

1. Chemically "gelatine" is,
 - a. **Protein**
 - b. Fat
 - c. Carbohydrate
 - d. None of the Above

2. Which of the following steps are involved in manufacturing of hard gelatine Capsule Shells",
 - a. Dipping
 - b. Spinning
 - c. Trimming
 - d. **All of the above**

3. Which of the following plasticizer is preferred in Capsule manufacturing
 - a. **Sorbitol**
 - b. Povidone
 - c. Polyethylene glycol
 - d. Hydroxypropyl methylcellulose.

4. Gelatine with high bloom strength is used in the manufacturing of
 - a. Soft Gelatine Capsules
 - b. Hard Gelatine Capsules
 - c. **A & B**
 - d. None of the above

5. Smallest size of the Capsule is denoted by which number
 - a. 0
 - b. 1
 - c. 2
 - d. **5**

6. Capsules are,
 - a. Solid dosage form
 - b. Unit dosage form
 - c. Liquid filling compatible dosage forms
 - d. **All of the above**

7. Empty gelatine capsule shell can be made from
 - a. **Gelatine**
 - b. HPMC
 - c. Carrageenan

- d. All of the above
8. Capsules normally fall into two main categories, which are they
- a. **Hard gelatine capsules and soft gelatine capsule**
 - b. Hard gelatine capsules and layered capsules
 - c. Soft gelatine capsules and compressed capsule
 - d. Compressed and layered capsules
9. Empty capsule has a moisture content in the range of
- a. 60%
 - b. 12-15%
 - c. **50-70%**
 - d. 30-40%
10. Which treatment is used for solubility of gelatine
- a. Heat
 - b. **Formalin**
 - c. Water
 - d. Alcohol
11. Which of the following is a hydrophobic binder.
- a. Gelatine
 - b. Acacia
 - c. **Ethyl cellulose**
 - d. Polyvinyl pyrrolidone
12. Dissolution Test apparatus no 1 as per IP is:
- a. **Paddle**
 - b. Rotating basket
 - c. Basket
 - d. Rotating cylinder
13. The shells of soft gelatine capsules are made elastic or plastic-like, by the addition of
- a. **Sorbitol**
 - b. Povidone
 - c. PEG
 - d. HPMC
14. The rate of drug bioavailability is most rapid when the drug is form

- a. Controlled release product
- b. Hard gelatine capsule
- c. Tablet
- d. Solution**

15. _____ are solid dosage forms in which drug and/or enclosed small water-soluble shell of gelatine

- a. Capsules**
- b. Tablets
- c. Emulsions
- d. Powder

16. _____ is ingredients of opaque hard gelatine capsule.

- a. Glycerine
- b. Titanium dioxide**
- c. Sorbitol
- d. Acacia

17. Quality Control Tests for Capsules are

- a. Permeability and sealing
- b. Weight variation
- c. Potency and impurity content
- d. All of above**

18. _____ should be stored at temperature not exceeding 30°C.

- a. Tablet
- b. Capsule**
- c. Sustain Release Tablet
- d. Sublingual tablet

19. Capsule No 5 has approximately capacity.

- a. 300
- b. 200
- c. 100**
- d. 400

20. Capsule No 1 has approximately capacity.

- a. 300**
- b. 200
- c. 500

d. 400

1. Why direct heating by hot air cannot be done in some cases?

- a) **The material can degrade**
- b) High temperature not required
- c) Low temperature not required
- d) Conduction gives best results

2. When are drum dryers used?

- a) **When the material is too thick for spray dryer and too thin for rotary dryer**
- b) When the material is too thick for rotary dryer and too thin for spray dryer
- c) When the material is not biodegradable
- d) When large crystal size is to be obtained

3. How is heating achieved in drum dryers?

- a) By heating the drums
- b) By conduction
- c) **By passing steam through hollow screws**
- d) By passing steam through the conveyer belt

4. What is the drum dryer called if it is open to the atmosphere?

- a) Open dryer
- b) Box dryer
- c) **Trough dryer**
- d) Trench dryer

5. Which materials are not used in drying in a freeze dryer?

- a) Seafood
- b) Fruits
- c) Pharmaceuticals
- d) **Dyes**

6. How the liquid does gets separated in freeze dryer?

- a) Boiling
- b) Distillation
- c) Freezing and crystallization**
- d) Evaporation

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. Drying is essential after one of the following unit operations

a. Crystallisation

b. Evaporation

c. Mixing

d. Size reduction

12. For fixing the effective drying conditions, which processing factor is essential?

a. Height

b. Humidity

c. Pressure

d. Temperature

13. At a given temperature and humidity, if the moisture content of a material is greater than equilibrium moisture content, then the following process takes place

a. Absorption

b. Adsorption

c. Desorption

d. Sorption

14. Fluidized bed dryer has one of the following advantages?

a. Attrition is not observed

b. Entire material is continuously exposed to a heat source

c. Fluffy mass is formed

d. Humidity can be increased

15. Which one of the following dryer is known as lyophilizer?

a. Fluidised bed dryer

b. Freeze dryer

c. Spray dryer

d. Vacuum dryer

16. Talc has EMC of practically equal to

a. High

b. One

c. Variable

d. Zero

17. Which equipment is used for drying methylcellulose?

a. Drum dryer

b. Spray dryer

c. Tray dryer

d. Vacuum dryer

18. Migration of salts & solutes does not occur in one of the following equipment for drying

a. Freeze dryer

b. Spray dryer

c. Tray dryer

d. Vacuum dryer

19. Which one of the following types of products is having an EMC of practically zero?

a. Non-porous & insoluble

b. Non-porous & soluble

c. Porous & insoluble

d. Porous & soluble

20. Which product is not dried by a spray dryer?

a. Bacterial & viral cultures

b. Fruit juice

c. Lactose

d. Serum

1. Alcoholic solution of volatile substance is called as

- a. **Tincture**
- b. Spirit
- c. Infusion
- d. None

2. Tincture of orange is prepared by

- a. Infusion
- b. **Maceration**
- c. Percolation
- d. Decoction

3. The hydroalcoholic preparation containing therapeutic constituents of crude drugs are

- a. Extract
- b. Tinctures
- c. Infusions
- d. **Decoctions**

4. are dilute solutions containing readily soluble constituents of the crude drug.

