of these
- 8. **The rate of filtration is increased by**
 - (a) Decreasing the viscosity of filtration
 - (b) Increasing the area of filter medium
 - (c) Increasing the pressure drop across the filter medium
 - (d) All the above
- 9. **Filter aid may be applied by technique:**
 - (a) Precoating
 - (b) Body -mix
 - (c) Both a and b
 - (d) None
- 10. **Effect of concentration filter aid on rate of filtration explained on the basis of :**
 - (a) Bond equation
 - (b) Kozeny equation
 - (c) Rittinger equation
 - (d) None of these
- 11. **Clarification is term used when solid content And filtrate is primary product**
 - (a) does not exceed 1
 - (b) exceed 1
 - (c) does not exceed 2
 - (d) none of these
- 12. **Pearlite used as filter aid which is:**
 - (a) Silica and aluminium silicate
 - (b) Charcoal
 - (c) Kaolin
 - (d) Gealtin
- 13. **In which type of filter, rate of filtration is low?**
 - (a) Slow sand filter
 - (b) Rapid sand filter
 - (c) Gravity filter
 - (d) Pressure filter
- 14. **Which of the following is not commonly used as a filter material in the treatment of water?**
 - (a) Sand
 - (b) Anthracite
 - (c) Crushed rock
 - (d) Garnet sand

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15. Which of the following statement is wrong regarding filtration?
- (a) It removes fine particle
 - (b) It removes suspended solids not removed by sedimentation
 - (c) It does not remove turbidity
 - (d) It removes color
16. Filter aid is used to _____?
- (a) Increase the rate of filtration
 - (b) Decrease the pressure drop
 - (c) Increase the porosity of the cake
 - (d) Act as a support base for the septum
17. In filtration, the amount of dissolved solids passing through the filters is
- (a) Difference between total solids and suspended solids
 - (b) Sum of total solids and suspended solids
 - (c) Independent of suspended solids
 - (d) None of the above
18. Which of the following is not used as filter aid?
- (a) Asbestos
 - (b) Diatomaceous earth
 - (c) Purified wood cellulose
 - (d) Rice husk
19. Traces of solids are removed from, liquid in a
- (a) Classifier
 - (b) Clarifier
 - (c) Sparkler filter
 - (d) Rotary vacuum filter
20. Which one of these dose not contain any filter medium?
- (a) Filter leaf
 - (b) Metafilter
 - (c) Filter press
 - (d) None of the above
21. Which one of these is a edge filter ?
- (a) Metafilters
 - (b) Filter press
 - (c) Filter leaf
 - (d) Filter candle
22. Which one of these industrial filter contain plate and frame?
- (a) Filter press
 - (b) Metafilter
 - (c) Filter candle
 - (d) Rotator drum filter

23. Chemically, asbestos is:
(a) Charcoal (b) Silica
(c) Cellulose (d) Aluminium silicate
24. Membrane filter is composed of:
(a) Cellulose nitrate (b) Cellulose
(c) Cellulose acid phthalate (d) None of the above
25. Which one these for bacterial filtration?
(a) Membrane filter (b) Sintered glass filter
(c) Filter paper (d) None of the above
26. Which one of these is used for the filtration of corrosive solution?
(a) Glass wool (b) Woven wool
(c) Asbestos (d) Sintered
27. Which one of these is used for the filtration of corrosive liquids?
(a) Cotton wool (b) Glass wool
(c) Wool (d) None of the above
28. Filtration through fibrous pad is based on the mechanism of:
(a) Straining (b) Impingement
(c) Entanglement (d) None of the above
29. The rate of filtration is expressed in from of:
(a) Fick's law (b) Darcy's law
(c) Stokes's law (d) None of the above

Answer Key

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|---------|---------|---------|---------|---------|---------|
| 1. (d) | 2. (d) | 3. (a) | 4. (a) | 5. (a) | 6. (c) |
| 7. (d) | 8. (d) | 9. (c) | 10. (b) | 11. (a) | 12. (a) |
| 13. (a) | 14. (c) | 15. (c) | 16. (c) | 17. (a) | 18. (d) |
| 19. (b) | 20. (b) | 21. (a) | 22. (a) | 23. (d) | 24. (a) |
| 25. (a) | 26. (d) | 27. (b) | 28. (c) | 29. (b) | |

Chapter—8

Extraction & Galenicals

1. Liquid extract contain drug and menstrum in the ratio of
(a) 1:1 (b) 1:2
(c) 2:1 (d) None of the above
2. Tincture contain drug and menstrum in the ratio of:
(a) 1:3 (b) 1:2
(c) 1:4 (d) 1:10
3. Which of these process use soxhlet extractor?
(a) Simple percolation
(b) Continuous hot percolation
(c) Infusion
(d) Double and triple maceration
4. Belladonna tincture is prepared by percolation due to its
(a) Nature of crude drug
(b) Therapeutic value of drug
(c) Chemical properties of constituent
(d) None of the above
5. Compound tincture of cardamon is prepared by a process:
(a) Double maceration (b) Precolation
(c) Triple maceration (d) Continuous hot percolation
6. In which extraction process, crude drug is imbibed initially by soaking in to menstrum for few hours?
(a) Double maceration (b) Triple maceration
(c) Simple percolation (d) Infusion
7. Unorganized drug are usually extracted by a process, called:
(a) Maceration (b) Percolation
(c) Decoction (d) Infusion
8. Tincture of orange is prepared by:
(a) Infusion (b) Precolation
(c) Decocation (d) Maceration
9. The extraction process, in which crude is kept in contact with menstrum is called:
(a) Infusion (b) Maceration
(c) Percolate (d) None of the above

