



Section I

Pharmaceutics

- 1. History of the Profession of Pharmacy in India**
- 2. Packaging Materials**
- 3. Pharmaceutical Aids and Preservatives**
- 4. Unit Operations**
- 5. Tablets and Capsules**
- 6. Liquid Oral Preparations**
- 7. Topical Preparations**
- 8. Sterile Formulations and Immunological Products**
- 9. Quality Control and Quality Assurance**
- 10. Novel Drug Delivery System**

Syllabus (As Per ER 2020) Pharmaceutics

Chapter	Topics
1	<p>History of the profession of pharmacy in India in relation to pharmacy education, industry, pharmacy practice, and various professional associations.</p> <p>Pharmacy as a career</p> <p>Pharmacopoeia: Introduction to IP, BP, USP, NF and extra pharmacopoeia. Salient features of Indian pharmacopoeia</p>
2	<p>Packaging materials: Types, selection criteria, advantages and disadvantages of glass, plastic, metal, rubber as packaging materials</p>
3	<p>Pharmaceutical aids: Organoleptic (colouring, flavouring, and sweetening) agents</p> <p>Preservatives: Definition, types with examples and uses</p>
4	<p>Unit operations: Definition, objectives/applications, principles, construction, and working of:</p> <ul style="list-style-type: none"> ■ Size reduction: Hammer mill and ball mill ■ Size separation: Classification of powders according to IP, cyclone separator, sieves standards of sieves <p>Mixing: Double cone blender, Turbine mixer, Triple roller mill and Silverson mixer homogenizer</p> <p>Filtration: Theory of filtration, membrane filter and sintered glass filter</p> <p>Drying: Working of fluidized bed dryer and process of freeze drying</p> <p>Extraction: Definition, Classification, method, and applications</p>
5	<p>Tablets—coated and uncoated, various modified tablets (sustained release, extended-release, fast dissolving, multi-layered, etc.)</p> <p>Capsules—hard and soft gelatine capsules</p> <p>Liquid oral preparations—solution, syrup, elixir, emulsion, suspension, dry powder for reconstitution</p> <p>Topical preparations—ointments, creams, pastes, gels, liniments and lotions, suppositories, and pessaries</p> <p>Nasal preparations, Ear preparations</p> <p>Powders and granules—Insufflations, dusting powders, effervescent powders, and effervescent granules</p> <p>Sterile formulations—Injectables, eye drops and eye ointments</p> <p>Immunological products: Sera, vaccines, toxoids, and their manufacturing methods.</p>
6	<p>Basic structure, Layout, sections, and activities of pharmaceutical manufacturing plants</p> <p>Quality control and quality assurance: Definition and concepts of quality control and quality assurance, current good manufacturing practice (cGMP)</p> <p>Introduction to the concept of calibration and validation</p>
7	<p>Novel drug delivery systems: Introduction, classification with examples, advantages, and challenges</p>

History of the Profession of Pharmacy in India in Relation to Pharmacy Education, Industry, Pharmacy Practice and Various Professional Associations; Pharmacy as a Career; Pharmacopoeia

1. The Greek word *Poeio* means:
A. To cure B. To make
C. To diagnose D. To treat
2. In 1948 _____ prepared the first edition of Indian pharmacopoeia.
A. Dr Mukherjee B. William Martindale
C. Dr BN Ghosh D. ML Schroff
3. The first British pharmacopoeia was published in _____.
A. 1890 B. 1864
C. 1870 D. 1895
4. In the year 2018 which edition of Indian pharmacopoeia was published?
A. 2nd edition B. 5th edition
C. 7th edition D. 8th edition
5. The British Pharmacopoeia is the National Pharmacopoeia of the _____.
A. Europe
B. United Kingdom
C. France
D. South Africa
6. DEC stands for _____.
A. Drug Education Committee
B. Drug Ethical Committee
C. Drug Enquiry Committee
D. None of the above
7. Who organizes the Indian Pharmaceutical Congress every year?
A. Indian Pharmaceutical Congress
B. Indian Pharmacy Graduates Association
C. Indian Pharmaceutical Congress Association
D. Indian Pharmaceutical Association
8. Earliest pharmacies were known as
A. Apothecary shops
B. Pharmacy
C. Medicine point
D. Drugstore
9. The architect of Indian pharmaceutical industry is _____.
A. Acharya SB Manikdas
B. Dr RC Subhedar
C. Dr APJ Abdul Kalam
D. Acharya PC Ray
10. At least _____ is required to practice as a pharmacist in India.
A. Degree in Pharmacy
B. Masters in Pharmacy
C. Pharm D
D. Diploma in pharmacy
11. Pharmacy education in India as a university level programme started in 1937 at _____.
A. Delhi University
B. University of Madras
C. Banaras Hindu University
D. Patna University
12. According to the reference, the commonly worshipped Hindu God of Medicine, “_____” is the original exponent of the Indian medicine.
A. Ganesh
B. Mahadev
C. Dhanvantari
D. Bramha

13. The _____ was enacted as the nation's first minimum standard of educational qualification for pharmacy practice.
A. Drugs and Cosmetics Act 1940 (1945)
B. DPCO Act
C. Pharmacy Act 1948
D. All of the above
14. Pharmacy practice in India is governed by which of the following Act?
A. Pharmacy Act 1948
B. Drugs and Cosmetics Act 1940 (1945)
C. DPCO Act
D. All of the above
15. Key strengths of pharmaceutical industry are _____.
A. Strong manufacturing base
B. Cost competitiveness
C. Fast growing healthcare industry
D. All of the above
16. The word 'pharmacy' is derived from the Greek word _____.
A. Pharmaces B. Pharma
C. Pharmacisto D. Pharmakon
17. The present education regulations 2020 framed replaced _____.
A. Education Regulations 1981
B. Education Regulations 1991
C. Education Regulations 1982
D. Education Regulations 2014
18. _____ is the federation of five national pharmaceutical associations as its constituents.
A. Indian Pharmaceutical Congress
B. Indian Pharmaceutical Congress Association
C. Indian Pharmacy Graduates Association
D. Indian Pharmaceutical Association
19. _____ is the premier professional association of pharmacists in India.
A. Indian Pharmaceutical Congress
B. Indian Pharmacy Graduates Association
C. Indian Pharmaceutical Association
D. Indian Pharmaceutical Congress Association
20. _____ has the highest number of US FDA approved drug manufacturing units (outside USA) today.
A. India B. Russia
C. China D. America
21. _____ were medical doctors as well as pharmacists.
A. Charaka and Chanakya
B. Chanakya and Sushruta
C. Charaka and Sushruta
D. Aryabhatta and Valmiki
22. The Drugs and Cosmetics Act was passed in the year _____.
A. 1940 B. 1945
C. 1948 D. 1955
23. Who is known as the "Father of Pharmacy Education in India"?
A. Acharya PC Ray
B. Prof Mahadev Lal Schroff
C. Sushruta
D. Charaka
24. Pharmacy education in India at the certificate level was started in 1842 in Goa by _____.
A. Britishers B. Jews
C. Native businessmen D. Portuguese
25. _____ was the first pharmaceutical manufacturing facility establishment in India.
A. Indian Pharmaceutical Company Ltd.
B. Bengal Chemicals and Pharmaceutical Works Ltd.
C. Calcutta Chemicals
D. Ranbaxy Pharmaceuticals Ltd.
26. The first edition of IP was published in _____.
A. 1948 B. 1955
C. 1940 D. 1960
27. Extra pharmacopoeia is also termed _____.
A. Martindale: The Complete Drug Reference
B. Pharmacopoeia codex
C. National formulary
D. International pharmacopoeia
28. _____ is pharmacy as the minimum required qualification to enter into the pharmacy profession in India.
A. Degree B. Postgraduation
C. Diploma D. Pharm D
29. Dioscorides wrote _____.
A. Merck Index
B. Indian Pharmacopoeia
C. Martindale
D. De Materia Medica

30. Which edition of Indian Pharmacopoeia was published in 2018?
A. 3rd B. 7th
C. 6th D. 8th
31. Who is the Father of Medicine?
A. Ebers B. Hippocrates
C. Egyptian D. Pontus
32. Drugs converted to suitable form are known as _____.
A. Excipient B. Source of drug
C. Dosage forms D. API
33. Every dosage form is a combination of drug and different kinds of non-drug components called _____.
A. Additives B. Non-additives
C. New chemical entity D. All of the above
34. The 7th edition of IP was published in _____.
A. 2007 B. 1996
C. 2014 D. 2012
35. USP first edition was published in _____.
A. Latin B. English
C. English and Latin D. French
36. The meaning of Pharmakon means _____.
A. Powder
B. Medicine or drug
C. Emulsion
D. None of the above
37. The fourth edition of IP was published in _____.
A. 1965 B. 1975
C. 1996 D. 1985
38. The content of pharmacopoeia includes _____.
A. Monograph of drug/substance
B. Standard test
C. Description, formulae
D. All of the above
39. The first chemist shop in India was opened by _____ in 1811 in Kolkata.
A. Scotch Bathgate
B. Acharya PC Ray
C. Cal RN Chopra
D. Haroon Zaffer
40. The first Pharmacy Council of India (PCI) was constituted by Central Government in _____.
A. 1947 B. 1949
C. 1948 D. 1950
41. Drug Enquiry Committee is known as _____.
A. Chopra committee
B. Bhor committee
C. Import of drug bill
D. Indian Pharmacopoeia Committee
42. The Pharmacy Education in India is regulated by Pharmacy Council of India under _____.
A. The Pharmacy Act 1948
B. Drugs And Cosmetics Act 1940
C. DPCO Act
D. The Industry Act
43. The first 2 years of professional course "Chemist and Druggist Diploma" was started in _____.
A. Banaras Hindu University
B. Bengal Chemical and Pharmaceuticals
C. Madras Medical College
D. Indian Pharmaceutical Association
44. The second edition of Indian pharmacopoeia was published in _____.
A. 1985 B. 2007
C. 1955 D. 1966
45. All the following are official books *except* _____.
A. Merk Index
B. The Drug Bill
C. National Formulary
D. Indian Pharmaceutical Codex
46. The Indian Government appointed a 'Drug Inquiry Committee' under the Chairmanship of _____.
A. Dr BN Ghosh B. Dr Mukharji
C. William Martindale D. Lt Col RN Chopra
47. The long form of AIOCD is _____.
A. All India Organization of Chemist and Druggist
B. All India Organization of Chemistry and Discovery
C. All India Organization of Chemist and Distributor
D. None of the above
48. The current Education Regulations were framed by PCI are known as _____.
A. ER 1981 B. ER 1991
C. ER 2014 D. ER 2020
49. The 'Import of Drugs Bill' was introduced in _____ in legislative assembly to control import of drugs.
A. 1940 B. 1937
C. 1935 D. 1931