- a. Percolation
- b. Decoction
- c. **Infusion**
- d. Maceration

5. If the drugs have a maximum therapeutic value which process is used for extraction?

- a. **Percolation**
- b. Decoction
- c. Infusion.
- d. Maceration

6. For extraction of thermolabile drugs which extraction process should be used?

A. Percolation.

B. Maceration

C. Decoction

D. Both a and b

7. The solvent used for extraction is known as....

A. Distillate

B. Extract

C. Marc

D. Menstruum

8. The inert insoluble material that remains after extraction is called...

A. Distillate

B. Extract

C. Marc

D. Menstruum

9. Identify the process used for extraction,

A. Infusion

B. Decoction

C. Digestion

D. All of the above

10. Following are the processes used for extraction except...

A. Maceration

B. Sublimation

C. Digestion

D. Percolation

11. Preparations like Infusions, decoctions, spirits, elixirs are commonly known as...

A. Pharmaceuticals

B. Galenicals

C. Nutraceuticals

D. Cosmeceuticals

12. Solvent used for extraction is,

A. Water

B. Alcohol

C. Ether

D. All of the above

13. What is the disadvantage of alcohol as a solvent for extraction?

A. Toxicity

B. Stability

C. Cost

D. Selectivity

14. Pouring water over the drugs and then allowing it to keep in contact with water usually 15 min is called_____

A. Infusion

B. Decoction

C. Percolation

D. Digestion

15. In the Process the drug is boiled with water for a mated period usually 10 min.

A. Infusion

B. Maceration

C. Decoction

D. Percolation

16. Extraction does not involve one of the following components

A. Active constituents

B. Solvent

C. Vapour

D. Crude solids

17. Removal of soluble constituents from solid or liquid with help of a suitable solvent is called —

A. Filtration

B. Size reduction

C. Mixing

D. Size separation

18. The methods of extraction are

A. Maceration

B. Percolation

C. Decoction

D. All

19. The term maceration is derived from the Latin word

A. Menstruum

B. Marc

C. Macerate

D. None

20. Exhaustive extraction is also known as

A. Maceration

B. Percolation

C. Decoction

D. Digestion

21. The solvent extraction is also called as.....

A. Liquid-Liquid extraction

B. Solid-Liquid extraction

C. Liquid extraction

D. Solid extraction

1. The process of separation of insoluble particles from suspension or slurry is called

A. Filtration

B. Sieving

C. Distillation

D. Drying

2. The separation process in which the amount of solid in a liquid is not more than 1% w/v is called

A. Clarification

B. Filtration

C. Centrifugation

D. Evaporation

3. Which of the following does not influence filtration?

A. Temperature

B. Density

C. Viscosity

D. pH

4. The rate of flow of the filtrate through the filter cake is.....to the thickness of the cake

A. Inversely proportional

B. Directly proportional

C. Remain constant

D. None of above

5. Which of the following is not a filter aid

A. Diatomaceous earth

B. Perlite

C. Cellulose

D. Cotton

6. Which of the following filtration equipment operate in operation

A. Rotary drum filter

B. Membrane filter

C. Meta filter

D. Seitz filter

7. Filter aids are added to the liquid

A. To increase the porosity

B. To increase cake permeability

C. Both A & B

D. None of above

8. Which of the following is a classification of filtration equipment?

A. Plate and frame filter press

B. Meta filter

C. Both A & B

D. Filter leaf

9. Which of the following theory not describe the rate of filtration?

A. Darcy Law

B. Poiseuille's equation.

C. Kozeny Carman equation

D. Noyes Whitney equation

10. 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

11. Screening of very diluted (approx 1% w/v) colloidal suspension is known as

a. Clarification

b. Filtration

c. Expression

d. Colation

12. Which of the following process is used to separate insoluble particles from liquids?

a. Filtration

b. Extraction

c. Drying

d. Sieving

13. Meta Filters Is Also Known As

a. Edge Filter

b. Filter press

c. Filter Candle

d. Sintered filter

14. The correct definition of filtration is:

a. When solids are present in a very low concentration, i.e., not exceeding 1.0% w/v, the process of its separation from liquids

b. When solids are present in a very low concentration, i.e., not exceeding 5.0% w/v, the process of its separation from liquids

c. When solids are present in a very low concentration, i.e., not exceeding 2.0% w/v, the process of its separation from liquids

d. When solids are present in a very low concentration, i.e., not exceeding 7.0% w/v, the process of its separation from liquids

15. Which is the principal difference in the properties that influences centrifugation?

a. Densities

b. Interfacial Tensions

c Particle size

d. Viscosities

16. is used to separate particles and fluid in a suspension.

A. Filtration

B. Size reduction

C. Mixing

D. Size separation

17. The theories of filtration are

A. Poiseuille's & Konzeny's theory

B. Darcy's law

C. Kozeny-Carman equation

D. All

18. In the equation of Poiseuille's & Konzeny's Theory, "V" stands for

A. Velocity

B. Viscosity

C. Rate of filtration/flow

D. None

19. Membrane filters are also known as

A. Microporous filters

B. Turbine filters

C. Double Cone filters

D. None

20. The mixture of silica and fluxes which is fused at high temperature to make glass is called as

A. mixer

B. frit

C. glass

D. grinder

1. _____ is a part of a quality system covering the manufacture and testing of active ingredients, and finished product.

1. GLP

2. GMP

3. GHP

4. None

2. SOPs are used to ensure consistency in daily operations. What does 'S' stand for in SOP?

1. Special

2. Standard

3. Safety

4. Sustainable

3. The "c" in "cGMP" stands for:

1. Up to date

2. Commitment

3. Current

4. Content

4. The basic operational and environmental conditions applied to produce safe foods are called:

1. HACCP

2. FSSA

3. FSSAI

4. Good manufacturing Practices

5. If a manufacturing company does not adhere to CGMP regulations

1. Any drug manufactured by such company will be considered "adulterated".

2. No action will be taken, if the drugs are safe

3. The company will be closed instantly

4. It means that there is necessarily something wrong with the drug

6. The other name for 'pre-requisite programs' is

1. Written programs

2. Implementation

3. HACCP

4. Good Manufacturing Practices

7. _____ is a part of a quality system covering the manufacture and testing of active ingredients, and finished product.