10. The process of boiling drug with water for 10 to 15 minutes is called:

- (a) Decoction
- (b) Maceration
- (c) Infusion
- (d) Percolation

Answer Key

1. (a) 2. (c) 3. (b) 4. (b) 5. (b) 6. (c)
7. (a) 8. (d) 9. (b) 10. (a)



Chapter—9 Evaporation

1. Statement related to the process of evaporation that is incorrect is?

- (a) Evaporation occurs at any temperature
- (b) Evaporation takes place within liquid
- (c) Temperature may change during evaporation
- (d) No bubbles are formed in liquid during evaporation

2. Rate of evaporation is _____

- (a) directly proportional to temperature of liquid
- (b) inversely proportional to temperature of liquid
- (c) independent of temperature of liquid
- (d) directly proportional to humidity of surrounding air

3. Rate of evaporation increases as?

- (a) exposed surface area of liquid increases
- (b) exposed surface area of liquid decreases
- (c) movement of air above surface of liquid decreases
- (d) atmospheric pressure increases

4. Rate of evaporation decreases as?

- (a) temperature increases
- (b) humidity of surrounding air increases
- (c) movement of air above surface of liquid increases
- (d) atmospheric pressure decreases

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- 5. Which of the following factors do not affect the rate of evaporation?**
(a) Temperature of liquid (b) Humidity of surrounding air
(c) Depth of liquid (d) Surface of liquid
- 6. Evaporation occurs only _____**
(a) after boiling
(b) after extreme cooling
(c) at surface of a liquid
(d) if boiling occurs at atmospheric pressure
- 7. Compounds evaporating easily and giving off a smell are?**
(a) ionic compounds (b) covalent bonds
(c) metallic bonds (d) dative bonds
- 8. When heating begins in miscible solutions, vapors formed will be?**
(a) of liquid lower in boiling point
(b) of liquid higher in boiling point
(c) vapors will be of both liquids with a higher concentration of liquid having low boiling point
(d) collected in a gas syringe
- 9. Evaporation of solution of CuSO_4 helps in?**
(a) making it concentrated
(b) crystallization of CuSO_4
(c) evaporation of salt CuSO_4
(d) concentration and crystallization
- 10. Crystallization, evaporation and distillation are a means of?**
(a) separating soluble substances in solution
(b) separating insoluble substances in solutions
(c) separating filtrate from solution
(d) concentration
- 11. Which evaporators can be used when a low degree of concentration is required?**
(a) Falling film evaporator (b) Circular type evaporator
(c) Tubular type evaporator (d) Plate type evaporator
- 12. If the surface area of liquid is large then evaporation will be:**
(a) small (b) large
(c) moderate (d) slow

13. The changing of a liquid into vapors from the surface of the liquid without heating it is called
(a) expansion (b) contraction
(c) evaporation (d) fusion
14. The evaporation from the surface of any liquid depends on
(a) temperature (b) wind
(c) nature of liquid (d) all of above
15. Evaporation causes
(a) cooling (b) heating effect
(c) increase in weight (d) increase in density
16. Evaporation takes place at
(a) freezing point (b) boiling point
(c) melting point (d) all of above
17. Evaporation occurs when water changes into
(a) transpiration (b) snow
(c) solid (d) vapor
18. Evaporation is a _____ process.
(a) Cooling
(b) Heating
(c) Can't tell - it depends on the temperature
(d) Both a and c
19. Equivalent evaporation is the amount of water evaporated in a boiler from and at _____?
(a) 0°C
(b) 100°C
(c) saturation temperature at given pressure
(d) room temperature
(e) 20°C

Answer Key

- | | | | | | |
|---------|---------|---------|---------|---------|---------|
| 1. (b) | 2. (a) | 3. (b) | 4. (b) | 5. (c) | 6. (c) |
| 7. (b) | 8. (c) | 9. (a) | 10. (a) | 11. (b) | 12. (b) |
| 13. (c) | 14. (d) | 15. (a) | 16. (d) | 17. (d) | 18. (a) |
| 19. (b) | | | | | |

Chapter—10 Distillation

1. **This is not separated by distillation**
(a) chloroform and aniline (b) milk and water
(c) impurities in seawater (d) acetone and water
2. **Porcelain chips are used in the distillation flask to prevent**
(a) bumping (b) overheating
(c) uniform boiling (d) none of the above
3. **The residue left in the round bottom flask in the process of distillation is**
(a) volatile (b) non-volatile
(c) both (d) none of the above
4. **By using which of the following methods, can glycerine be purified?**
(a) simple distillation (b) steam distillation
(c) vacuum distillation (d) none of the above
5. **A method to prepare absolute alcohol is**
(a) vacuum distillation (b) fractional distillation
(c) azeotropic distillation (d) none of the above
6. **Distillation is the best method to separate liquids having sufficient difference in their**
(a) solubility (b) melting point
(c) boiling point (d) none of the above
7. **The process of heating a liquid mixture to form vapours and then cooling the vapours to get pure component is called _____**
(a) Crystallisation (b) Distillation
(c) Chromatography (d) Sublimation
8. **The distilled water is collected in _____ .**
(a) Receiver (b) Adapter
(c) Condenser (d) Round bottom flask
9. **The process of distillation is used for the liquids having _____ .**
(a) Sufficient difference in their boiling point
(b) Sufficient difference in their melting point