50. _____ is an art and science of compounding and dispensing of medications.
 A. Biotechnology
 B. Pharmacodynamics
 C. Pharmacy
 D. Pharmacovigilance
51. The first of pharmacy shop was opened in _____.
 A. France
 B. Italy
 C. Germany
 D. Bagdad
52. USP means
 A. United States Pharmacology
 B. United States Pharmacy
 C. United States Pharmacopoeia
 D. United States Pharmaceutical
53. Alembic Chemical Works at Baroda was established by _____.
 A. Prof TK Gujjar
 B. Acharya PC Ray
 C. RN Chopra
 D. Mr Bathgate
54. Pharmacopoeia contains _____.
 A. Monograph and drug substances
 B. Standard tests
 C. Description formulae
 D. All of the above
55. Who organises the Indian Pharmaceutical Congress every year?
 A. Indian Pharmaceutical Congress
 B. Indian Pharmaceutical Congress Association
 C. Indian Pharmacy Graduate Association
 D. Indian Pharmaceutical Association
56. The Pharmacy Act was established in _____.
 A. 1960
 B. 1952
 C. 1948
 D. 1949
57. Long form of APTI is _____.
 A. Association of pharmaceutical teachers of India
 B. Association of pharmaceutical training in India
 C. Association of pharmaceutical theories in India
 D. Association of post teachers in India
58. The Pharmacy Council of India is reconstituted after every _____ years.
 A. 5
 B. 4
 C. 3
 D. 2
59. IDMA stands for _____.
 A. Indian Drug Manufacturer Association
 B. Import of Drug Manufacturer Association
 C. Indian Drug Management Association
 D. Indian Dosage Management Association
60. In 1842, in India Portuguese started pharmacy education by providing a certificate course in _____.
 A. Hyderabad
 B. Goa
 C. Bangalore
 D. Delhi

Answer Key

1 B	2 C	3 B	4 D	5 B	6 C	7 C	8 A	9 D	10 D
11 C	12 C	13 C	14 B	15 D	16 D	17 B	18 B	19 C	20 A
21 C	22 A	23 B	24 D	25 B	26 B	27 A	28 C	29 D	30 D
31 B	32 C	33 A	34 C	35 C	36 B	37 C	38 D	39 A	40 B
41 A	42 A	43 C	44 D	45 B	46 D	47 A	48 D	49 B	50 C
51 D	52 C	53 A	54 D	55 B	56 C	57 A	58 A	59 A	60 B

Packaging Materials

1. Which one of the following is not an official test for rubber closure?
A. Extractive test B. Pyrogen test
C. Permeability test D. Compatibility test
2. Following are the materials used for container *except* _____.
A. Glass B. Plastic
C. Rubber D. Metal
3. PVC means _____.
A. Polyvinyl chloride B. Polyvinyl carbon
C. Polyvinyl carbide D. Polyvinyl carbonate
4. _____ is a material of choice for a flexible packaging.
A. Metal B. Glass
C. Cellulose D. Cellophane
5. _____ is a device by means of which container can be closed and opened.
A. Aerosol B. Closure
C. Container D. None of the above
6. Which of the following materials are used in pharmaceutical packaging?
A. Glass B. Plastic
C. Metal D. All of the above
7. Major disadvantages of glass as a packaging material are
A. Fragility B. Weight
C. Both A and B D. None of the above
8. Composition of glass is _____.
A. Sand B. Soda ash
C. Lime stone and cullet D. All of the above
9. Which of the following packaging materials is used to protect the drug against the light?
A. Plastic containers
B. Amber coloured glass containers
C. Both A and B
D. None of the above
10. Type-I glass is also known as _____.
A. Borosilicate glass
B. Regular soda-lime glass
C. Treated soda-lime glass
D. None of the above
11. Which of the following methods are used in the production of glass?
A. Blowing B. Drawing
C. Pressing and casting D. All of the above
12. To protect the contents of a bottle from the effects of sunlight by UV rays, which glass is used?
A. Amber coloured glass B. Red coloured glass
C. Both A and B D. None of the above
13. Soda ash is also known as _____.
A. Pure silica B. Treated soda-lime
C. Limestone D. Sodium carbonate
14. Plastic containers are generally made from which of the following materials?
A. Polyethylene B. Polypropylene
C. Polystyrene D. All of the above
15. The package that is directly in contact with formulation is called _____.
A. Secondary package B. Tertiary package
C. Primary package D. All of the above

16. The advantages of plastic containers over glass containers are _____.
 A. Easy formation
 B. Resistance to breakage
 C. Freedom of design
 D. All of the above
17. LDPE stands for _____.
 A. Low density polyethylene
 B. Light density polyethylene
 C. Low density polypropylene
 D. None of the above
18. Hermetic containers are also known as _____.
 A. Air-tight containers
 B. Multi-dose containers
 C. Single dose containers
 D. None of the above
19. Thermoplastics are _____.
 A. Does not softened upon exposure to high temperature
 B. Hard and brittle
 C. Softened upon exposure to high temperature
 D. None of the above
20. HDPE stands for _____.
 A. High density polyethylene
 B. High density polyethene
 C. High density polypropylene
 D. None of the above
21. Type-II glasses are _____.
 A. Treated soda-lime glass
 B. NP glass
 C. Borosilicate glass
 D. General soda-lime glass
22. Rubbers are used as material for construction of _____.
 A. Container
 B. Closure
 C. Both A and B
 D. None of the above
23. Plastic containers are sterilized using _____.
 A. Autoclave
 B. Bleaching agent
 C. Ethylene oxide
 D. All of the above
24. The package composed of a layer having cavities that hold the pharmaceutical product and a lid is called _____.
 A. Strip package
 B. Child resistant package
 C. Blister package
 D. Well-closed package
25. A light-resistant container provides protection against _____.
 A. Moisture
 B. Light
 C. Both A and B
 D. None of the above
26. Glass containers are _____ in nature.
 A. Fragile
 B. Light
 C. Both A and B
 D. None of the above
27. Which is the most resistant type of glass?
 A. Type I
 B. Type II
 C. Type III
 D. Type IV
28. Which of the following is used as vulcanizing agent in the manufacture of rubber closures?
 A. Activated carbon black
 B. Sulphur
 C. Talc
 D. Stearic acid
29. _____ glass is a glass of highest pharmaceutical grade
 A. Type I
 B. Type II
 C. Type III
 D. Type IV
30. Soda-lime glass is also known as _____.
 A. Hard glass
 B. Soft glass
 C. Potash glass
 D. Lead glass

Answer Key

1 B	2 C	3 A	4 D	5 B	6 D	7 C	8 D	9 B	10 A
11 D	12 C	13 C	14 D	15 C	16 D	17 A	18 A	19 C	20 A
21 A	22 B	23 C	24 C	25 B	26 A	27 A	28 B	29 A	30 B

Pharmaceutical Aids and Preservatives

1. Identify the artificial sweetener among the following:
A. Sucrose B. Dextrose
C. Sucralose D. Mannitol
2. To increase viscosity of liquid which of the following reagent is used?
A. PVP
B. Sodium carboxymethyl cellulose
C. Methyl cellulose
D. All of the above
3. Which of the following is not used as a diluent?
A. Lactose
B. Microcrystalline cellulose
C. Calcium carbonate
D. Polyvinyl Pyrrolidone
4. Which among the following is not an example for natural colors?
A. Annatto B. Carotene
C. Saffron D. Naphthalene blue
5. Chelating agents act by _____ mechanism.
A. Complexation B. Hydration
C. Oxidation D. None of the above
6. Diluents are used to _____.
A. Add cohesiveness to the powder blend
B. Make up the required bulk of the tablet
C. Both A and B
D. None of the above
7. Antioxidants act by inhibiting _____ mechanism.
A. Complexation
B. Hydration
C. Oxidation
D. None of the above
8. Preservatives improve _____.
A. Shelf life of the product
B. Product stability
C. Appearance of the product
D. All of the above
9. Lakes are example for _____.
A. Colouring agent
B. Flavouring agent
C. Sweetening agent
D. None of the above
10. Which of the following is an example of a non-nutritive sweetening agent?
A. Sucralose B. Sucrose
C. Mannitol D. None of the above
11. EDTA is an example of _____.
A. Chelating agent
B. Antifungal preservative
C. Anti-oxidant
D. None of the above
12. A flavouring agent is used to enhance _____ of the product.
A. Smell
B. Appearance
C. Palatability
D. None of the above
13. Which of the following are widely used and excellent preservatives?
A. Quaternary ammonium compounds
B. Mercurials
C. Chelating agents
D. Chloroform