1. GLP

2. GMP

3. GHP

4. None

8. The procedure which is used to prove that the various production procedures, equipment and materials will produce accurate results is known as:

a. GMP

b. Quality Control

c. Quality assurance

d. Validation

9. What does QA and QC stand for?

- a) Quality Assurance and Queuing Control
- b) Quality Adjustment and Quality completion

c) Quality Assurance and Quality control

d) Quality Adjustment and Queuing control

10. Which of the following option is correct regarding QA and QC?

a) QC is an integral part of QA

b) QA is an integral part of QC

c) QA and QC are independent to each other

d) QC may or may not depend on QA

11. What is the first step of QA?

a) Development of standards

b) Identification of customer need

c) Servicing

d) Material control

12. What do QA and QC stand for?

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c) Quality Assurance and Quality control

d) Quality Adjustment and Queuing control

13. What is QA?

a) It is the measurement of degree to which a product satisfies the need

b) Any systematic process used to ensure quality in the process

c) Process of identifying defects

d) It is a corrective tool

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15. Which of the following option involves material and component control?

a) Development of standards

b) Development of specification

c) Quality control

d) Feedback

16. What is the first step of QA?

a) Development of standards

b) Identification of customer need

c) Servicing

d) Material control

17. of the following is an example of QA? Teyays 30

a) Verification

b) Software testing

c) Validation

d) Documentation

18. When will spills be cleaned up?

A. Right away

B. At the end of the day

C. When production slows

D. In the morning

19. Why is cleanliness so important?

A. FDA rules

B. Customer Safety

C. Staff safety

D. All of the above

20. How should you easily identify lot numbers?

A. Guess which number

B. It's in the same location on every package

C. The expiration date

D. Use the Lot Number Binder

1. The working of Fluid energy mill is based on principle of

a. Impact

b. Attrition

c. Cutting

d. Both a & b

2. Size reduction is also known as:

a. Comminution

b. Pulverization

c. Diminution

d. All of the above

3. The bell crank lever arrangement is major part of which of the following.....

a. Cyclone separator

b. Edge runner Mill

c. End runner Mill

d. Bag filter

4. The hammer mill operates on the principle of:

a. Impact

b. Attrition

c. Compression

d. Cutting

5. Ball Mill operates at the speed of?

a. Low speed

b. High speed

c. Optimum speed

d. All of the above

6. Fluid Energy Mill works on the principle of:

a. Impact & Attrition

b. Stator

c. Compression

d. Attrition

7. Fibrous drugs are milled by using:

a. Cutter mill

b. Hammer Mill

c. Fluid Energy Mill

d. Ball mill

8. Mills are not suitable for Friable (heat sensitive) materials?

a. Cutter Mill

b. Hammer mill

c. Colloidal Mill

d. All of the above

9. In Azeotropic distillation _____ remains slow

a. Heat

b. Volatility

c. Relativity Volatility

d. None of these

10. In Vacuum Distillation, Substance boils at a/an:

- a. Exact temperature
- b. temperature slightly above its boiling point
- c. temperature below its boiling point**
- d. High Pressure

11. In the fractionating column of fraction distillation, as we go higher in the column the.....?

- a. Temperature becomes lower**
- b. Temperature becomes higher
- c. minimum absorption occurs
- d. Sublimation risk increases

12. 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

13. 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

14. Which of the following is a characteristic of a horizontal tube evaporator?

- a. Agitation is provided only by bubbles leaving the evaporator as vapor**
- b. The tube bundle is arranged vertically, with the solution inside the tubes condensing outside
- c. To handle viscous solution a pump is used to force liquid upwards
- d. Also called short vertical tube evaporator

15. The (emissivity) of a black body is:

a 1

b 1.5

c 2

d. None

16. Lyophilization is also known as:

a Drying by sublimation

b Freeze drying

c Both a & b

d None

17. Mean free path is associated with which type of distillation?

a Steam

b Evaporative

c. Azeotropic

d. Fractional

18. Which one of the following rate is observed in mixing of solids?

a. First order law

b. zero order law

c. Second order law

d none

19. Unit of the rate of heat transfer is

a. Joule

b. Newton

c. Pascal

d. Watt

20. Which type of mixture is easily formed?

- a. **Positive**
- b. Negative
- c. Neutral
- d Ampholytic

21. Mechanism not used in solid-solid Mixing:

- a. Connective
- b. Shear Mixing
- c. Diffusion
- d. Tumbling**

22. Mechanism of mixing in sigma blade mixer:

- a. Connective
- b. Tumbling
- c. Shearing**
- d Diffusion

23. Mechanism of mixing in silverson mixer is:

- a. Connective
- b. laminar
- c. Random
- d. Turbulent**

24. Degree of mixing is also known as:

- a. Degree of Homogeneity**

- b.Extent of mixing
- c.Ordered Mixing
- d.Random Mixing

25. _____states that the rate of heat flow through a uniform material is proportional to the area and temperature and inversely proportional to the length of the path of flow.