- (c) Sufficient difference in their solubility
 - (d) None of the mentioned
- 10. In distillation, overhead product contains**
- (a) only one component
 - (b) two components
 - (c) any number of components
 - (d) only saturated liquid
- 11. With increase in pressure, the relative volatility for a binary system**
- (a) increases.
 - (b) decreases.
 - (c) remains same.
 - (d) either (1) or (2), depends on the system.
- 12. As the reflux ratio in a distillation column is increased from the minimum, the**
- (a) slope of the operating line in stripping section decreases.
 - (b) number of plates decreases very slowly first and then more and more rapidly.
 - (c) total cost first decreases and then increases.
 - (d) liquid flow increases while the vapor flow decreases for a system.
- 13. As the reflux ratio in a distillation column is increased from the minimum, the**
- (a) slope of the operating line in stripping section decreases.
 - (b) number of plates decreases very slowly first and then more and more rapidly.
 - (c) total cost first decreases and then increases.
 - (d) liquid flow increases while the vapor flow decreases for a system.
- 14. Water for injection is prepared using one of the following distillation methods?**
- (a) simple distillation
 - (b) flash distillation
 - (c) fractional distillation
 - (d) steam distillation
- 15. In distillation apparatus condenser function as one of the following**
- (a) heat exchanger
 - (b) energy exchanger
 - (c) liquid exchanger
 - (d) material exchanger

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- 16. Claisen flask for the distillation consists of one of the following number of necks?**
(a) 2 (b) 1
(c) 3 (d) 4
- 17. Which type of distillation is known as evaporative distillation?**
(a) molecular distillation (b) flash distillation
(c) fractional distillation (d) simple distillation
- 18. Differential Distillation is also known as:**
(a) Simple Distillation (b) Fractional Distillation
(c) Molecular Distillation (d) Steam Distillation
- 19. Which process is widely used to obtain Water for Injection/ Purified Water?**
(a) Steam Distillation (b) Fractional Distillation
(c) Simple Distillation (d) All of the above
- 20. A process in which the entire liquid mixture is suddenly vaporized by passing the feed from a high pressure zone to a low pressure zone:**
(a) Simple Distillation (b) Fractional Distillation
(c) Steam Distillation (d) Flash Distillation
- 21. In which process a part of the vapor is condensed and returned as liquid?**
(a) Fractional Distillation (b) Molecular Distillation
(c) Steam Distillation (d) Simple Distillation
- 22. Which process is based on the principle of Simple Distillation with some modifications?**
(a) Fractional Distillation
(b) Steam Distillation
(c) Distillation under reduced Pressure
(d) None of these
- 23. Double neck Distillation Flask is known as?**
(a) Claisen Flask (b) Round Bottom Flask
(c) Florentine Flask (d) None of the above
- 24. High Boiling liquids cannot be purified by simple distillation, since the constituents in the mixture tend to _____ at higher temperatures.**
(a) Loose moisture (b) Decompose
(c) Become Volatile (d) None of the above

Answer Key

- | | | | | | |
|---------|---------|---------|---------|---------|---------|
| 1. (b) | 2. (a) | 3. (b) | 4. (c) | 5. (c) | 6. (c) |
| 7. (b) | 8. (a) | 9. (a) | 10. (c) | 11. (c) | 12. (c) |
| 13. (b) | 14. (a) | 15. (a) | 16. (a) | 17. (a) | 18. (a) |
| 19. (c) | 20. (d) | 21. (a) | 22. (c) | 23. (a) | 24. (b) |

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Chapter—11 Drying

- Why direct heating by hot air cannot be done in some cases?**
 - The material can degrade
 - High temperature not required
 - Low temperature not required
 - Conduction gives best results
- When are drum dryers used?**
 - When the material is too thick for spray dryer and too thin for rotary dryer
 - When the material is too thick for rotary dryer and too thin for spray dryer
 - When the material is not biodegradable
 - When large crystal size is to be obtained
- How is heating achieved in drum dryers?**
 - By heating the drums
 - By conduction
 - By passing steam through hollow screws
 - By passing steam through the conveyer belt
- What is the drum dryer called if it is open to the atmosphere?**
 - Open dryer
 - Box dryer
 - Trough dryer
 - Trench dryer
- Which materials are not used in drying in a freeze dryer?**
 - Seafood
 - Fruits
 - Pharmaceuticals
 - Dyes
- How the liquid does gets separated in freeze dryer?**
 - Boiling
 - Distillation
 - Freezing and crystallization
 - Evaporation

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7. **Heat sensitive or easily oxidizable materials are dried by:**
(a) Flash dryer (b) Drum dryer
(c) Fluidized bed dryer (d) Rotary dryer
8. **With what is the feed introduced in the spray dryer?**
(a) Spray (b) Atomizer
(c) Nucleator (d) Heat exchanger
9. **What is the use of a high pressure nozzle or a whirling disk in a spray dryer?**
(a) Increasing contact time (b) Decreasing contact time
(c) Agitation (d) Atomization
10. **Which dryer used radiation for drying?**
(a) Spray dryer (b) Drum dryer
(c) Flash dryer (d) Microwave dryer
11. **Direct dryers are _____**
(a) Batch driers (b) Continuous driers
(c) Semi-batch driers (d) None of the mentioned
12. **For estimating the drier size it is necessary to know _____**
(a) Time of drying (b) Heat of drying
(c) Speed of drying (d) All of the mentioned
13. **Constant drying conditions include**
(a) Temperature constant (b) Humidity constant
(c) Velocity constant (d) All of the mentioned
14. **The value of _____ remains constant while drying if speed and direction of gas flow never change.**
(a) Mass transfer co-efficient (b) Humidity
(c) Moisture (d) None of the mentioned
15. **If the dry spot appears in the substance in the batch drying curve at _____**
(a) Critical moisture content (b) Equilibrium moisture content
(c) Bound moisture (d) Unbound moisture
16. **After critical moisture content _____ starts.**
(a) Saturated drying region (b) Unsaturated drying region
(c) Constant drying region (d) None of the mentioned
17. **After the unsaturated drying completed _____ starts to evaporate.**
(a) Bound (b) Unbound
(c) Equilibrium (d) None of the mentioned