14. Benzalkonium chloride is categorized as _____.
 A. Acidic preservative
 B. Neutral preservative
 C. Mercurial preservative
 D. Quaternary ammonium compounds
15. Which of the following is an example of synthetic colouring agent?
 A. Amaranth
 B. Curcumin
 C. Cochineal
 D. None of the above
16. Which of the following sugar has bitter taste?
 A. Glucose
 B. Sucrose
 C. Saccharine
 D. None of the above
17. Which of the following is a synthetic sweetener?
 A. Glucose
 B. Sucrose
 C. Sorbitol
 D. Aspartame
18. At which concentration, phenol acts as preservative?
 A. 0.2–0.5
 B. 0.5–0.8
 C. 0.05–0.1
 D. None
19. Most widely used flavouring agent in food industry is
 A. Menthol
 B. Chloroform
 C. Monosodium glutamate
 D. None of the above
20. Ingredients used to enhance the elegance of pharmaceutical formulations are called _____.
 A. Carminatives
 B. Pharmaceutical aids
 C. Astringent
 D. None of the above
21. Cochineal is a _____ agent.
 A. Flavouring
 B. Colouring
 C. Sweetening
 D. Thickening
22. Which of the following flavour is not responsible for sour taste?
 A. Citrus flavour
 B. Liquorice
 C. Raspberry
 D. Mint spice
23. Which of the following agents are used as flavouring agents?
 A. Menthol
 B. Chloroform
 C. Both A and B
 D. None of the above
24. Which of the following is a coal tar colour?
 A. Amaranth
 B. Caramel
 C. Titanium dioxide
 D. Cochineal
25. The colouring agents are permitted under the Act _____.
 A. Pharmacy Act 1948
 B. DMR Act 1954
 C. NDPS Act 1985
 D. D and C Act 1940
26. Which of the following is used as a colouring agent?
 A. Lemon
 B. Sorbitol
 C. Clove
 D. Caramel
27. Pharmaceutical aids are also known as _____.
 A. Adjuvants
 B. Adjuncts
 C. Excipients
 D. All of the above
28. Titanium dioxide is used as _____.
 A. Flavouring agent
 B. Colouring agent
 C. Sweetening agent
 D. All of the above
29. BHA and BHT are used as _____.
 A. Buffers
 B. Antioxidants
 C. Diluents
 D. Vehicles
30. _____ is a propellant for sprays and aerosols.
 A. Benzalkonium chloride
 B. Trichlorofluoromethane
 C. Carbon tetrachloride
 D. Propyl gallate

Answer Key

1 A	2 D	3 D	4 D	5 A	6 B	7 C	8 D	9 A	10 A
11 A	12 C	13 A	14 D	15 A	16 C	17 D	18 A	19 C	20 B
21 B	22 D	23 C	24 A	25 D	26 D	27 D	28 B	29 B	30 B



Unit Operations

Size Reduction, Size Separation, Mixing, Filtration, Drying, Extraction

- _____ is a solvent for extraction of alkaloids, glycosides, volatile oils and resins.
A. Water B. Alcohol
C. Kerosene D. Light petroleum
- Following are the processes of extraction *except* _____.
A. Percolation B. Digestion
C. Drying D. Maceration
- _____ is used for drying of biological product like plasma, serum, vaccines, enzymes, etc.
A. Tray dryer B. Spray dryer
C. Rotary dryer D. Freeze dryer
- Thermolabile material can be sterilised by using _____.
A. Filter leaf B. Sintered glass filter
C. Filter press D. Filter paper
- The efficiency of ball mill is maximum at _____.
A. Low speed
B. High speed
C. Very high speed
D. 2/3 speed (critical speed)
- Most simple and most frequently used method for size separation is _____.
A. Sieve Shaker
B. Cyclone separator
C. Air separator
D. Elutriation
- Which type of mixtures is easily formed?
A. Positive B. Negative
C. Neutral D. Ampholytic
- The process of separation of insoluble particle from suspension or slurry is called _____.
A. Filtration B. Sieving
C. Distillation D. Drying
- Which one of the following does not influence filtration?
A. Temperature B. Density
C. Viscosity D. pH
- Metafilter is also known as _____.
A. Filter press B. Filter candle
C. Edge filter D. Sintered filter
- Filter aids are added to the liquid _____.
A. To increase the porosity
B. To increase cake permeability
C. Both A and B
D. None of the above
- Size reduction is also called _____.
A. Comminution
B. Continuation
C. Communication
D. Elutriation
- Which of the following factor is not affecting on the process of size reduction?
A. Hardness B. Stickiness
C. Viscosity D. Abrasiveness
- In the ball mill maximum size reduction occurs at _____ speed.
A. Low
B. High
C. Optimum/critical
D. None of the above

15. Gyration is the rotation of the wheel which makes the sieves to _____.
A. Vibrate B. None
C. Oscillate D. Spin
16. The mechanisms of mixing are _____.
A. Convection
B. Diffusion
C. Convection, shear, diffusion
D. Both A and B
17. Which of the following is NOT a method used for size reduction?
A. Cutting B. Impact
C. Burning D. Shear
18. A ball mill works on the principle of _____.
A. Impact B. Attrition
C. Impact and attrition D. None of the above
19. Attrition is a mechanism of size reduction found in _____.
A. Ball mill B. Plate mill
C. Roller mill D. All of the above
20. Size reduction helps in _____.
A. Increase size
B. Decrease absorption
C. Decrease solubility
D. Decrease size and increase stability
21. For ease in reduction of size, material must be _____.
A. Hard, brittle B. Soft tough
C. Hard tough D. Soft brittle
22. Principle of hammer mill is _____.
A. Cutting B. Crushing
C. Attrition D. Impact
23. The mechanism involved in the ball mill is _____.
A. Compression
B. Impact
C. Attrition
D. Attrition and impact
24. _____ of the space of the cylinder is occupied by the balls in ball mill.
A. 100% B. 30 to 50%
C. 80% D. 20%
25. The rate of filtration is expressed as _____.
A. Mass
B. Volume in litres per unit time
C. Weight
D. Density
26. In cyclone separator, the separation depends on
A. Density in shape
B. Shape and surface area
C. Size and density
D. Surface texture and size
27. Which of the following is the type of size separation?
A. Sifting
B. Classifying and screening
C. Sieving
D. All of the above
28. A powder of which the entire particles pass through a Sieve No. 10 and not more than 40.0% through a Sieve No. 44?
A. Coarse powder
B. Moderately coarse powder
C. Fine powder
D. Very fine powder
29. The filtration which involves the separation of the intermicellar liquid from solid by semipermeable membrane under reduced pressure is _____.
A. Surface B. Ultra filtration
C. Cross flow D. Depth
30. The main component of asbestos is _____.
A. Aluminosilicate B. Carbon
C. Sodium D. Cellulose
31. Surface type cartridges are usually in the shape of candles made up of porcelain, and _____.
A. Asbestos B. Cotton
C. Glass D. Kieselguhr
32. The freeze dryer works on the principle of _____.
A. Freezing and sublimation
B. Freezing
C. Sublimation
D. Melting
33. The solid residue which is obtained after the completion of the extraction process is called _____.
A. Solvent B. Marc
C. Filtrate D. Extract
34. Continuous hot percolation is called _____.
A. Soxhlation B. Maceration
C. Infusion D. Decoction
35. Size classification is also known as _____.
A. Size separation B. Size reduction
C. Size analysis D. Size filtration

36. Which mechanism help in size separation by sieve shaker?
A. Centrifugal force B. Sedimentation
C. Brushing D. Shearing forces
37. Movement of particle can be enhanced during size separation by which one of the following modes?
A. Agitation B. Attrition
C. Gravitation D. Mixing
38. The solvent used for extraction is called _____.
A. Menstruum B. Marc
C. Expression D. Galenical
39. For _____ mixing each particle of one material lies as nearly adjacent as possible to a particle of other material.
A. Positive B. Negative
C. Perfect D. Neutral
40. The Pharmacopoeia has prescribed only the upper limit for the _____ fine grades of powder
A. 2 B. 3
C. 5 D. 4
41. The preparations which are made by using extraction method are called _____.
A. Biologicals B. Botanicals
C. Galenicals D. All of the above
42. _____ is not used for mixing, in dispensing.
A. Sizing B. Spatulation
C. Trituration D. Tumbling
43. Which type of the following is also known as twin shell blender?
A. Double cone blender B. Tumbler mixer
C. Sigma blade mixer D. Paddle mixer
44. Degree of mixing is also known as _____.
A. Degree of homogeneity B. Extent of mixing
C. Random mixing D. None of the above
45. Sieve through which all the particles must pass in case of moderately fine particles is _____.
A. 44 B. 85
C. 22 D. 10
46. The principle behind cyclone separator is _____.
A. Agitation B. Centrifugal force
C. Sieves D. None of the above
47. Sintered glass filter is made from _____.
A. Limestone B. Soda-lime glass
C. Sulphur glass D. Borosilicate glass
48. Membrane filter works on the principle of _____.
A. Physical separation B. Chemical separation
C. Shearing force D. Gravitational force
49. 'Kozeny-Carman equation' and 'Poiseuille's law' are the theories of _____.
A. Extraction B. Separation
C. Filtration D. Mixing
50. Final removal of liquid from the solid with the help of heat is called _____.
A. Extraction B. Drying
C. Separation D. Mixing
51. _____ is also known as freezer drying.
A. Homogenization B. Lyophilization
C. Clarification D. Filtration
52. In cyclone separator the powder is separated depending on its _____.
A. Particle size B. Density
C. Particle size and density D. Shape of powder
53. Which of the following equipment can be used for mixing of powder?
A. Turbine mixer B. Double cone blender
C. Sigma blade mixer D. All of the above
54. A clear liquid passing through the filter is called _____.
A. Filtrate B. Slurry
C. Filter media D. Filter cake
55. The separation process in which the amount of solid in liquid is not more than 1% w/v is called _____.
A. Clarification B. Filtration
C. Centrifugation D. Evaporation
56. Leaching means _____.
A. Liquid-liquid extraction B. Solid-liquid extraction
C. Solid-phase extraction D. All of the above
57. _____ is the process of removal of an active constituent from crude drug by using suitable solvent in which it is soluble.
A. Filtration B. Size reduction
C. Drying D. Extraction
58. Continuous hot percolation is also known as _____.
A. Lyophilization B. Soxhalation
C. Homogenization D. None of the above
59. Which of the following is standard for sieve?
A. Sieve number B. Nominal aperture size
C. Nominal diameter of wire D. All of the above