- a. Newton's law
- b. Kick's law
- c. Fourier's law**
- d. Chatelier's law

26. A body whose absorptivity is constant at all wavelengths of radiation, at a given temperature is known as

- a Black Body
- b Grey body**
- c. White Body
- d Shinning body

1. Type II glass is called as

a General soda lime glass

b NP glass

c BS glass

d Treated Soda lime glass

2. Thermoplastics are (Choose correct option)

a Gets softened on heating

b can be molded

c does not degraded by repeated heating

d all of the above

3. The package that comes in contact with formulation directly is called

a Primary package

b Secondary package

c. Primary and Secondary package

d Tertiary package

4. Number '6' on plastic containers refers that it is

manufactured using

a Polyethylene

b Polystyrene

c Polyvinyl

d polypropylene

5. Culletts are

a broken glass pieces

b broken metal pieces

c broken glass and metal pieces

d broken plastic pieces

6. Regular Soda Lime Glass is - glass and releases in comparison to the treated soda lime glass

a Type II and acid

b Type II and alkali

c Type III and acid

d Type III and alkali

7. Uncoated steel is called

a Black plate

b White plate

c Tin plate

d Steel plate

8. Plastic containers are sterilized using

a Autoclave

b Bleach

c Ethylene oxide

d All of the above

9. Caps that have threads that engage with the corresponding threads on the neck of the bottle are called as

a Friction caps

b Screw caps

c Push caps

d Press on caps

10. In comparison with blister, strips occupy

a Lesser volume

b Greater volume

c Same volume

d. Too less volume

11. Double wall corrugated fiberboard has

a One liner

b Two liner

c Three liner

d Four line

12. Water-based inks are preferred over solvent based inks due to

a Lesser drying time

b More pigment solubility

c Environment friendly

d Cost effective

13. Parison is converted into plastic container by

a Blow molding

b Injection molding

c Injection and blow molding

d None of the above

14 Bubble test is used as a quality control test for

a. Sachet

b. Plastic container

c. Glass container

d. Blister pack

15. Which statement is false about the cold forming blister packs in comparison to thermoforming blister packs

- a. Faster speed of production compared to thermoforming**
- b. The lack of transparency of the package
- c. The larger size of cold forming blister card
- d. All of the above

16. Which of the following is not a component of corrugated fiber board

- A. Flute
- B. Liner
- C. Plastic wrap**
- D. Adhesive

17. Identify the packaging material that is tamper evident

- A. Aerosol
- B. Blister packs
- C. Bubble packs
- D. All of the above**

18. According to the stability studies guidelines of ICH photostability studies need to be carried out on batches of products

- a One**
- b Two
- c Three
- d Four

19. Identify the correct property of thermoset plastics

- a Highly recycled.**
- b Less resistant against high temperature

c Can be remolded or reshaped.

d May softened when heated

20. Aerosol containers are manufactured using which metal

a Tin plate

b Aluminium

c Brass

d All of these

1. Which of the following dosage form is having

maximum bioavailability?

a. Tablet

b. Parenteral

c. Emulsion

d. None of the above

2. Parenteral dosage form must be

a. Sterile

b. Clear

c. Isotonic

d. All the above

3. The usual volume for an intrathecal route of

administration is

a. 0.5-2ml

b. 2-20ml

c. 1-4ml

d. 5-10ml

4. Pka for basic drug ranges from

a. 3-7.5

b. 5-8.5

c. 7-11

d. 11-13

5. X-ray powder diffractometry of amorphous form gives-

a. Sharp peak

b. Diffused peak

c. Both sharp/diffused

d. of the above

6. In the pursuit of cGMP, consideration should be given to confirming, through adequate quality-control procedures, that the finished products have the required

a)potency

b)purity

c)quality

d)all of these

7.Modular facility design and construction

include

a)smaller rooms

b)larger rooms

c)both of these

d)none of these

8.In concert with the pursuit of cGMPs, the

pharmaceutical industries include

a)filling technologies

b)freeze-drying technologies

c)Automation

d)all of these

9.Automation includes

a)weight checking

b)inspection technologies

c)labeling and finishing operations

d)all of these

10.The preparation of a parenteral product

may encompass general areas

a)one

b)two

c)three

d)four

11.The preparation of a parenteral product

may encompass which of the following general areas?

a)Procurement

b)Processing

c)Controlling the quality

d)All of these

12. Which of the following encompasses selecting and testing according to specifications of the raw-material ingredients and the containers and closures for the primary and secondary packages?

a)Procurement

b)Processing

c)Controlling the quality

d)Packaging

13. Which of the following is responsible for the release testing required to clear the

reviewing the batch history and performing

product for shipment to users?

a)Procurement

b)Processing

c)Controlling the quality

d)Packaging

14.Components of parenteral products

include

a)formulation additives

b)vehicle(s)

c)primary container and closure

d)all of these

15. Which of the following is/are basic types of WFI distillation units?

a)the vapor compression still

b)the multiple effect still

c)RO

d)a and b

16.Co-solvents can be used to is to improve

a)Solubility

b)Dielectric constant

c)pka

d)PH

17. Chemical modification can be used to improve

a. solubility

b. Optical activity

c. Solvate formation

d. None

18. Benzalkonium chloride is generally used as

a. Preservative

b. Antioxidant

c. Surfactant

d. Solubilizing agent

19. Distillation is one of the methods of preparation

of --

a.WFI

b.Solution

c.Emulsion

d. None

20.Which of the physical form gives rapid absorption and slow duration of action?

a.Crystalline form

b.Amorphous form

c.Both a and b

d.None of the above

1. The new edition of British Pharmacopoeia is published after every:

a. 4 years

b. 5 years

c. 6 years

d. Alternate year

2. The first edition of the Pharmacopoeia of India was published in:

a. 1947

b. 1966

c. 1955

d. 1946

3. The supplement to second edition of the Pharmacopoeia of India was published in:

a. 1981

b. 1985

c. 1975

d. 1966

4. The first U.S.P. was published in:

a. English

b. French

c. Latin

d. English and Latin

5. The Indian Pharmacopoeia List was published as a supplement to:

a. **British Pharmacopoeia**

b. U.S.P.

c. Pharmacopoeia of India

d. I.P.C.