18. In forced air-drying method the moisture moves from:
(a) Grain to air (b) Centre to grain surface
(c) Air to grain (d) All are correct
19. The drying process involves:
(a) Heat transfer (b) Mass transfer
(c) Heat and mass transfer (d) None of these
20. For air-drying the recommended normal air temperature is:
(a) 30-40°C (b) 40-50°C
(c) 50-60°C (d) 60-65°C
21. Which of the following psychrometric processes is followed by water vapor laden unsaturated air, when it is passed through solid or liquid adsorbent?
(a) Cooling and dehumidification
(b) Heating and dehumidification at almost constant wet bulb temperature
(c) Dehumidification with dry bulb temperature remaining constant
(d) None of these
22. Heat sensitive materials like certain pharmaceuticals and food stuffs can be dried in a/an _____ dryer.
(a) Indirect tray (b) Spray
(c) Freeze (d) None of these
23. With increase in the mass velocity of the gas, the rate of drying during the constant rate period _____, if the conduction and radiation through the solid are negligible.
(a) Increases (b) Decreases
(c) Remain same (d) Increases linearly
24. During the constant rate period of drying of a solid,
(a) Increased air humidity decreases the rate of drying
(b) Increasing the air temperature decreases the drying rate
(c) Surface evaporation of unbound moisture occurs
(d) None of these
25. Humidification involves mass transfer between a pure liquid phase and a fixed gas, which is
(a) Insoluble in the liquid (b) Soluble in the liquid
(c) Non-ideal in nature (d) At a fixed temperature

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26. Large scale drying of sugar is done in a _____ dryer.
(a) Spouted bed (b) Tray
(c) Rotary (d) Truck
27. The drugs which are sensitive to higher temperature are dried by the specific technique of drying process
(a) spray drying (b) vacuum drying
(c) tray drying (d) sun drying
28. Drying rate curve is plot between _____ and _____
(a) Critical moisture content, critical humidity
(b) Critical moisture content, drying rate
(c) Critical humidity, drying rate
(d) Moisture content, drying rate

Answer Key

- | | | | | | |
|---------|---------|---------|---------|---------|---------|
| 1. (a) | 2. (a) | 3. (c) | 4. (c) | 5. (d) | 6. (c) |
| 7. (a) | 8. (b) | 9. (d) | 10. (d) | 11. (a) | 12. (a) |
| 13. (d) | 14. (a) | 15. (a) | 16. (b) | 17. (a) | 18. (a) |
| 19. (c) | 20. (b) | 21. (b) | 22. (c) | 23. (a) | 24. (c) |
| 25. (a) | 26. (c) | 27. (b) | 28. (d) | | |

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Chapter—12
Sterilization

1. The mechanical means of accomplishing sterilization of fermentation media/equipment is
(a) ultrasonic (b) radiation
(c) chemical agents (d) none of these
2. The moist heat is more effective than the dry heat because the intrinsic heat resistance of vegetative cells is greatly
(a) increased in a dry state (b) decreased in a dry state
(c) increased in a wet state (d) decreased in a wet state
3. The destruction of microorganisms by steam may be described as
(a) first order chemical reaction
(b) zero order chemical reaction
(c) second order chemical reaction
(d) none of these

4. Sterilization can be carried out by
 - (a) heat
 - (b) radiation
 - (c) chemical agents
 - (d) all of these
5. The highest temperature which appears to be feasible for batch sterilization is
 - (a) 121°C
 - (b) 100°C
 - (c) 105°C
 - (d) 130°C
6. The heat conduction in dry air is
 - (a) less rapid than in steam
 - (b) more rapid than in steam
 - (c) similar to steam
 - (d) none of these
7. The mechanism of air filtration in fibrous filter is
 - (a) electrostatic attraction
 - (b) impaction
 - (c) interception
 - (d) all of these
8. The filter material used for air filtration system is/are
 - (a) glass wool
 - (b) glass fibre
 - (c) norite
 - (d) all of the above
9. Which of the following is not a type of sterilization?
 - (a) Batch
 - (b) Continuous
 - (c) Filter
 - (d) Submerged
10. What do you mean by sterilization?
 - (a) Purification of products
 - (b) Recovery of products
 - (c) Elimination of contamination
 - (d) Formulation of media
11. Which of the following instrument works on the principle of batch sterilization?
 - (a) Incubator
 - (b) Autoclave
 - (c) Centrifuge
 - (d) LAF
12. The destruction of microorganisms by moist heat is described by _____
 - (a) Zero-order reaction
 - (b) First-order reaction
 - (c) Third-order reaction
 - (d) Second-order reaction
13. If the foreign microorganism invades the fermentation, which of the following is not likely to occur?
 - (a) The medium will not allow the growth of contaminant
 - (b) The contaminant may outgrow the production organism
 - (c) The contaminant may contaminate the final product
 - (d) The contaminant may degrade the final product

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- 14. Which of the following reaction occurs during the sterilization which results in browning of media?**
(a) Sandmeyer reaction (b) Maillard reaction
(c) Cannizzaro reaction (d) Gattermann reaction
- 15. The long exposure of batch sterilization may lead to**
(a) Purification of media (b) Recovery of media
(c) Degradation (d) Good quality of product
- 16. What is the advantage of batch sterilization over continuous sterilization?**
(a) Superior maintenance of medium quality
(b) Ease of scale-up
(c) Automatic control (d) Lower equipment costs
- 17. How long does it take for the autoclave to complete its cycle?**
(a) 30-35 minutes (b) 50 min to 1 hr
(c) 15-20 minutes (d) 10-15 minutes
- 18. Which of the following articles can be sterilized in an autoclave?**
(a) Gloves (b) Culture media
(c) Dressing material (d) All of these
- 19. Which of the following disinfectants act by disrupting microbial membranes?**
(a) Cationic detergents (b) Halogens
(c) Heavy metals (d) Aldehydes
- 19. Which of the following is best to sterilize heat labile solutions?**
(a) Dry heat (b) Autoclave
(c) Membrane filtration (d) Pasteurization
- 20. The time required to kill 90% of the microorganisms in a sample at a specific temperature is the**
(a) decimal reduction time (b) thermal death point
(c) F value (d) D value
- 21. Which of the following is best used for long term storage of microbial samples when carried out properly?**
(a) Storage in a freezer at -10°C
(b) Storage in a freezer at ultra low temperatures (-70°C)
(c) Storage in a refrigerator on an agar slant
(d) Storage on a petri plate at room temperature