60. Which materials are not used in drying in a freeze dryer?
 A. Seafood B. Fruits
 C. Pharmaceuticals D. Dyes
61. In drying process, the final product is in the form of _____.
 A. Slurry B. Solution
 C. Solid D. Solvent concentrate
62. Condition that is highly critical in drying process is _____.
 A. Moisture B. Pressure
 C. Temperature D. Volume
63. Advantage of fluidized bed dryer is _____.
 A. No attrition
 B. Entire material is continuously exposed to heat source
 C. Fluffy mass is formed
 D. Humidity can be increased
64. In sieving, sieves are arranged in _____ orders.
 A. Ascending B. Random
 C. Descending D. Horizontal
65. Mechanism of mixing in silverson mixer is _____.
 A. Convective B. Laminar
 C. Random D. Turbulent
66. A double cone mixer is used for mixing _____.
 A. Solids B. Semi-solids
 C. Liquids D. Suspensions
67. Triple roller mill works on the principle of _____.
 A. Diffusion mixing B. Convective mixing
 C. Dry mixing D. Shear mixing
68. 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 the above
69. Which of the following is not a filter aid?
 A. Diatomaceous earth B. Perlite
 C. Cellulose D. Cotton
70. Filter aids are added to the liquid _____.
 A. To increase the porosity
 B. To increase cake permeability
 C. Both A and B
 D. None of the above
71. Which of the following theory not describe rate of filtration?
 A. Darcy Law
 B. Poiseuille's equation
 C. Kozeny-Carman equation
 D. Noyes-Whitney equation
72. 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
73. Which of the following dryer is known as lyophilizer?
 A. Fluidized bed dryer B. Spray dryer
 C. Freeze dryer D. Vacuum dryer
74. _____ means extraction carried out by mechanical means.
 A. Evaporation B. Expression
 C. Galenicals D. Filtration
75. Proper drying can prevent _____ of the product.
 A. Loss B. Weight
 C. Deterioration D. Solubility
76. Drying involves _____ transfer operation.
 A. Mass B. Heat
 C. Mass and heat D. Either mass or heat
77. For extraction of thermolabile drugs which extraction process should be used?
 A. Percolation B. Maceration
 C. Decoction D. Both A and B
78. The solvent used for extraction is known as
 A. Distillate B. Extract
 C. Marc D. Menstruum
79. The inert insoluble material that remains after extraction is called _____.
 A. Distillate B. Extract
 C. Marc D. Menstruum
80. Which of the following process is used for extraction?
 A. Infusion B. Decoction
 C. Digestion D. All of the above
81. Pouring water over the drugs and then allowing it to keep in contact with water usually for the 15 min is called _____.
 A. Infusion B. Decoction
 C. Percolation D. Digestion

82. Extraction does not involve one of the following components _____.
A. Active constituents
B. Solvent
C. Vapour
D. Crude solids
83. Which of the following is not a mechanism of size reduction?
A. Compression
B. Impact
C. Attrition
D. Elutriation
84. Following are the processes used for extraction *except* _____.
A. Maceration
B. Sublimation
C. Digestion
D. Percolation
85. Preparations like infusions, decoctions, spirits, elixirs are commonly known as _____.
A. Pharmaceuticals
B. Galenicals
C. Nutraceuticals
D. Cosmeceuticals
86. Solvent used for extraction is _____.
A. Water
B. Alcohol
C. Ether
D. All of the above
87. What is the disadvantage of alcohol as solvent for extraction?
A. Toxicity
B. Stability
C. Cost
D. Selectivity
88. Ball mill is based on principle of _____.
A. Cutting
B. Compression
C. Impact and attrition
D. Attrition
89. Hammer mill is based on the principle of _____.
A. Impact
B. Attrition
C. Cutting
D. Compression
90. Elutriation is a method of _____.
A. Size reduction
B. Extraction
C. Size separation
D. Filtration
91. In cyclone separator _____ force is used to separate solid from the fluid.
A. Fractional force
B. Centrifugal force
C. Electromagnetic force
D. Nuclear force
92. _____ is a unit operation in which two or more substance combined together in such a way that each particle of material looks similar to particles of other material.
A. Filtration
B. Extraction
C. Mixing
D. Drying
93. Following is the mechanism of mixing _____.
A. Shear mixing
B. Convective mixing
C. Diffusion mixing
D. All of the above
94. Propeller mixer and turbine mixer are used for mixing of _____.
A. Solids
B. Liquids
C. Semi-solids
D. Powders
95. Double cone blender works on the mechanism of _____.
A. Convective mixing
B. Diffusion mixing
C. Shearing mixing
D. All of the above
96. Silverson mixer is used for _____.
A. Homogenization
B. Filtration
C. Extraction
D. Separation
97. Clarification is used for the removal of small amount of suspended solids _____.
A. Not more than 2%
B. Not more than 0.15%
C. Not more than 1.5%
D. Not more than 2.5%
98. The deposited layer of solid on the filter medium is called _____.
A. Filter cake
B. Filter medium
C. Filtrate
D. Slurry
99. Which of the following filters are used for sterile filtration?
A. Cotton wool and filter paper
B. Cotton wool and glass wool
C. Membrane filter and sintered glass filter
D. Muslin cloth and asbestos
100. _____ are the examples of filter aids.
A. Diatomic and Kieselguhr
B. Asbestos and cotton wool
C. Glass wool and cotton wool
D. Muslin cloth and asbestos

Answer Key

1 B	2 C	3 D	4 B	5 D	6 A	7 A	8 A	9 D	10 C
11 C	12 A	13 C	14 C	15 D	16 C	17 C	18 C	19 D	20 D
21 A	22 D	23 D	24 B	25 B	26 C	27 D	28 A	29 B	30 A
31 D	32 A	33 B	34 A	35 A	36 D	37 A	38 A	39 C	40 A
41 C	42 A	43 A	44 A	45 A	46 B	47 D	48 A	49 C	50 B
51 B	52 C	53 B	54 A	55 A	56 B	57 D	58 B	59 D	60 D
61 C	62 A	63 B	64 C	65 D	66 A	67 D	68 A	69 D	70 C
71 D	72 A	73 C	74 B	75 C	76 C	77 C	78 C	79 C	80 D
81 A	82 C	83 D	84 B	85 B	86 D	87 C	88 C	89 A	90 C
91 B	92 C	93 D	94 B	95 B	96 A	97 B	98 A	99 C	100 A

Tablets and Capsules

1. The disintegration time limit for film coated tablet is _____.
A. 15 minutes B. 30 minutes
C. 45 minutes D. 60 minutes
2. Which of the following is used as glidant in tablet formulation?
A. Cellulose acetate phthalate
B. Talc
C. Polyvinyl chloride
D. Carbowax
3. Which type of coating is done to disintegrate the tablet in intestine?
A. Sugar coating
B. Film coating
C. Enteric coating
D. None of the above
4. Which of the following is a method of preparation of granules?
A. Slugging
B. Dry granulation
C. Wet granulation
D. All of the above
5. The partial or complete removal of top or bottom portion of tablet is known as _____.
A. Picking B. Capping
C. Sticking D. Mottling
6. Shellac is the material used in _____ of tablets
A. Film coating
B. Enteric coating
C. Sugar coating
D. Control release shooting
7. Disintegration time for enteric coated tablet as per IP is _____.
A. 1 hour B. 2 hours
C. 5 hours D. 3 hours
8. The strength of the tablet is measured by _____.
A. Thickness
B. Weight variation
C. Friability
D. None of the above
9. How many tablets are required for content uniformity test?
A. 10 B. 20
C. 30 D. 40
10. The temperature of dissolution media is maintained at by the constant temperature is _____.
A. $37 \pm 0.5^\circ\text{C}$ B. $37 \pm 1.0^\circ\text{C}$
C. $37 \pm 1.5^\circ\text{C}$ D. $37 \pm 2^\circ\text{C}$
11. Weight variation for tablet weight ranging from 80–250 mg is _____.
A. 10% B. 7.5%
C. 5% D. None of the above
12. Lactose is used as _____.
A. Diluent B. Glidant
C. Lubricant D. Disintegrant
13. To increase bulk of the tablet, which of the following excipients is often added to tablet formulation?
A. Glidants
B. Lubricants
C. Diluents
D. Disintegrants