6. Apart from drugs, pharmacopeias also contain information on

(a) **Food supplements**

(b) Food additive

(c) products

(d) Foodstuffs

7. The USA pharmacopeia was founded in

(a) 1920

(b) **1820**

(c) 1790

(d) 1830

8. The international pharmacopoeia was produced by

a. International Union of Pharmacists

b. World Health Organization

c. United Nations

d. Commonwealth Union

9. The fourth edition of the British pharmacopoeia was released in

a. 1890

b. 1869

c. 1879

d. **1898**

10. The following are substances not described in pharmacopoeias except

a. Sulphur

b. Gum benzoin

c. Beeswax

d. **Salicylic acid**

11. In pharmacopoeias, saltpetre is recorded as

a. **Potassium nitrate**

b. Potassium chloride

c. Sodium chloride

d. Sodium perborate

12. Concerning pharmacopoeias, which of the following is odd?

- a. British Pharmaceutical Codex (BPC)
- b. Federal Chemical Codex (FCC)
- c. Food and Drug Administration (FDA)
- d. **United States Pharmaceutical Codex (USPC)**

13. The United States Pharmacopeia Convention is located in

- a. New York
- b. California
- c. Boston
- d. **Maryland**

14. The current edition of the British pharmacopoeia has how many volumes?

- a. 5
- b. **6**
- c. 7
- d. 8

15. The volume one and two of the British pharmacopoeia describe the

- a. **Medicinal substances**
- b. Formulated preparations
- c. Blood related preparations
- d. Immunological products

16. The first British Pharmacopoeia (B.P) was published in

- a. **1864**
- b. 1865
- c. 1867
- d. 1869

17. First United State Pharmacopoeia (U.S.P) was released IN

- a. **1820**
- b. 1826
- c. 1830
- d. 1840

18. Process of publishing the first Indian Pharmacopoeia started in the year 1944

- a. 1945
- b. 1943
- c. **1944**
- d. 1946

19. The actual process of publishing the first Indian Pharmacopoeia started under the chairmanship of

- a. **Col. R. N. Chopra.**
- b. Dr. B. N. Ghosh
- c. Dr. B. Mukherji
- d. Dr. Nityanand

20. Government of India, Ministry of Health and Family welfare publishes Indian Pharmacopoeia based on

- a. Drugs and Cosmetics Acts 1940
- b. Dangerous Drugs Act 1930
- c. Poisons Act 1919
- d. **All**

21. The first edition of the Indian Pharmacopoeia (I.P) was published in the year under the chairmanship of

- a. **1955 & Dr. B. N. Ghosh**
- b. 1966 & Dr. B. Mukherji
- c. 1955 & Dr. Nityanand
- d. 1966 & Dr. Nityanand

MULTIPLE CHOICE QUESTIONS

1. Pharmaceutical powders can be produced by

a)precipitation

b)crystallization

c)fusion

d)a and b

2.For a poorly water-soluble drug, obtained by adding water to the drug organic solution. Which of the following new technology is based on this mechanism?

a)supercritical fluid method

b)supersaturated fluid method

c)both of these

d)none of these

3.A substance maintained at a certain temperature and pressure above its critical point, which has both the properties of liquid and gas phases is known as

a)supercritical fluid

b)supersaturated fluid

c)critical fluid

d)glassy state

4.Supercritical fluid is a substitute for soluble drugs for powder generation, because the solubility of that powder in organic solvents to dissolve poorly water SCF can be easily altered by changing the

a)volume, pressure

b)temperature, pressure

c)pressure, density

d)volume, density

5.A technique to generate powders by transforming the feed from a liquid state into a dry form, by spraying the feed into a hot drying medium is called

a)Spray drying

b)Spray freeze drying

c)both of these

d)none of these

6.The feed in Spray drying can be a

a)solution

b)suspension

c)dispersion

d)all of these

7. The spray drying process mainly consists of _____ steps.

a)3

b)5

c)6

d)only one step

8. Which of the following is 1st step of spray drying?

a)Concentration

b)Atomization

c)Droplet-Air Contact

d)Droplet Drying

9. Which of the following steps in spray drying favors evaporation to a dry powder, by having optimum properties?

a)Concentration

b)Atomization

c) Droplet-Air Contact

d) Droplet Drying

e)Separation

10.Which of the following may be used for the final separation stage in spray drying?

a)Cyclones

b)bag filters

c)electrostatic precipitators

d)all of these

11.A technique based on the principle that the rapid solidification process induced by freezing prevents the molecules from packing in a certain order is called as

a)Spray drying

b)Spray freeze drying

c)both of these

d)none of these

12. Freezing of the droplets is done in a cryogenic liquid or cryogenic vapor, usually

a) argon

b) liquid nitrogen

c) helium

d) all of these

13. Spray freeze drying includes

a) sublimation

b) lyophilization

c) both of these

d) only a

14. Bulk powders are.....

a. Potent

b. Non-potent

c. Both a and b

d. None

15. Powders are more stable than.....

a. Syrup

b. Tablet

c. Capsule

d. Elixirs

16. The component present in solution in small quantity is known as.....

a. Solvent

b. Solution

c. Solute

d. Liquid

17. The component present in solution in large quantity is known as.

a. Solvent

b. Solution

c. Solute

d. Liquid

18. Throat paints are liquid preparations.

a. Viscous

b. Non viscous

c. Solid

d. Gas

19. The syrup is a nearly saturated solution of

a. Sucrose

b. Sorbitol

c. Glycerine

d. PEG

20. The syrup is in nature.

a. Aqueous

b. Non aqueous

c. Gas

d. Solid

1. What are the size reduction laws?
 - a. Rittinger's Law
 - b. Kick's Law
 - c. Bond's Law
 - d. **Bond's Law, Rittinger's Law, and Kick's**

2. Which mechanism is utilized when particle concussion by a single rigid force?
 - a. **Impact**
 - b. Compression
 - c. Shear
 - d. Tear

3. What is the mechanism of nut cracker?
 - a. Impact
 - b. **Compression**
 - c. Shear
 - d. Tear

4. What is shear force?
 - a. **Force acting in direction parallel to surface of a body**
 - b. Force in direction perpendicular to surface of a body
 - c. Force acting in direction longitudinal to surface of a body
 - d. Force acting in direction vertical to surface of a body

5. Why is uniform particle size important?
 - a. Colour improvement
 - b. **Product stability**
 - c. Flavour improvement
 - d. Colour and flavour improvement

6. Which of the following is a size reduction unit operation in liquids?
 - a. Milling
 - b. Mixing
 - c. Grinding
 - d. **Homogenization**

7. What are the factors affecting size reduction?
 - a. **Shape and size**
 - b. Temperature
 - c. Viscosity
 - d. Pressure