22. Which of the following is not a disinfectant containing a heavy metal?
- (a) Silver nitrate (b) Mercurochrome
(c) Copper sulfate (d) Chlorine
23. Which is the most important surface active disinfectants?
- (a) Amphoteric compounds (b) Cationic compounds
(c) Non-ionic compounds (d) Anionic compounds
24. Which disinfectant would be most effective against *Staphylococcus* found in a blood spill?
- (a) Phenol (b) Cetylpyridinium chloride
(c) Hexachlorophene (d) None of these
25. Which of the following substances can sterilize?
- (a) Alcohol (b) Cetylpyridinium chloride
(c) Ethylene oxide (d) Chlorine
26. Milk is pasteurized in batch method by keeping it at
- (a) 63°C for 30 minutes (b) 72°C for 60 seconds
(c) 73°C for 30 minutes (d) 72°C for 6 minutes
27. Preservation of foods by using salts and sugars works by
- (a) raising pH
(b) lowering osmotic pressure
(c) creating a hypertonic environment
(d) creating a hypotonic environment
28. Which of the following items could be sterilized by dry heat sterilization?
- (a) Intravenous (IV) solution
(b) Plastic IV bags
(c) Glass pipettes
(d) rubber gloves
29. Which of the following does not kill endospores?
- (a) Autoclave (b) Incineration
(c) Hot air sterilization (d) Pasteurization
30. Which disinfectant was the most effective against *Salmonella*?
- (a) Phenol (b) Cetylpyridinium chloride
(c) Hexachlorophene (d) Merthiolate
31. Bactericidal concentration of phenol is
- (a) 0.25% (b) 0.5%
(c) 0.75% (d) 1%

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- 32. All of the following are sporicidal except**
(a) glutaraldehyde (b) ethylene oxide
(c) formaldehyde (d) alcohol
- 33. The process of making an object free from living organisms including bacterial and fungal spores and viruses is known as**
(a) pasteurization (b) antisepsis
(c) disinfection (d) sterilization
- 34. Media containing spores and thermolabile constituents are sterilized by**
(a) pasteurization (b) UV radiation
(c) dry heat (d) tyndalization
- 35. One drawback to the use of ultraviolet light as a sterilizing agent is its**
(a) failure to kill bacteria (b) failure to kill bacterial spores
(c) failure to kill microbes in a closed environment
(d) failure to kill microbes located in the center of an object
- 36. Ethylene oxide is used to destroy or kill which of the following microbes?**
(a) Bacteria (b) Spores
(c) Fungi (d) All of these
- 37. Which of the following was the first widely used antiseptic and disinfectant?**
(a) Chlorine (b) Phenol
(c) Iodine (d) Alcohol
- 38. Microbes can be removed from a liquid solution by the process of**
(a) filtration (b) freeze-drying
(c) osmosis (d) desiccation
- 39. Which of the following is bactericidal?**
(a) Membrane filtration (b) Ionizing radiation
(c) Freeze-drying (d) Deep freezing
- 40. Which of the following process can be efficiently carried out by incineration?**
(a) Sterilization of scalpel blades and needles
(b) Sterilization of all glass syringes
(c) Sterilization of points of forceps
(d) Destruction of contaminated materials

41. Which of the following material is sterilized by heating at 160°C in a hot air oven for one hour?
 (a) Swab sticks (b) All-glass syringes
 (c) Oils and jellies (d) All of these
42. For sterilization of which material gamma rays can be used?
 (a) Catheters (b) Plastic syringes
 (c) Canulas (d) None of these

Answer Key

- | | | | | | |
|---------|---------|---------|---------|---------|---------|
| 1. (a) | 2. (a) | 3. (a) | 4. (d) | 5. (a) | 6. (a) |
| 7. (d) | 8. (d) | 9. (d) | 10. (c) | 11. (b) | 12. (b) |
| 13. (a) | 14. (b) | 15. (c) | 16. (d) | 17. (c) | 18. (d) |
| 19. (a) | 20. (c) | 21. (b) | 22. (d) | 23. (b) | 24. (d) |
| 25. (c) | 26. (a) | 27. (c) | 28. (c) | 29. (d) | 30. (d) |
| 31. (d) | 32. (d) | 33. (d) | 34. (b) | 35. (d) | 36. (b) |
| 37. (b) | 38. (a) | 39. (b) | 40. (d) | 41. (d) | 42. (d) |

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Chapter—13 Aseptic Technique

- The desire to maintain a safe laboratory environment for all begins with _____.
 (a) prevention (c) microbiology
 (b) ubiquity (d) accidents
- When a chemical splashes in the eye rinse for _____.
 (a) 10 seconds
 (c) 5 minutes
 (b) 30 seconds
 (d) 15 minutes
- Good work practices include,
 (a) smelling and tasting chemicals
 (b) not washing hands before and after lab
 (c) confining long hair and loose clothing
 (d) using damaged equipment and glassware.