14. Which of the following excipients can be used as a binder in granulation?
 - A. Magnesium stearate
 - B. Starch mucilage
 - C. Kaolin
 - D. Fuller's earth
15. Unequal distribution of colour in tablet is known as _____.
 - A. Capping
 - B. Picking
 - C. Mottling
 - D. Lamination
16. _____ is performed to determine the ability of tablet withstand wear and tear during packing, handling and transportation.
 - A. Disintegration test
 - B. Friability test
 - C. Dissolution test
 - D. All of the above
17. _____ means formation of film surface like orange peel due to rapid drying.
 - A. Wrinkling
 - B. Blistering
 - C. Sweating
 - D. Orange peel
18. Disintegration time of effervescent tablet is _____.
 - A. 3 minutes
 - B. 5 minutes
 - C. 15 minutes
 - D. 30 minutes
19. Separation of tablet in two or more distinct layers is called _____.
 - A. Picking
 - B. Capping
 - C. Lamination
 - D. Broken
20. Appearance of uneven spot on a film surface of the tablet is known as _____.
 - A. Splitting
 - B. Pitting
 - C. Blistering
 - D. Flaking
21. Disintegration time for hard gelatin capsule is _____.
 - A. 30 minutes
 - B. 50 minutes
 - C. 60 minutes
 - D. 70 minutes
22. _____ are solid dosage form in which drugs or inert substances are enclosed in small water-soluble shell of gelatin.
 - A. Tablet
 - B. Pills
 - C. Capsule
 - D. Granules
23. _____ is an ingredient of opaque hard gelatin capsule.
 - A. Glycerine
 - B. Titanium dioxide
 - C. Polyhydric alcohol
 - D. Sorbitol
24. _____ should be stored at temperature not exceeding 30°C.
 - A. Tablet
 - B. Capsule
 - C. Sustained release tablet
 - D. Sublingual tablet
25. The disintegration time for soft gelatin capsule is _____.
 - A. 45 minutes
 - B. 60 minutes
 - C. 20 minutes
 - D. 10 minutes
26. Gelatin is a hydrolysed product of _____.
 - A. Pectin
 - B. Tannin
 - C. Alkaloid
 - D. Collagen
27. The elasticity of the soft gelatin capsule shell is improved with the addition of _____.
 - A. Lubricant
 - B. Increasing water content
 - C. Plasticizer
 - D. None of the above
28. Rotary die process is used for _____ filling into capsules.
 - A. Powders
 - B. Liquids
 - C. Pellets
 - D. Granules
29. The moisture content of a soft gelatin capsule is _____.
 - A. <10%
 - B. 9–13%
 - C. >16%
 - D. 20–26%
30. Capsules normally fall into two main categories as _____.
 - 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
31. The largest size of capsule is denoted by which number?
 - A. 000
 - B. 1
 - C. 2
 - D. 5
32. Which of the following steps NOT involved in manufacturing of "hard gelatine capsule shells"?
 - A. Dipping
 - B. Spinning
 - C. Trimming
 - D. Roughing
33. The plasticiser used in manufacturing of soft gelatin capsule is _____.
 - A. Sorbitol
 - B. Povidone
 - C. Polyethylene glycol
 - D. Hydroxypropyl methylcellulose

34. Which step is involved in hard gelatin capsule shells production?
 A. Dipping B. Spinning
 C. Trimming D. All of the above
35. The moisture content of a hard gelatin capsule is _____.
 A. <10% B. 10–13%
 C. 12–16% D. >16%
36. Which capsule size has the smallest capacity?
 A. 0 B. 1
 C. 3 D. 5
37. Capsules are
 A. Unit solid dosage forms
 B. Liquid dosage form
 C. Gas dosage form
 D. All of the above
38. Empty gelatine capsule shell can be made from _____.
 A. Gelatine B. HPMC
 C. Carragenan D. All of the above
39. Empty capsule has moisture content in the range of _____.
 A. 60% B. 12–15%
 C. 50–70% D. 30–64%
40. The capsule size number for the capacity of 300 milligram powdered drug is _____.
 A. 00 B. 1
 C. 2 D. 3

Answer Key

1 B	2 B	3 C	4 D	5 B	6 B	7 D	8 C	9 A	10 A
11 C	12 A	13 C	14 B	15 C	16 B	17 D	18 B	19 C	20 C
21 A	22 C	23 B	24 B	25 B	26 D	27 C	28 B	29 B	30 A
31 A	32 D	33 A	34 D	35 C	36 D	37 A	38 A	39 B	40 B

Liquid Oral Preparations

Solutions, syrups, Elixirs, Emulsion, Suspensions

- _____ is a formulation of relatively concentrated layer of emulsion from the original.
A. Cracking B. Flocculation
C. Creaming D. Disintegration
- Which of the following is instability in the emulsion?
A. Phase inversion B. Cracking
C. Creaming D. All of the above
- HLB means _____.
A. Hydrolytic lipolytic balance
B. Hydrophilic lipophilic balance
C. Hydrogen lipid balance
D. High lipid balance
- HLB plays an important role in _____ of emulsion
A. Dissolution and disintegration
B. Formation and solubility
C. Formulation and stability
D. None of the above
- _____ in 1949 discovered HLB method.
A. Griffin
B. Darcy
C. Poiseulle
D. Kozeny-Carman
- A wetting agent is included in the formulation of a suspension, particularly when the suspended particles _____.
A. Are hydrophobic
B. Are denser than the vehicle
C. Are water soluble
D. Have lesser interfacial tension
- For an ideal suspension, the sedimentation volume should be _____.
A. Equal to one
B. Less than one
C. More than one
D. Zero.
- The size of dispersed particles in coarse dispersion ranges from _____.
A. 1 μm to 100 μm
B. 1 nm to 100 nm
C. 1 mm to 100 cm
D. Less than 1 μm
- The primary emulsion formula for fixed oils is _____.
A. 4:2:1 B. 3:2:1
C. 2:2:1 D. 1:2:1
- In suspensions _____ are added to suspend the insoluble drug in the vehicle.
A. Suspending agents B. Emulsifying agents
C. Surfactants D. Electrolytes
- In suspensions, the stability of suspension depends upon _____.
A. Sedimentation volume B. Zeta potential
C. Particle size D. All of the above
- Simple syrup contains _____ amount of sucrose.
A. 50% w/v B. 60% w/v
C. 66.7% w/v D. 85% w/v
- Elixir contains _____ amount of alcohol.
A. 10–50% B. 5–15%
C. 4–40% D. 100%

14. A _____ is a mixture in which one substance of microscopically dispersed insoluble particles is suspended through another substance.
A. Suspension B. Emulsion
C. Colloid D. None of the above
15. The primary emulsion formula for volatile oil is _____.
A. 1:2:1 B. 2:2:1
C. 3:2:1 D. 1:1:2
16. Dry syrups are _____.
A. Suspensions B. Emulsions
C. Solutions D. None of the above
17. Monophasic liquid dosage forms include _____.
A. Aromatic waters B. Tinctures
C. Solutions D. All of the above
18. Simple syrup is a saturated solution of _____.
A. Sucrose B. Fructose
C. Dextrose D. None of the above
19. HLB value of SLS is _____.
A. 10 B. 12
C. 40 D. None of the above
20. The component present in solution in small quantity is known as _____.
A. Solvent B. Solution
C. Solute D. Liquid
21. Which of the following is not monophasic liquid dosage form?
A. Solution B. Gargles
C. Suspension D. Enemas
22. Elixirs are _____.
A. Hydro-alcoholic liquids B. Aqueous
C. Viscous D. Semi-solids
23. Mandl's paint is also known as _____.
A. Compound iodine throat paint
B. Aqueous iodine solution
C. Strong iodine solution
D. Lugol's solution
24. Syrups containing lesser concentration of sucrose require _____.
A. Diluents B. Preservative
C. Binders D. Adjuvants
25. Tween and spans are _____.
A. Diluents B. Wetting agents
C. Flocculating agents D. Colouring agents
26. Which method is used for evaluation or stability of suspension?
A. Sedimentation method B. Electrokinetic method
C. Rheological method D. All of the above
27. Liniments must not be applied on the _____ skin.
A. Swelled B. Broken
C. Painful D. Normal
28. Immiscibility of oil and water can be overcome by _____.
A. Formulating an emulsion
B. Formulating suspension
C. Formulating an insufflation
D. Formulating an elixir
29. Gargles must be _____ before use.
A. Concentrated B. Warmed
C. Diluted D. Cooled
30. All are the tests used for identification of emulsion except _____.
A. Fluorescence test B. Staining test
C. Electric conductivity test D. LAL test

Answer Key

1 C	2 D	3 B	4 C	5 A	6 A	7 A	8 D	9 A	10 A
11 D	12 C	13 C	14 A	15 B	16 A	17 D	18 A	19 C	20 C
21 C	22 A	23 A	24 B	25 C	26 D	27 B	28 A	29 C	30 D

Topical Preparations

Ointments, Creams, Pastes, Topical Gels, Liniments, Lotions, Suppositories, Pessaries, Nasal Preparations, Ear Preparations, Powders, Granules



