

Final Year B. Pharm CBCS (Semester VIII)
Pharmaceutics IV Theory Examination
ACADEMIC YEAR 2019-2020
MOCK QUESTIONS

Cluster 1

1. Sealed glass containers with an elongated neck
 - a. Gauge
 - b. Ampules
 - c. CSP
 - d. Vial

2. A high efficiency air filter
 - a. HEPA filter
 - b. Diluent
 - c. Final filter
 - d. Web filter

3. A solvent that dissolves a lyophilized powder or dilutes a solution
 - a. Diluent
 - b. Solvent
 - c. Additive
 - d. Admixture

4. Movement of particles in a solution through permeable membranes
 - a. Filter
 - b. Dialysis
 - c. Flow rate
 - d. Anhydrous

5. Methods that maintain sterility products
 - a. Aseptic technique
 - b. Bleaching
 - c. A clean person
 - d. Admixture

6. The rate (in ml/hour or ml/minute) at which the solution is administered to the patient
 - a. Gauge
 - b. Coring
 - c. Diluent

- d. Flow rate
7. The A drugs molecular weight divided by its valence, a common measure of electrolyte concentration.
- a. Coring
 - b. Valence
 - c. Flow rate
 - d. Equivalent weight
8. Chemicals produced by microorganisms that can cause fever reactions in patients
- a. Bacteria
 - b. Viuruses
 - c. Pyrogens
 - d. Microorganisms
9. When a solution has an osmolarity equivalent to that of blood
- a. Hypotonic
 - b. Isotonic
 - c. Hypertoni
 - d. Therapeutic
10. When a solution has a lesser osmolarity than that of blood
- a. Hypotonic
 - b. Hypertonic
 - c. Isotonic
 - d. Tonic
11. Which of the following route has rapid onset of action
- a. Parenteral
 - b. Oral
 - c. Transdermal
 - d. Rectal
12. What percentage of NaCl is isotonic with eyes
- a. 0.5%
 - b. 0.9
 - c. 1.9
 - d. 5

13. Tears have pH of about
- 5.4
 - 6.4
 - 7.4
 - 8.4
14. What percentage of boric acid seems to be isotonic with eyes
- 0.9
 - 1.9
 - 0.5
 - 2.9
15. Which layer of eye is also called as white of eye
- cornea
 - Sclera
 - Iris
 - Retina
16. WFI contains bacteriostatic agents when in containers of
- 100ml of less
 - 30ml of less
 - 50ml of less
 - 10ml of less
17. Parenteral in the form suspension are usually given by
- IV
 - SC or IM
 - ID
 - IA
18. Which of the following used as enteric resin in microencapsulation
- stearic acid
 - PVA
 - Cellulose acetate phthalate
 - Ethyl cellulose
19. Which of the following is not a water soluble coating material
- Ethyl cellulose
 - CMC
 - PVP

- d. Gelatin
20. Which of the following is not used as thickening agent in ophthalmic products
- Methyl cellulose
 - CMC
 - Ethyl cellulose
 - PEG
21. Most commonly used preservative in ophthalmic preparation is
- Chlorobutanol
 - Phenyl mercuric acetate
 - Phenyl mercuric nitrite
 - Benzalkonium choride
22. Which of the following surfactant prefer in ophthalmic due to less irritation?
- ionic
 - cationic
 - amphoteric
 - Nonionic
23. The Sterility test of Liquid involves:
- Colorimetric Assay
 - Guinea Pigs Assay
 - Culturing in the fluid thioglycollate medium
 - HPLC assay
24. Which of the following is TRUE:
- Rabbit pyrogen test is quantitative biologic test
 - Pyrogenic effect is high with IM compared to IV injection
 - Greater danger of pyrogens exists in LVP's than SVP's
 - LAL test is in vivo test
25. Non ionic surfactant vesicles related to:
- Liposomes
 - Niosomes
 - Nanoparticles
 - Nanosuspension
26. Powdered glass test challenges the leaching potential of:
- Exterior structure of glass
 - Plastic containers
 - Interior structure of glass
 - Intact surface of glass