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- 4. What is the name of the procedure performed under sterile conditions to eliminate contamination in hopes to obtain a pure culture of one type of microorganism?**
(a) sterilization technique (c) disinfectant technique
(b) aseptic technique (b) pathogen technique
- 5. After a biohazard spill is covered with paper towels and disinfectant solution, it must sit for _____ minutes?**
(a) 5 (c) 60
(b) 30 (d) 20
- 6. _____ is needed as a source of nutrient for the growth and reproduction of microbes.**
(a) pathogens (c) reagents
(b) bacteria (d) media
- 7. To prevent the contamination of microscopes and surrounding areas disenfect/clean used slides, prepared by student, with**
(a) 70% ethanol and lens paper
(b) acetone and lens paper
(c) 5% methylene blue and lens paper
(d) water and lens paper
- 8. Which is not considered part of a sterile field?**
(a) Draped table only at table level.
(b) Gown from waist to shoulders in front, and the sleeves.
(c) Glove of sterile person who has folded his arms.
(d) Only the center of a sterile wrapper.
- 9. The presence of only one living microorganism means an object is:**
(a) Aseptic (b) Sanitized
(c) Disinfected (d) Contaminated
- 10. Which statement concerning masks is not true?**
(a) Air must filter through the mask, not escape around it.
(b) As the mask becomes moist, filtration effectiveness decreases.
(c) Ties may be tied crisscross on top of head.
(d) Ties must be tied one on top and one behind the neck.
- 11. In draping a table, the scrub nurse drapes from _____ to _____ protecting her gloves _____.**
(a) Back, front, with a sterile towel.
(b) Front, back, by cuffing drape edge.

- (c) Front, back, by double gloving.
- (d) Side, side, by cuffing drape edge.
- 12. **The purpose of the hand scrub by the surgical team is to render their skin:**
 - (a) Sterile
 - (b) Sanitized.
 - (c) Disinfected.
 - (d) Surgically Clean
- 13. **After steam sterilization, which items should not be considered sterile?**
 - (a) Suction tips attached to tubing.
 - (b) Asepto syringes with bulbs attached.
 - (c) Cautery tips bound with rubber bands.
 - (d) All of the above.
- 14. **Because there is less chance of contamination, the preferred method of gloving is _____. For changing only a glove during a case, this method _____ can be used.**
 - (a) Open. can
 - (b) Closed. can
 - (c) Open. cannot
 - (d) Closed. Cannot
- 15. **Which directive for loading a pressure steam sterilizer is incorrect?**
 - (a) Place all linen packs on edge.
 - (b) Load liquids first to prevent spillage on packs.
 - (c) Place uncovered canisters on sides.
 - (d) Load mesh bottom instrument trays flat.
- 16. **Which statement is not is not true?**
 - (a) If in doubt about sterility of anything, consider it not sterile.
 - (b) The inside of wrapper edges are sterile.
 - (c) Sterile persons must avoid leaning over unsterile areas.
 - (d) Sterile person turns his back to an unsterile area when passing it.
- 17. **Which type of Asepsis eliminates all microorganisms?**
 - (a) Medical Asepsis
 - (b) Surgical Asepsis
 - (c) All asepsis
 - (d) None of the Above
- 18. **Which method of Asepsis allows lotion to be applied?**
 - (a) Medical Asepsis
 - (b) Surgical Asepsis
 - (c) No asepsis method allows lotion to be applied
 - (d) All asepsis methods allow lotion to be applied

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19. Which method of asepsis requires hands to be held downwards while rinsing?
(a) Medical Asepsis (b) Surgical Asepsis
(c) All asepsis methods (d) No asepsis methods
20. The chain of infection requires a means of transmission. Which of the following is NOT a means of transmission?
(a) Dirty hands (b) Air
(c) Contaminated food (d) Sneezing
21. The primary reason for aseptic procedures is to
(a) Protect patients
(b) Protect patients and health care providers
(c) Wipe out all bacteria in the office
(d) None of the above

Answer Key

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|---------|---------|---------|---------|---------|---------|
| 1. (a) | 2. (d) | 3. (c) | 4. (b) | 5. (b) | 6. (d) |
| 7. (a) | 8. (c) | 9. (d) | 10. (c) | 11. (b) | 12. (d) |
| 13. (d) | 14. (d) | 15. (b) | 16. (b) | 17. (b) | 18. (a) |
| 19. (a) | 20. (d) | 21. (b) | | | |

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Chapter—14
Tablet

1. Unequal distribution of colour in a tablet called-
(a) picking (b) mottling
(c) sticking (d) capping
2. separation of one or more layer of tablet called-
(a) sticking (b) size separation
(c) lamination (d) picking
3. which type of tablet have no specific disintegration time?
(a) lozenges (b) sublingual
(c) multilayer (d) hypodermic
4. in case of enteric coating which coating material uses-
(a) lactose (b) cellulose acetate phthalate
(c) CMC (d) stearic acid

5. Give an example of film forming polymer which is used in film coated tablet?
(a) hydroxypropyl cellulose (b) ethyl cellulose
(c) all of these above (d) none of the above
6. why diluent used in tablet formulation ?
(a) fill the bulk quantity
(b) increase the disintegration time
(c) protect the tablet from atmosphere
(d) all of the above
7. give an example of binding agent used in tablet?
(a) CMC (b) starch
(c) lactose (d) boric acid
8. why glident used in tablet formulation?
(a) reduce the intraparticle friction
(b) improve the flow property
(c) prevent the sticking of material
(d) all of the above
9. give an example of disintegrating agent in tablet formulation?
(a) cocabutler (b) starch
(c) citric acid (d) all of these above
10. In case of tablet rotary machine which amount of tablet produce in one minute?
(a) 800 (b) 1200
(c) 500 (d) 1000
11. Which step is not included in sugar coating of tablet?
(a) sub coating (b) syrup coating
(c) sealing (d) press coating
12. in case of 80mg tablet the avg weight of a tablet percentage-
(a) 10 (b) 5
(c) 7.5 (d) 2
13. in the disintegration process of enteric coating tablet the temp should maintain-
(a) $37^{\circ}+(-)2$ (b) $37^{\circ}+(-)3$
(c) $37^{\circ}+(-)1$ (d) all of the above
14. in the dissolution of tablet the temp should be maintain-
(a) $37^{\circ}+(-).5$ (b) $37^{\circ}+(-).3$
(c) $37^{\circ}+(-).6$ (d) all of the above