1. _____ disintegrate or melt at body temperature.
A. Powders B. Suppository
C. Tablet D. Capsule
2. Suppositories intended for the vagina are called _____.
A. Cone B. Suppositories
C. Bougies D. Pessaries
3. Weight of rectal suppository is generally _____ grams.
A. 5–6 B. 1–2
C. 3–4 D. 6–7
4. Suppositories intended for the nose and urethra are called _____.
A. Bougies B. Pessaries
C. Suppositories D. None of the above
5. Theobroma oil is also known as _____.
A. Bees wax B. Lanolin
C. Coca butter D. Macrogols
6. Witepsol and Massupol are suppository bases belongs to type _____.
A. Fat bases
B. Water soluble bases
C. Emulsifying bases
D. None of the above
7. _____ of suppository mould is necessary to avoid sticking of suppository to the mould.
A. Lubrication B. Purification
C. Calibration D. Washing
8. Weight of pessaries varies from _____ gm.
A. 1–2 B. 2–3
C. 4–8 D. 8–10
9. Suppositories are generally evaluated by _____.
A. Melting range test B. Breaking test
C. Liquefaction D. All of the above
10. The intracellular absorption of the drugs through skin in which the drugs diffuse through the _____ present in the stratum corneum.
A. Lipids B. Proteins
C. Minerals D. None of the above
11. Toothpastes are _____ type of pastes.
A. Fatty B. Aqueous
C. Non-aqueous D. Hydrocolloids
12. Agents which prevent products from drying are called _____.
A. Astringent B. Antiseptic
C. Humectants D. Antimicrobial
13. Bentonite is an example of _____.
A. Hydrogel B. Organogel
C. Xerogel D. Non-aqueous gel
14. Gels are prepared by _____ method.
A. Fusion B. Dispersion
C. Cold D. All of the above
15. Liniments are applied with _____.
A. Without friction B. With friction
C. Without massage D. None of the above
16. Calamine lotion is used as _____.
A. Topical protectant B. Abrasive
C. Antidote D. Antipyretic
17. Macrogols are _____.
A. Hydroalcohols B. Polyethylene glycols
C. Ethylene dioxides D. Methylsalicylate

18. The number of parts by weight of medicament that displaces one part by weight of base is _____.
 A. Density value B. Saponification value
 C. Iodine value D. Displacement value
19. Petrolatum are example of _____.
 A. Water-soluble bases B. Water removable
 C. Emulsion bases D. Hydrocarbon bases
20. Sulphur ointment is prepared by _____.
 A. Emulsification method
 B. Fusion method
 C. Levigation method
 D. Chemical reaction method
21. Pastes consists of _____ % of solids.
 A. 0–10 B. 20–50
 C. 100 D. 0
22. Pastes should contain _____ solids to allow perspiration.
 A. Porous B. Larger
 C. Smaller D. Fine
23. The length of urethral bougies is _____.
 A. 100–150 mm B. 20–30 mm
 C. 10–20 mm D. 10–50 mm
24. Which of the following mechanical equipment can be used for emulsification?
 A. Homogenizers B. Mechanical stirrers
 C. Ultrasonifiers D. All of the above
25. Which of the following is not used as an emulsifying agent?
 A. Surfactant B. Hydrophilic colloids
 C. Electrolytes D. Finely divided solids
26. Most widely used hydrocarbon in semisolid dosage forms is _____.
 A. Petrolatum B. Mineral oil
 C. Both A and B D. None of the above
27. A suppository is generally intended for use in _____.
 A. Rectum B. Vagina
 C. Urethra D. All of the above
28. Vaginal suppositories also called _____.
 A. Pessaries B. Simple suppositories
 C. Bougies D. None of the above
29. Which of the following is not a vegetable oil?
 A. Peanut oil B. Almond oil
 C. Olive oil D. Petrolatum
30. _____ are water-soluble ointment basis.
 A. Cetrimide B. Macrogols
 C. Wool fat D. YSP
31. YSP stands for _____.
 A. Yellow soft polymer
 B. Yellow soft polycarbon
 C. Yellow soft paraffin
 D. Yellow soft polyhalide
32. Wool fat is also called _____.
 A. Anhydrous lanolin B. Lanolin
 C. Petrolatum D. Vaseline
33. Paste usually contains _____.
 A. Beewax B. Glycerin
 C. Wool alcohol D. Cetrimide
34. Liniments usually contain counter irritants like _____.
 A. Almond oil
 B. Beewax
 C. Lanolin
 D. Methyl salicylate
35. Gum Arabic is a _____.
 A. Anionic polysaccharide
 B. Cationic polysaccharide
 C. Neutral polysaccharide
 D. None of the above
36. Which of the following is not a semisolid dosage form?
 A. Paste B. Creams
 C. Ointments D. Suspensions
37. Generally, pastes contain _____.
 A. High percentage of insoluble solids
 B. Low percentage of insoluble solids
 C. Both A and B
 D. None of the above
38. Lotion is fluid preparation applied to skin _____.
 A. Without friction
 B. With friction
 C. With massage
 D. None of the above
39. _____ are used for soothing, cooling and softening effect on the skin.
 A. Liniment B. Paste
 C. Lotion D. Gargles
40. The most common vehicle for nasal preparation is _____.
 A. Water B. Glycerine
 C. Ethyl alcohol D. Propylene glycol

41. Nasal drops must be _____ with nasal fluid.
 A. Hypertonic B. Hypotonic
 C. Isotonic D. Paratonic
42. _____ are also called otic or aural preparations.
 A. Nasal drop B. Ear drop
 C. Eye drop D. None of the above
43. Nasal drop must not interfere with the _____ action of epithelial cilia of nasal mucosa.
 A. Smoothing action
 B. Cleansing action
 C. Relieving action
 D. All of the above
44. Ear drop solution is generally prepared by using _____.
 A. Water
 B. Glycerine and propylene glycol
 C. Dil alcohol
 D. All of the above
45. _____ is used for to instilling the nasal drops in nasal cavity.
 A. Soft containers
 B. Sifters
 C. Dropper
 D. None of the above
46. Nasal drop should be isotonic with _____.
 A. 0.3% Sodium chloride
 B. 0.4% Sodium chloride
 C. 0.5% Sodium chloride
 D. 0.9 % Sodium chloride
47. Ear drops are generally used for _____.
 A. Cleaning
 B. Softening the wax
 C. Treating the mild infections
 D. All of the above
48. Most preferred vehicles for ear drop is _____.
 A. Glycerin
 B. Propylene glycol
 C. Both A and B
 D. None of the above
49. The ear drop label should be stated as _____.
 A. For external use only
 B. For internal use only
 C. Dilute before use
 D. None of the above
50. _____ is most effective ingredients for relief from itching and hard wax of ear.
 A. Sodium bicarbonate B. Glycerine
 C. Both A and B D. None of the above
51. One of the common uses of nasal solution is for the relief of _____.
 A. Cough B. Congestion
 C. Throat infection D. Body pain
52. Ear drops and nasal drops should be _____.
 A. Sterile solutions B. Non-toxic
 C. Non-irritant D. All of the above
53. The wrapping of powder in two papers (packing) covering is called _____.
 A. Flexible packing
 B. Blister packing
 C. Double wrapping
 D. Strip packing
54. Double wrapping is essential for _____ drugs
 A. Hydrophilic
 B. Hygroscopic
 C. Lipophilic
 D. None of the above
55. Which of the following powders are applied on umbilical cord of infants?
 A. Dusting powders
 B. Surgical dusting powders
 C. Cosmetic dusting powders
 D. All of the above
56. Effervescent granules usually contain _____.
 A. Sodium bicarbonate, citric acid, tartaric acid
 B. Sodium sulphate, citric acid, tartaric acid
 C. Calcium carbonate, citric acid, tartaric acid
 D. Sodium chloride, citric acid, tartaric acid
57. _____ are very fine medicated powders which are inhaled into nostrils for nasal decongestant action
 A. Dusting powders
 B. Tooth powders
 C. Snuffs
 D. Medicated dusting powders
58. _____ must be sterile.
 A. Face powder
 B. Surgical powder
 C. Both A and B
 D. None of the above

59. _____ is a finely divided powder meant for introduction into the body cavities
- A. Inhalation
 - B. Dusting powders
 - C. Medical powder
 - D. Insufflation
60. _____ powder contains more than one ingredient.
- A. Simple powder
 - B. Compound powders
 - C. Both A and B
 - D. None of the above
61. Method of granule formulation is _____.
- A. Spatulation
 - B. Fusion method
 - C. Wet method
 - D. Both B and C
62. Dusting powders are dispensed in _____ containers.
- A. Plastic
 - B. Sifter top container
 - C. Cardboard box
 - D. None of the above
63. Medicated dusting powders are mainly used for _____.
- A. Superficial skin conditions
 - B. In body cavities
 - C. During surgery
 - D. In major wounds
64. Liquefaction of some solid substances when mixed in a dry form due to adsorption of moisture from environment is due to _____.
- A. Immiscibility
 - B. Insolubility
 - C. Hygroscopicity
 - D. None of the above
65. _____ Containers are labelled with direction, immerse in water for a few seconds and then swallow with draught of water.
- A. Dusting powder
 - B. Cachets
 - C. Insufflations
 - D. Snuffs
66. Powders consisting of more than one ingredient are called _____.
- A. Compound powders
 - B. Simple powders
 - C. Both A and B
 - D. None of the above
67. _____ is supplied in a sterile form.
- A. Tooth powder
 - B. Surgical powder
 - C. Both A and B
 - D. None of the above
68. The method used when potent substances are to be mixed with a large amount of diluents is _____.
- A. Solubility
 - B. Salvation
 - C. Geometric dilution
 - D. Complexation
69. Abrasive agents used in dentifrices are _____.
- A. Calcium sulphate
 - B. Magnesium carbonate
 - C. Sodium carbonate
 - D. All of the above
70. Advantage of powders is _____.
- A. Easy to adjust the dose
 - B. Rapid onset of action
 - C. No difficulty in swallowing
 - D. All of the above
71. _____ are powders consisting of fine particles which are supplied in cylindrical or flat metal boxes with hinge lid meant for inhaling through the nostrils for decongestion.
- A. Snuffs
 - B. Dentifrices
 - C. Eutectic powder
 - D. Explosive powder
72. _____ are intended for cleaning the teeth or other parts of oral cavity using a toothbrush.
- A. Snuffs
 - B. Dentifrices
 - C. Eutectic powder
 - D. Explosive powder
73. Powders are meant for cleansing or irrigation of body cavity with a suitable liquid especially for cleansing vaginal cavity are _____.
- A. Douches
 - B. Snuffs
 - C. Insufflations
 - D. Eutectic
74. Powder containing mixture of powdered ingredients which produces explosion on trituration is _____.
- A. Snuffs
 - B. Dentifrices
 - C. Eutectic powder
 - D. Explosive powder