8. What is a hammer mill used for?
 - a. **Crush larger pieces into small pieces**

- b. To compress the raw materials
- c. Break down of liquefied emulsions
- d. Break smaller pieces into fine powder

9. What is size reduction equipment?

- a. **Adding energy to a material to make large pieces smaller**
- b. Removing energy to a material to make large pieces smaller
- c. Adding energy to a material to make small pieces larger
- d. Removing energy to a material to make small pieces larger

10. What is use of edge runner?

- a. **To crush the pieces**
- b. To compress the pieces
- c. To tear the pieces
- d. To shear the pieces

11. Fluid energy mill is also known as _____

- a. Micronizers
- b. Jet mill
- c. Pulveriser's
- d. **All of the above**

12. Cutter mill is fitted with _____ knives.

- a. Stationary
- B. Rotating
- c. **Both A and B**
- d. Other than above

13. Size reduction is always carried out in the colloid mill in presence of _____

- a. Inert solid material
- b. **liquid**
- c. Gas
- d. None of the above

14. This mill do not have any moving part in the grinding area:

- a. Disintegrator mill
- b. Hammer mill
- c. Colloid mill
- d. **Fluid energy mill**

15. Fluid energy mill reduces the particles upto _____

- a. 8 micron or less
- b. 6 micron or less
- c. **5 micron or less**

d. 3 micron or less

16. The process of levigation is known as:

- a. Wet crushing
- b. Shearing
- c. Wet grinding**
- d. Both A and B

17. Which of the following mill works on the principle of combined impact and attrition?

- a. Hammer mill
- b. Ball mill**
- c. Disintegrator mill
- d. Roller mill

18. Which of the following is an impact mechanism mill

- a. Cutter mill
- b. Hammer mill**
- c. Ball mill
- d. Fluid energy mill

19. Fluid energy mill works on the principle of:

- a. Impact
- b. Attrition
- c. Cutting
- d. Impact and attrition combined**

20. What is the product size in roller mill

- a. 20 to 80 mesh
- b. 10 to 30 mesh
- c. 10 to 50 mesh
- d. 20 to 200 mesh**

21. In Ball mill, how much volume should be occupied by material:

- a. 10-30%
- b. 5-20%
- c. 50-70%
- d. 30-50%**

22. The output of size reduction of material in a machine depends on:

- a. Chemical nature
- b. Physical characteristics
- c. Bulk density

d. **All of the above**

23. Which of following mill is free from wear?

a. Ball mill

b. Roller mill

c. Edge runner mill

d. **Fluid energy mill**

1. Size classification is also known in one of the following terms.
 - a. Size analysis
 - b. Distribution
 - c. Size reduction
 - d. **Size separation**

2. Size separation is NOT based on one of the following properties
 - a. Particle density
 - b. Particle Shape
 - c. Particle size
 - d. **Particle texture**

3. Which one of the screens are used for size separation of big and heavy particles?
 - a. **Bar screens**
 - b. Bolting cloth sieves
 - c. Punched plate screens
 - d. Woven wire screens

4. Which one of the screens is attached to the size reduction equipment
 - a. Bar screens
 - b. **Cloth Sieves**
 - c. Herringbone screens
 - d. Woven wire screens

5. Which of the following indicates the nominal size of aperture?
 - a. Area of mesh as percentage
 - b. Distance between two adjacent wires
 - c. **Number of meshes per linear length**
 - d. Wire having specified diameter that gives suitable aperture

6. During separation, the movement of particles can be enhanced by one of the following modes.
 - a. **Agitation**
 - b. Attrition
 - c. Gravitation
 - d. Mixing

7. Brushing method hastens the movement of one of the following materials
 - a. Coarse materials
 - b. Dry materials
 - c. Light materials
 - d. **Sticky materials**

8. Flywheel is used to enhance the motion of particles by one of the following modes
- Brushing mode
 - Centrifugal mode
 - Gyration mode**
 - Oscillation mode
9. Which equipment is used for sieve analysis?
- Alpine air jet sieve**
 - Cyclone separator
 - Rotex screen
 - Shaking screen
10. A fluidised state is NOT used in one of the following equipment.
- Air separator
 - Alpine sieve
 - Cyclone separator
 - Rotex screen**
11. Given below are size separation techniques except-
- Sieving
 - Elutriation
 - Cyclone separator
 - Fluid energy mill
12. Which of the following statements are TRUE about "Sieves for pharmaceutical testing".
- They are constructed from wire cloth with square meshes
 - They are woven from wires of brass, bronze, stainless steel
 - Wires should be uniform circular cross section and uncoated
 - All of the above
13. _____ can be used to separate the suspension of solid in a gas as well as in a liquid.
- Air separator
 - Seiving
 - Cyclone
 - Elutriation
14. For two _____ grades of powder, Indian Pharmacopoeia has prescribed only the upper limit.
- Fine
 - Coarse
 - Both Fine and Coarse

- d. None of the above
15. Technique used to separate particles of specified size is called as
- Size reduction
 - Size separation
 - Particle Separation
 - None of the above
16. _____ is often attached to ball mill or hammer mill to separate the oversized particles and further size reduction.
- Air separator
 - Seiving
 - Cyclone or
 - Elutriation
17. According Indian Pharmacopoeia, 'Fine Powder' means
- All particles pass through a sieve with nominal mesh aperture of 710 μm (Sieve no. 22) and NMT 40% through a sieve with nominal mesh aperture of 250 μm (Sieve no. 60)
 - All particles pass through a sieve with nominal mesh aperture of 1.70 mm (Sieve no. 10) and NMT 40% through a sieve with nominal mesh aperture of 355 μm (Sieve no. 44)
 - All particles pass through a sieve with nominal mesh aperture of 355 μm (Sieve no. 44) and NMT 40% through a sieve with nominal mesh aperture of 180 μm (Sieve no. 85)
 - All particles pass through a sieve with nominal mesh aperture of 180 μm (Sieve no. 85)
18. Indian Pharmacopoeia, 'Coarse Powder' means-
- All particles pass through a sieve with nominal mesh aperture of 710 μm (Sieve no. 22) and NMT 40% through a sieve with nominal mesh aperture of 250 μm (Sieve no. 60)
 - All particles pass through a sieve with nominal mesh aperture of 1.70 mm (Sieve no. 10) and NMT 40% through a sieve with nominal mesh aperture of 355 μm (Sieve no. 44)
 - All particles pass through a sieve with nominal mesh aperture of 355 μm (Sieve no. 44) and NMT 40% through a sieve with nominal mesh aperture of 180 μm (Sieve no. 85)
 - All particles pass through a sieve with nominal mesh aperture of 180 μm (Sieve no. 85)
19. Mechanical sieving devices works on the basis of
- Agitation
 - Brushing
 - Centrifugal
 - All of the above
20. In sieving method, sieves are arranged i in _____ order.
- Randomding