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- 15. in case of friability test apparatus-**
(a) 30 rpm & 200 revolution (b) 25 rpm & 100 revolution
(c) 25 rpm & 50 revolution (d) 50 rpm & 100 revolution
- 16. the sweetening agent used in chewable tablet-**
(a) lactose (b) mannitol
(c) saccharine sodium (d) sucrose
- 17. the equation which gives the rate of dissolution-**
(a) fick's law (b) Henderson
(c) noyes Whitney (d) Michaelis menten
- 18. The diameter of mesh aperture in I.P disintegration apparatus-**
(a) 2mm (b) 4mm
(c) 1mm (d) 3mm
- 19. Dose dumping is the problem of-**
(a) compressed tablet (b) suppositories
(c) controlled release tablet (d) all of the above
- 20. In sugar coating of tablet sub coating is done-**
(a) to smmothen the surface (b) prevent the moisture
(c) to round edge and tablet size
(d) none of these
- 21. Weight variations in tablet processing is caused by all of following, except :**
(a) Non -uniform of granule size distribution
(b) Poor flow of granules
(c) Higher speed of turret (d) Presence of excessive fines
- 22. Which type of coating is done to disintegrate the tablet in the intestine?**
(a) Film coating (b) Suger coating
(c) Enteric coating (d) None of these
- 23. Which type of tablet coating is done to mask the unpleasant odour and taste of the medicament**
(a) Film coating (b) Suger coating
(c) Enteric coating (d) None of these
- 24. All of these tabltes are ingested orally except:**
(a) Multilayered tablets (b) Sugar coated tablets
(c) Vaginal tablets (d) Film coated tables
- 25. All of these tablets used orally used in oral cavity except:**
(a) Buccal tables (b) Sublingual tables
(c) Chewable tables (d) Dental cones

Answer Key

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|---------|---------|---------|---------|---------|---------|
| 1. (b) | 2. (c) | 3. (a) | 4. (b) | 5. (c) | 6. (a) |
| 7. (a) | 8. (b) | 9. (d) | 10. (b) | 11. (d) | 12. (a) |
| 13. (a) | 14. (a) | 15. (b) | 16. (b) | 17. (c) | 18. (a) |
| 19. (c) | 20. (c) | 21. (c) | 22. (c) | 23. (b) | 24. (c) |
| 25. (c) | | | | | |

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Chapter—15

Processing of Capsules

- Capsules are ?**
 - Unit dosage form
 - Solid dosage form
 - Compatible with liquid filling
 - All of the above
- Green bones are used for the preparation of the Gelatin of the type?**
 - Gelatin A
 - Gelatin B
 - Gelatin C
 - None
- High bloom strength gelatin is used in the manufacturing of?**
 - Soft gelatin capsules
 - Hard gelatin capsules
 - A & B
 - None of the above
- Bloom strength is a prime test for?**
 - Powdered gelatin
 - Empty capsule shell
 - Filled capsule shell
 - Gelatin solution
- Bloom strength is tested using the instrument?**
 - Rheometer
 - Gleometer
 - Bloom meter
 - All of the above
- The following steps involved in hard gelatin capsule shells production?**
 - Dipping
 - Spinning
 - Trimming
 - All
- The shells of soft gelatin capsules may be made elastic or plastic by the addition of?**
 - Sorbitol
 - Povidone
 - Polyethylene glycol
 - HPMC

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- 8. What should be the moisture content of a hard gelatin capsule?**
(a) < 10 % (b) 10-13 %
(c) 12-15 % (d) > 16 %
- 9. What should be the moisture content of a soft gelatin capsule?**
(a) < 5 % (b) 6-10 %
(c) 9-13 % (d) > 15 %
- 10. Vegetable capsules shells are prepared with ?**
(a) Gelatin (b) Chitosan
(c) HPMC (d) None
- 11. Rotosort is a machine used to sort out?**
(a) Coated Tablets (b) Unfilled Capsules
(c) Sealed Ampoules (d) Sealed Containers
- 12. Which capsule size has the smallest capacity?**
(a) 5 (b) 4
(c) 2 (d) 0
- 13. In capsules, ROTOFIL machine is used for filling?**
(a) Powders (b) Pellets
(c) Liquids (d) Suspension
- 14. The 000 size capsules can fill the volume of?**
(a) 1.37 ml (b) 0.13 ml
(c) 0.95 ml (d) 0.25 ml
- 15. We cannot use these materials as filling material in softgels?**
(a) Hygroscopic and volatile material
(b) Aldehydes
(c) Acidic and Alkaline (d) All of the above
- 16. Tamping pin method is associated with?**
(a) Feeding (b) Sealing
(c) Separation (d) Filling
- 17. Sealing of Capsule is achieved by?**
(a) 100° C (b) 20° C
(c) 37-40° C (d) 70° C
- 18. Basic empty capsule shell are made from a mixture of _____.**
(a) sugar (b) water
(c) Galtan (d) all of above