75. _____ consists of one water molecule which acts as binder in fusion method for making effervescent granules.
 A. Citric acid B. Tartaric acid
 C. Benzoic acid D. All of the above
76. Powders for internal use can be classified as _____.
 A. Divided powders
 B. Bulk powders
 C. Both A and B
 D. Dusting powders
77. Cachets contain dry powder enclosed in a shell commonly prepared from a mixture of _____.
 A. Rice flour and water
 B. Gram flour and water
 C. Polymer
 D. All of the above
78. The substance that tends to liquefy on mixing _____.
 A. Camphor
 B. Thymol
 C. Menthol
 D. All of the above
79. Powders that absorb moisture from the atmosphere but retain its solid form are termed _____.
 A. Efflorescent powders
 B. Deliquescent powders
 C. Hygroscopic powders
 D. Explosive powders
80. Tablet triturates are also called _____.
 A. Moulded tablets
 B. Multilayer tablets
 C. Sublingual tablets
 D. Chewable tablets

Answer Key

1 B	2 D	3 B	4 A	5 C	6 C	7 A	8 C	9 D	10 A
11 D	12 C	13 A	14 D	15 B	16 A	17 B	18 D	19 C	20 C
21 B	22 A	23 A	24 D	25 C	26 C	27 A	28 A	29 D	30 B
31 C	32 A	33 B	34 D	35 C	36 D	37 A	38 A	39 C	40 A
41 C	42 B	43 B	44 D	45 C	46 D	47 D	48 C	49 A	50 C
51 B	52 D	53 C	54 B	55 B	56 A	57 C	58 B	59 D	60 B
61 D	62 B	63 A	64 C	65 B	66 A	67 B	68 C	69 D	70 D
71 A	72 B	73 A	74 D	75 A	76 C	77 A	78 D	79 C	80 A



Sterile Formulations and Immunological Products

1. TPN means _____.
 - A. Total pure nutrition
 - B. Total polymer nutrition
 - C. Total parenteral nutrition
 - D. Total paratonic nutrition
2. SVPs means _____.
 - A. Slow volume parenterals
 - B. Small value parenterals
 - C. Small volume parenterals
 - D. Small viscous parentals
3. The volume of small volume parenteral is less than _____.
 - A. 100 ml
 - B. 200 ml
 - C. 300 ml
 - D. 500 ml
4. SVPs are manufactured as _____.
 - A. Multidose containers
 - B. Single dose containers
 - C. Both A and B
 - D. None of the above
5. _____ is used to detect presence of particulate matter in parental products
 - A. Pyrogen test
 - B. Leaker test
 - C. Sterility test
 - D. Clarity test
6. Bacterial endotoxin test is also known as _____.
 - A. Clarity test
 - B. LAL test
 - C. Leaker test
 - D. Sterility test
7. Drugs are injected between first and second cervical nerve is called _____ route.
 - A. Intracisternal
 - B. Intrathecal
 - C. Intra-articular
 - D. Peridural
8. LAL stands for _____.
 - A. Limulus acyte lysate
 - B. Limulus amoebocyte lysate
 - C. Left auricular lymphocyte
 - D. Lipo acrylic lysate
9. pH of tear fluid is _____.
 - A. 2.1
 - B. 4.5
 - C. 9.2
 - D. 7.4
10. Which of the following is gelling agent?
 - A. EDTA
 - B. Lanolin
 - C. Parabon
 - D. Sodium alginate
11. Injections are _____ preparations.
 - A. Conventional
 - B. Non-sterile
 - C. Sterile
 - D. Traditional
12. Drugs are injected into subarachnoid space is called _____ route.
 - A. Intravenous
 - B. Intrathecal
 - C. Intra-articular
 - D. Peridural
13. Viscosity enhancer in ophthalmic preparation is _____.
 - A. Poly vinyl alcohol
 - B. Povidone
 - C. Dextran
 - D. Macrogol
14. Ophthalmic solution is sterilized by _____.
 - A. Autoclave
 - B. Hot air oven
 - C. Membrane filter
 - D. Bacterial filters
15. Drugs are injected into bone is called _____ route.
 - A. Intravenous
 - B. Intrathecal
 - C. Intra-articular
 - D. Peridural

16. Which of the following is antibacterial agent?
 - A. Methylcellulose
 - B. Paraffins
 - C. Benzalkonium chloride
 - D. Tween
17. Which one of the following is used to adjust the isotonicity?
 - A. Dextrose
 - B. Boric acid
 - C. NaCl
 - D. All of the above
18. To increase contact time of preparation to eye which of the following additives are added?
 - A. Carboxy methyl cellulose
 - B. Polyethylene glycol
 - C. Methyl cellulose
 - D. All of the above
19. Polysorbate 80 is used in ophthalmic preparations as a _____.
 - A. Preservative
 - B. Antioxidants
 - C. Wetting agents
 - D. All of the above
20. Thermolabile drug containing ophthalmic solution is sterilized by _____.
 - A. Oven
 - B. Autoclave
 - C. Membrane filtration
 - D. All of the above
21. Which of the following wax is used to prepare eye ointment?
 - A. Bees wax
 - B. White soft wax
 - C. Carnauba wax
 - D. None of the above
22. Optimum viscosity of ophthalmic solution ranges between _____.
 - A. 15 and 25 cps
 - B. 10 and 15 cps
 - C. 25 and 30 cps
 - D. 30 and 40 cps
23. _____ % bioavailability is given by IV route.
 - A. 50
 - B. 80
 - C. 100
 - D. 70
24. LVPs are administered in volume of _____ ml per day by slow IV drip.
 - A. 1–10
 - B. 20–50
 - C. 50–100
 - D. 250–1000
25. _____ is a non-aqueous oily vehicle used in parenterals.
 - A. BHT
 - B. BHA
 - C. WFI
 - D. Arachis oil
26. LVPs mean _____.
 - A. Less volume parenterals
 - B. Large volume parenterals
 - C. Large vacuum parenterals
 - D. Large volume polymers
27. LVPs are packed in large _____.
 - A. Multi dose containers
 - B. Single dose containers
 - C. Both A and B
 - D. None of the above
28. _____ is performed to test degree of immunity of an individual against diphtheria.
 - A. Killer test
 - B. Tuberculin test
 - C. Schick test
 - D. Bacillus test
29. The smallpox vaccines are stored at temperature between _____.
 - A. 8° and 10°C
 - B. 2° and 8°C
 - C. 5° and 7°C
 - D. 10° and 12°C
30. The following are endotoxins *except* _____.
 - A. Precipitins
 - B. Opsonins
 - C. Agglutinins
 - D. Virulence
31. The immunity developed after the body has recovered from a disease is called _____.
 - A. Passive immunity
 - B. Active immunity
 - C. Both A and B
 - D. None of the above
32. Vaccines are prepared from immune _____.
 - A. Vitamins
 - B. Blood
 - C. Serum
 - D. Plasma
33. BCG vaccine is used for _____.
 - A. Tuberculosis
 - B. Measles
 - C. Both A and B
 - D. None of the above
34. Which of the following provides the long-term immunity against pathogens?
 - A. Naturally acquired passive immunity
 - B. Artificially acquired passive immunity
 - C. Naturally acquired active immunity
 - D. All of the above
35. The branch of biology which involves immune systems in all organisms is known as _____.
 - A. Zoology
 - B. Microbiology
 - C. Immunology
 - D. Biotechnology
36. The first vaccine was developed by _____.
 - A. Louis Pasteur
 - B. Edward Jenner
 - C. Carl Landsteiner
 - D. Joseph Miester