- b. Descending
- c. Ascending and Descending both

ANTI-NEOPLASTIC AGENTS

Short Answer Questions:

1. Write a note on Anti-Cancer Drugs
2. Name two Plant Products which are used as Anticancer Drug
3. Explain the Types of Cancer
4. Write the Stability & Storage Conditions of Dactinomycin & Methotrexate

Long Answer Questions:

1. Define & Classify Anti-Cancer Drugs with Examples .Write the Structure, Chemical Name & uses of Fluorouracil , Mercaptopurine
2. Write The Structure, Chemical Name & uses of Cisplatin & Cyclophosphamide
3. Write the Monographs of Vinblastine, Busulfan, Methotrexate, Doxorubicin, Cisplatin

One Mark Question:

1. Write the Uses of Cyclophosphamide
2. Define Carcinogenic Agents
3. Write the uses of Mercaptopurine & Fluorouracil

MCQ'S:

1. If the Cancer Cells Originates from Epithelial Cells what type of Cancer it is ?
 - a. Myeloma
 - b. Lymphoma
 - c. **Carcinoma**
 - d. Sarcoma
2. Cisplatin is Classified Under _____
 - a. **Alkylating Agent**
 - b. Hormonal Agents
 - c. Antimetabolite
 - d. Miscellenous
3. Metastasis is a Process by which the cancer cells are spreads thorough
 - a. Blood
 - b. Lymph
 - c. **Both a & b**
 - d. None of above
4. Dactinomycin is also called as
 - a. Actinomycin-A
 - b. Actinomycin-C
 - c. Actinomycin-B
 - d. **Actinomycin-D**

5. Which of the Following Contains Platinum
 - a. Azothiopurine
 - b. Dactinomycin
 - c. **Cisplatin**
 - d. Mercaptopurine
6. The Color of Methotrexate is
 - a. White
 - b. **Orange-Red**
 - c. Brown
 - d. Yellow
7. Fluorouracil is occurs as
 - a. **White Crystalline**
 - b. Yellow Crystalline
 - c. Red Crystalline
 - d. None
8. Which of the Following pairs are used as Anticancer Drugs
 - a. Vincristine & Vinblastine
 - b. Etoposide & Teniposide
 - c. Fluorouracil & Mercaptopurine
 - d. **All of Above**

Fill in Blanks:

1. Vinblastine is an alkaloid which has **Antineoplastic** Activity.
2. Cyclophosphamide is **Slightly Bitter In taste .**
3. Busulfan is **Slightly Soluble & Stored in Well closed air tight Container.**
4. Methotrexate is a Derivative of Heterocycle **Pteridine.**
5. Fluorouracil is a **Pyrimidine** analogue.

ANTI-INFECTIVE AGENTS

(Anti-Tubercular, Anti-Malarial, Sulphonamides, Antifungals, UTI, Antiviral)

Short Answers:

1. Write the Chemical name and uses of Pyrimethamine
2. Write the Chemical name and uses of Isoniazid (INH)
3. Write the Structure and uses of PAS
4. Name various Disease caused by Fungi
5. Name the Causative Organism of Malaria
6. Name the Causative agent for Tuberculosis
7. Describe the Storage Conditions of Sulphonamides
8. Write the official preparations of Sulphadiazine
9. Name the Sulphonamides used in Eye Infections
10. Write the Properties & Storage Condition of Chloroquine
11. Name Two Antibiotics used in Tuberculosis
12. Write Stability, storage and brand names of INH
13. Write the Structure & Uses of Ethambutol
14. Write the Structure & Uses of Dapsone
15. Write a Note on UTI Agents
16. Write about Mycoses
17. Write in Detail about Antivirals
18. Write the Structure & uses of Chloroquine
19. Write the Structure & Uses of Acyclovir
20. Write the Monograph of Delamanid

Long Answers:

1. Define & Classify Antitubercular Drugs with Examples. Write the Structure , Chemical Name & uses of INH,PAS, Ethambutol
2. Write the Structure, Chemical Name & uses of Delamanid, Pretomanid & Pyrizinamide
3. Write Monograph of Rifampicin
4. Define & Classify Anti-Fungal Drugs
5. Write the Structure, Chemical Name & uses of Ketoconazole, Fluconazole, Itraconazole, Miconazole
6. Define & Classify UTIS with Examples. Write the Structure, Chemical name & uses of Norfloxacin, Ciprofloxacin , Moxifloxacin
7. Write the Structure, Chemical Name & uses of Bedaquiline & Griseofulvin
8. Define & Classify Antimalarial Drugs with Examples. Write the Structure, Chemical Name & Uses of Pyrimethamine , Quinine Sulphate, Primaquine
9. Write the Structure, Chemical Name & Uses of Mefloquine ,Chloroquine

10. Define & Classify Antiviral Drugs with Examples. Write the Structure, Chemical Name & uses of Amantadine Hcl , Acyclovir
11. Write in detail the Monographs of Focsanil, Zidovudine, Ribavirin, Remdesivir
12. Write a brief Note on Cotrimoxazole
13. Define & Classify Sulphonamides . Write the Structure, Chemical Name & Uses of Sulphometoxazole, Dapsone, Sulphacetamide,
14. Write the Monographs of Sulphanilamide, Mafenide acetate, Favipiravir
15. Write in Detail about Sulphonamides used as an Anti-Infective Agents

Fill in the Blanks :