19. Capsule are _____ to swallowed.
 (a) very difficult (b) difficult
 (c) both a & b (d) easy
20. Capsule are should be stored at _____ and _____ humidity level.
 (a) dry, low (b) dry, high
 (c) cool, high (d) cool, low

Answer Key

- | | | | | | |
|---------|---------|---------|---------|---------|---------|
| 1. (d) | 2. (b) | 3. (a) | 4. (d) | 5. (b) | 6. (d) |
| 7. (a) | 8. (c) | 9. (b) | 10. (c) | 11. (b) | 12. (a) |
| 13. (b) | 14. (a) | 15. (d) | 16. (b) | 17. (c) | 18. (d) |
| 19. (d) | 20. (d) | | | | |

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Chapter—16

Study of Immunological Products

- The branch of biology, which involves the study of immune systems in all organisms is called _____.
 (a) Zoology (b) Microbiology
 (c) Immunology (d) Biotechnology
- Which of the following immunity is obtained during a lifetime?
 (a) Acquired immunity (b) Active immunity
 (c) Passive immunity (d) None of the above.
- How many types of antibodies are there?
 (a) Five. (b) Three.
 (c) Two. (d) Four.
- Which of the following cells is involved in cell-mediated immunity?
 (a) Leukaemia (b) T cells
 (c) Mast cells (d) Thrombocytes
- Which of the following protects our body against disease-causing pathogens?
 (a) Respiratory system (b) Immune system
 (c) Digestive system (d) Respiratory system

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6. **Hepatitis is an example of _____.**
(a) Subunit Vaccine (b) Killer Vaccine
(c) Toxoids Vaccine (d) Recombinant Vaccine
7. **Which of the following statements is true about the IgM of humans?**
(a) IgM can cross the placenta
(b) IgM can protect the mucosal surface
(c) IgM is produced by high-affinity plasma cells
(d) IgM is primarily restricted in the circulation
8. **Interferons are**
(a) Cytokine barriers (b) Physical barriers
(c) Cellular barriers (d) Physiological barriers
9. **Which of the following cells of the immune system do not perform phagocytosis?**
(a) Macrophage (b) Neutrophil
(c) Eosinophil (d) Basophil
10. **Monocytes differentiate into which kind of phagocytic cells?**
(a) Neutrophil (b) B cell
(c) Macrophage (d) T cell
11. **Naturally acquired active immunity would be most likely acquired through which of the following processes?**
(a) vaccination (b) drinking colostrum
(c) natural birth
(d) infection with disease-causing organism followed by recovery.
12. **Which of the following convey the longest-lasting immunity to an infectious agent?**
(a) Naturally acquired passive immunity
(b) Artificially acquired passive immunity
(c) Naturally acquired active immunity
(d) All of these
(e) None of these
13. **Which of the following substances will not stimulate an immune response unless they are bound to a larger molecule?**
(a) Antigen (b) Virus
(c) Hapten (d) Miligen
(e) Antibody

14. **B and T cells are produced by stem cells that are formed in:**
(a) Bone marrow (b) The liver
(c) The circulatory system (d) The spleen
(e) The lymph nodes
15. **B cells mature in the..... while T cells mature in the**
(a) Thymus/bone marrow and gut-associated lymphoid tissue (GALT)
(b) Spleen/bone marrow and GALT
(c) Bone marrow and GALT/Thymus
(d) Liver/Kidneys
16. **Which of the following immune cells/molecules are most effective at destroying intracellular pathogens?**
(a) T helper cells (b) B cells
(c) Antibodies (d) Complement
(e) T cytolytic cells
17. **A living microbe with reduced virulence that is used for vaccination is considered:**
(a) A toxoid (b) Dormant
(c) Virulent (d) Attenuated
(e) Denatured
18. **B cells that produce and release large amounts of antibody are called:**
(a) Memory cells (b) Basophils
(c) Plasma cells (d) Killer cells
(e) Neutrophils
19. **The specificity of an antibody is due to**
(a) its valence
(b) The heavy chains
(c) The Fc portion of the molecule
(d) The variable portion of the heavy and light chain
20. **In agglutination reactions, the antigen is a..... in precipitation reactions, the antigen is a.....**
(a) whole cell/soluble molecule
(b) Soluble molecule/whole cell
(c) Bacterium/virus
(d) Protein/carbohydrates
(e) Protein/Antibody

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- 21. B Cells are activated by**
(a) Complement (b) Antibody
(c) Interferon (d) Memory cells
(e) Antigen
- 22. Fusion between a plasma cell and a tumor cell creates a**
(a) Myeloma (b) Natural killer cell
(c) Lymphoblast (d) Lymphoma
(e) Hybridoma
- 23. Monoclonal antibodies recognize a single:**
(a) Antigen (b) Bacterium
(c) Epitope (d) B cell
(e) Virus
- 24. Cell-mediated immunity is carried out by..... while humoral immunity is mainly carried out by.....**
(a) B cells/T cells (b) Epitopes/Antigens
(c) T cells/B cells (d) Antibodies/Antigens
(e) Antibodies/Phagocytes
- 25. The ability of the immune system to recognize self-antigens versus nonself antigen is an example of:**
(a) Specific immunity (b) Tolerance
(c) Cell-mediated immunity (d) Antigenic immunity
(e) Humoral immunity

Answer Key

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|---------|---------|---------|---------|---------|---------|
| 1. (c) | 2. (a) | 3. (a) | 4. (b) | 5. (b) | 6. (d) |
| 7. (d) | 8. (d) | 9. (d) | 10. (c) | 11. (d) | 12. (c) |
| 13. (c) | 14. (a) | 15. (c) | 16. (e) | 17. (d) | 18. (c) |
| 19. (d) | 20. (a) | 21. (e) | 22. (e) | 23. (c) | 24. (c) |
| 25. (b) | | | | | |