37. Which of the following immunity is obtained during a lifetime?
 A. Acquired immunity B. Active immunity
 C. Passive immunity D. None of the above
38. _____ are the preparations which are meant for the prevention of diseases such as vaccines or for treatment of disease such as antitoxin and antiserum for diagnostic purpose.
 A. Immunity
 B. Immunological products
 C. Lotions
 D. None of the above
39. A vaccine can be _____.
 A. An antigenic protein
 B. Weakened pathogen
 C. Live attenuated pathogen
 D. All of the above
40. Which of the following protects our body against disease-causing pathogens?
 A. Digestive system B. Respiratory system
 C. Excretory system D. Immune system
41. Hepatitis is an example of _____.
 A. Recombinant vaccine B. Subunit vaccine
 C. Toxoids vaccine D. Killer vaccine
42. Which of the following cells of the immune system do not perform phagocytosis?
 A. Eosinophil B. Basophil
 C. Neutrophil D. Macrophage
43. Newborns get their antibodies from mother's milk. This is an example of _____.
 A. Naturally acquired active immunity
 B. Artificially acquired active immunity
 C. Naturally acquired passive immunity
 D. Artificially acquired passive immunity
44. Vaccination is an example of _____.
 A. Naturally acquired active immunity
 B. Artificially acquired active immunity
 C. Naturally acquired passive immunity
 D. Artificially acquired passive immunity
45. Which of the following immune mechanisms is responsible for protecting us from diseases of other species?
 A. Active immunity
 B. Passive immunity
 C. Innate immunity
 D. Adaptive immunity
46. BCG is _____.
 A. Bacterial Colony Guérin
 B. Bacillus Cox Calmette
 C. Bacillus Calmette-Guérin
 D. Bacterial Centric Guérin
47. Whooping cough is caused by _____.
 A. *Mycobacterium tuberculosis*
 B. *Vibrio cholerae*
 C. *Pseudomonas aeruginosa*
 D. *Bordetella pertussis*
48. Sera contain _____.
 A. Live antigen B. Attenuated antigen
 C. Antibodies D. None of the above
49. Typhus vaccine is _____.
 A. Killed Rickettsia B. Killed bacillus
 C. Live Rickettsia D. Live bacillus
50. Mantoux test is _____.
 A. Tuberculin test B. Schick test
 C. Keller test D. Bacillus test

Answer Key

1 C	2 C	3 A	4 A	5 D	6 B	7 A	8 B	9 C	10 D
11 C	12 B	13 D	14 A	15 C	16 C	17 D	18 D	19 C	20 C
21 B	22 A	23 C	24 D	25 D	26 B	27 B	28 C	29 D	30 D
31 B	32 C	33 A	34 C	35 C	36 B	37 A	38 B	39 D	40 D
41 A	42 B	43 C	44 B	45 C	46 C	47 D	48 C	49 A	50 A



Quality Control and Quality Assurance

1. **SOP means _____.**
 - A. Sample operating procedures
 - B. Standard operating procedures
 - C. Some operating procedures
 - D. Standard ongoing procedures
2. **cGMP means _____.**
 - A. Current Goal Manufacturing Practices
 - B. Current Good Manufacturing Practices
 - C. Current Good Maintenance Practices
 - D. Current Good Managing Practices
3. **_____ explains the GMP and requirement of premises, plants, equipments for pharmaceutical products.**
 - A. Schedule N
 - B. Schedule M
 - C. Schedule W
 - D. Schedule Y
4. **cGMP regulations are established by _____.**
 - A. FDA
 - B. PCI
 - C. IDMA
 - D. IPA
5. **_____ is the documented act of proving that any procedure process, equipment, material, activity or system actually leads to the expected results.**
 - A. Quality control
 - B. Quality assurance
 - C. Validation
 - D. GMP
6. **The soft gelatine capsule involves the process of encapsulation of medicaments with the sizes of _____ ml.**
 - A. 0.1–30
 - B. 40–50
 - C. 60–70
 - D. 80–90
7. **Which of the following is a type of validation?**
 - A. Process validation
 - B. Cleaning validation
 - C. Equipment validation
 - D. All of the above
8. **_____ of an instrument of the process of determining its accuracy.**
 - A. Validation
 - B. Calibration
 - C. Documentation
 - D. Quality control
9. **LAFH is _____.**
 - A. Light air and fluid homogenizer
 - B. Left air flow heat
 - C. Laminar attributes of air humidity
 - D. Laminar air flow hood
10. **BMR is _____.**
 - A. Batch manufacturing record
 - B. Bilayer manufacture register
 - C. Batch multilayer record
 - D. Bilayer multilayer register
11. **The dispensing area has the pressure of _____.**
 - A. 80 Pascal
 - B. 50 Pascal
 - C. 20 Pascal
 - D. 10 Pascal
12. **_____ is the document evidence for the equipment tested at the manufacturers place and operated by end-user.**
 - A. Site acceptance test (SAT)
 - B. Factory acceptance test (FAT)
 - C. Both A and B
 - D. None of the above
13. **Lower the class number, _____ the cleansing of air.**
 - A. Higher
 - B. Lower
 - C. Neutralizes
 - D. Stabilizes

14. Quality control is a _____.
 A. Destructive tool
 B. Managerial tool
 C. Corrective tool
 D. Constructive tool
15. _____ is the document evidence for the equipment that it is not damaged during transport and have undergone sufficient testing at end user's facility and operated as per the expectations of end user.
 A. Site acceptance test (SAT)
 B. Factory acceptance test (FAT)
 C. Both A and B
 D. None of the above
16. Validation of new product is _____.
 A. Prospective validation
 B. Retrospective validation
 C. Concurrent validation
 D. All of the above
17. The measure of capacity to remain unaffected by small variations indicating the reliability during normal use is _____.
 A. Accuracy
 B. Robustness
 C. Precision
 D. Linearity
18. Process validation includes _____.
 A. Prospective validation
 B. Retrospective validation
 C. Concurrent validation
 D. All of the above
19. The interval between lower and higher concentration of an analyte is _____.
 A. Range
 B. Linearity
 C. Accuracy
 D. Precision
20. FDA stands for _____.
 A. Food and Dose Administration
 B. Food and Distribution Administration
 C. Food and Drug Administration
 D. Food and Dental Administration

Answer Key

1 B	2 B	3 B	4 A	5 C	6 A	7 D	8 B	9 D	10 A
11 C	12 B	13 A	14 B	15 A	16 A	17 B	18 D	19 A	20 C



Novel Drug Delivery System

1. **Liposomes consist of bilayer of _____.**
 - A. Hydrophilic molecule
 - B. Hydrophobic molecule
 - C. Both A and B
 - D. None of the above
2. **Liposomes have _____ half life.**
 - A. Longer
 - B. Shorter
 - C. Intermediate
 - D. Both A and B
3. **_____ is a method of preparation of nanoparticle.**
 - A. Pan coating
 - B. Filtration
 - C. Solubilization
 - D. Precipitation
4. **Which among the following is limitation associated with conventional drug delivery system?**
 - A. Lower effectiveness
 - B. Easy of manufacturing
 - C. Decrease side effect
 - D. Septal and temporal control
5. **Drug release from the feedback regulated drug delivery systems depends upon _____.**
 - A. Concentration of biochemical substance
 - B. Physicochemical properties of the drug
 - C. Thickness of the polymer coating
 - D. None of the above.
6. **NDDS improves _____.**
 - A. Solubility properties of drug
 - B. Pharmacokinetics
 - C. Pharmacodynamics
 - D. All of the above
7. **Osmotic drug delivery systems have _____.**
 - A. A membrane that is soluble at intestinal pH
 - B. The membrane is impermeable to GI fluids
 - C. The membrane is permeable to water
 - D. The membrane must swell
8. **_____ is the disadvantage of the NDDS.**
 - A. Higher cost
 - B. Dose dumping
 - C. Poor *in-vitro*–*in-vivo* correlation
 - D. All of the above
9. **Hydration activated drug delivery systems depends on _____.**
 - A. Hydration of polymer
 - B. Ionic strength within the reservoir
 - C. Osmotic pressure and ionic strength
 - D. Osmotic pressure and environment in GIT
10. **Which statement is correct with respect to Novel Drug Delivery Systems?**
 - A. It causes fluctuation of blood levels
 - B. It cannot be target specific
 - C. It increases toxicity of the drug
 - D. It reduces side effects of the drug
11. **Drug release from osmotic drug delivery systems depends on _____.**
 - A. Ionic strength
 - B. Osmotic pressure
 - C. Osmotic pressure and ionic strength
 - D. Osmotic pressure and environment in GIT
12. **NDDS means _____.**
 - A. Non-Drug Delivery System
 - B. Novel Drug Discovery System
 - C. Novel Drug Delivery System
 - D. Novel Dose Delivery System

13. Nanoparticles have a particle size range from _____.
 A. 50–100 nm
 B. 200–500 nm
 C. 300–700 nm
 D. 100–200 nm
14. Drug release from the activation modulated drug delivery systems depends upon _____.
 A. External/internal stimuli
 B. Physicochemical properties of the drug
 C. Thickness of the polymer coating
 D. None of the above
15. Bio-responsive activated drug delivery systems release rate depends on _____.
 A. Hydration of polymer
 B. Concentration of biochemical substance
 C. Osmotic pressure and ionic strength
 D. Osmotic pressure and environment in GIT
16. The size of microsphere ranges from _____ μm
 A. 1–1000
 B. 1000–1500
 C. 1500–2000
 D. None of the above
17. CDDM means _____.
 A. Controlled Drug Delivery Molecules
 B. Control Drug Dissolution Modules
 C. Controlled Drug Delivery Modules
 D. Constant Drug Delivery Modules
18. Which of the following are ‘films and strips’ as a Novel Drug Delivery system?
 A. Spray bandages
 B. Buccal strips
 C. Zero order release film
 D. All of the above
19. _____ are small sterile hypodermic tablets which are placed under skin by minor surgery.
 A. Liposomes
 B. Implants
 C. Nanoparticles
 D. Microspheres
20. Liposomes are spherical structures usually between in a diameter _____ nm
 A. 80–100
 B. 60–100
 C. 55–1000
 D. 15–1000

Answer Key

1 C	2 B	3 D	4 A	5 A	6 D	7 C	8 D	9 A	10 D
11 B	12 C	13 B	14 A	15 A	16 A	17 C	18 D	19 B	20 D