1. Chloroquine is used as **Antimalarial Drugs.**
2. Sulphadiazine is the Derivative of **pyrimidine.**
3. Pyrimethamine is a derivative of **2,4-diaminopyrimidine.**
4. Quinine is an **Alkaloid.**
5. Cotrimoxazole is a Mixture of **Sulphometoxazole & Trimethoprim**
6. Mepacrine belongs to Class of **Amino Acridine**
7. INH is a Derivative of **Pyridine**
8. Candidiasis is caused by **Candida**
9. Proguanil is **Slightly** Soluble in Water
10. Brand Names of Cotrimoxazole is **Septtran**

MCO'S:

1. Which of these is an Antiviral Drug
 - a. Caffeine
 - b. Acetylcholine
 - c. **Acyclovir**
 - d. Acebutolol
2. Chloroquine Belongs to
 - a. **8-aminoquinolin**
 - b. 4-aminoquinolin
 - c. Biguanidines
 - d. None of Above
3. Which Anti-infective agent is used to treat infections such as athlete's Foot
 - a. Itraconazole
 - b. **Ketoconazole**
 - c. Miconazole
 - d. Griseofulvin
4. How Many fluorine groups are present in Fluconazole?
 - a. 1
 - b. 3
 - c. **2**
 - d. 4
5. Which is Available in these forms (Tablets, Eye Drops, Ear Drops)
 - a. **Ofloxacin**
 - b. Norfloxacin
 - c. Ciprofloxacin
 - d. Moxifloxacin
6. Which Drug is used to treat Corona Virus Infection

- a. **Remdesivir** c. Ribavirin
 - b. Zidovudine d. Foscarnet
7. Idoxuridine is indicated in
- a. **Herpes Simplex Keratitis** c. Herpes Zoster
 - b. Chickenpox d. All of Above
8. Zidovudine Inhibits the Following Viruses
- a. **HIV** c. Hepatitis-B
 - b. Cytomegalovirus d. Both A & B
9. The Virus directed reverse Transcriptase Enzyme is inhibited by
- a. Amantadine c. Vidarabine
 - b. **Zidovudine** d. Acyclovir
10. Which of the following viruses is most susceptible to Acyclovir
- a. **Herpes Simplex type I Virus**
 - b. Herpes Simplex type II Virus
 - c. Varicella Zoster Virus
 - d. Epstein-Barr Virus
11. Select the Antimicrobial Drug which is used orally for Urinary Tract Infections
- a. **Nalidixic Acid** c. Ofloxacin
 - b. Azithromycin d. None of Above
12. Which of the Following Drug is used for the Treatment of Malaria during Pregnancy
- a. Quinine c. Primaquine
 - b. **Chloroquine** d. Pyrimethamine
13. Viral Replication mainly Takes place outside the host cells
- a. True
 - b. **False**
14. Treatment of HIV requires Combination Of Drugs
- a. **True**
 - b. False
15. The Color Of Amphotericin B is
- a. White c. Grey
 - b. **Yellow -Orange** d. Colorless

1. Which type of defect is possible if the processing temperature is kept very high while tablet manufacturing ?
 - a. **Hazing**
 - b. Orange peel effect
 - c. Flacking
 - d. Bridging

2. Which of the following conditions can result in dull film of tablet ?
 - a. Under high processing temperature
 - b. On using cellulose polymer
 - c. Under high humidity condition
 - d. **All of the above**

3. First step in the absorption of drug from the tablet is a
 - a. **Disintegration**
 - b. Diffusion
 - c. Dissolution
 - d. Deaggregation

4. Weight variation limit as per USP for the tablet weight more than 324 mg
 - a. 7.5 mg
 - b. 7.5%
 - c. **5%**
 - d. 5 mg

5. Temperature condition in Dissolution test
 - a. **$37\pm 0.5^{\circ}\text{C}$**
 - b. $37+5^{\circ}\text{C}$
 - c. $37+2^{\circ}\text{C}$
 - d. $37\pm 0.2^{\circ}\text{C}$

6. Temperature condition in disintegration test
 - a. $37+5^{\circ}\text{C}$
 - b. $37\pm 0.5^{\circ}\text{C}$
 - c. **$37\pm 2^{\circ}\text{C}$**
 - d. $37\pm 0.2^{\circ}\text{C}$

7. Lactose is used as tablet formulation
 - a. Lubricants
 - b. Glidents
 - c. **Diluents**
 - d. Disintegrants

8. Dry granulation process is also Known as
- Chipping
 - Seiving
 - Seiving
 - Mixing**
9. Moisture & heat sensitive drug are formulated into tablets by
- Direct compression
 - Dry granulation
 - Wet granulation**
 - All of these
10. Which of the following is a Binder
- Lactose
 - Acacia**
 - Stearic acid
 - Colloidal Silica
11. Stearic acid is used as
- Lubricant**
 - Glidants
 - Binders
 - Disintegrants
12. At Gastric pH does enteric coated tab release the drug
- Yes
 - No**
 - May be or may not
 - None
13. Coating used to protect the tablet from acidic environment of stomach.....
- Film coating
 - Sugar coating
 - Enteric coated**
 - Encapsulation
14. Lactose is used as ?
- Diluent**
 - Glidants
 - Lubricant
 - Dis integrant
15. Sigma blade mixers are commonly used in ?

- a. Dry granulation
- b. Powder mixing
- c. **Wet granulation**
- d. Crude fibre mixing

16. In sugar coating of tab seal coating is done?

- a. **To prevent moisture deposition**
- b. To round the edge
- c. Build the tablet size
- d. To smoothen the surface

17. Diameter of mess aperture in the dis-integration apparatus is (as per I.P)

- a. 1 mm
- b. **2 mm**
- c. 3 mm
- d. 4 mm

18. Fibrillater is operated at

- a. **100 RPM**
- b. 200 RPM
- c. 50 RPM
- d. 300 RPM

19. Unequal distribution of colour?

- a. Capping
- b. Picking
- c. **Mottling**
- d. Lamination

20. Dis integration time for sugar coated tablet _____

- a. 30 min
- b. **60 min**
- c. 90 min
- d. 120 min