27. The efficiency of HEPA filter is:
- Remove at least 99.97% of airborne particles 0.3 micrometers (μm) in diameter.
 - Remove at least 100% of airborne particles 0.3 micrometers (μm) in diameter.
 - Remove at least 99.97% of airborne particles 2 micrometers (μm) in diameter.
 - Remove at least 97.99% of airborne particles 0.3 micrometers (μm) in diameter.
28. According to IP, the preparation passes the Rabbit Pyrogen test if:
- The group of three rabbits does not exceed 0.6°C
 - The group of three rabbits does not exceed 1.4°C and if the response of individual rabbit is less than 0.3°C
 - The group of three rabbits does not exceed 1.4°C and if the response of individual rabbit is less than 0.6°C
 - The group of six rabbits does not exceed 1.4°C and if the response of individual rabbit is less than 0.6°C
29. Which of the following is NOT true about LAL test:
- It is an in vivo biological test
 - It is performed using lysates of amoebocytes of the horseshoe crab (*Limulus Polyphemus*)
 - It is a biochemical test performed in a test tube
 - It is simple, rapid and more sensitive (5-10 times) than rabbit pyrogen test
30. As per USP which of the following is correct
- WFI should contain NMT 1000 ppm of solids
 - WFI should contain NMT 100 ppm of solids
 - WFI should contain NMT 10 ppm of solids
 - WFI should contain NMT 1 ppm of solids
31. Pyrogens are
- nontoxic
 - thermostable
 - non-filterable
 - volatile
32. Cryoprotectants or Lyoprotectants used in freeze dried parenteral products
- Mannitol
 - Starch
 - Magnesium stearate

- d. PVP
33. Class 1,00,000 is _____ number of particles of size _____ or larger per cubic foot of air
- a. 100, 5 μm
 - b. 1,00,000, 0.5 μm
 - c. 1000, 0.05 μm
 - d. 10,000, 0.005 μm
34. Freeze dried injectable products have to be reconstituted with _____ to form solution or suspension for administration
- a. Sterile Water for Injection
 - b. Water for Injection
 - c. Purified water
 - d. Boiling water
35. Sterility testing of Parenteral products uses Soyabean Casein digest medium for:
- a. *Aspergillus niger*
 - b. *Pseudomonas aeruginosa*
 - c. *E.coli*
 - d. *S. aureus*
36. HEPA filters have capacity to retain particles is as small as _____ size of particles with efficiency _____
- a. 3 μm , 99.97%
 - b. 0.03 μm , 99.9%
 - c. 0.003 μm , 99.97%
 - d. 0.3 μm , 99.99%
37. Lipid layer of tear film contains
- a. electrolytes
 - b. Cholesterol esters
 - c. proteins
 - d. enzymes
38. Which amongst following is the easy to prepare ophthalmic dosage form.
- a. suspension
 - b. ointment

- c. solution
- d. gel

39. Benzalkonium Chloride is incompatible with

- a. nitrates
- b. cetrimide
- c. sodium oleate
- d. sodium stearate

40. Non-swellable water insoluble polymer

- a. Ethyl cellulose
- b. HPMC
- c. Carbopol
- d. Polycarbophil

41. Penn Kinetic system is

- a. Dissolution controlled DDS
- b. Diffusion controlled DDS
- c. Ion exchange DDS
- d. Osmotic DDS

42. Particle size of microcapsules is

- a. 10-5000 micron
- b. 5000- 10000 micron
- c. 10000-12000 micron
- d. 15000-30000 micron

43. State the method of microencapsulation for cinnamon oil.

- a. Air suspension coating
- b. pan coating
- c. coacervation phase separation by salt addition
- d. coacervation phase separation by temperature change

44. In case of pan coating method of microencapsulation, core is in the form of

- a. suspension
- b. solid
- C. emulsion
- d. liquid

45. If mixing is too high, it leads to air entrapment in suspension and air is removed using _____

- a. dessicator
- b. versator
- c. dryer
- d. pump

46. The building(s) used for the factory shall obey the conditions laid down in the Factories Act,

- a. 1945
- b. 1948
- c. 1947
- d. 1946

47. To prevent any interaction between tank material with the product some tanks are lined with _____ as liners

- a. PVC
- b. polytetrafluoroethylene
- c. Polyester

- d. Nylon
48. Prospective validation done when there is a _____ in the manufacturing process
- a. consistency
 - b. change
 - c. uniformity
 - d. similarity
49. _____ is used as mucoadhesive polymer.
- a. span 80
 - b. bentonite
 - c. polysorbate
 - d Carbopol
50. Which component is a primary requirement of osmotically active drug delivery system?
- a. lubricant
 - b. osmotically active salt
 - c. disintegrant
 - d. low density polymer
51. Topical drug delivery systems are used for treating
- a. local infections
 - b. diabetes
 - c. hypertension
 - d. hypotension
52. Ocular inserts have following feature:
- a. blurred vision
 - b. low bioavailability

- c. sticking of eyelids
- d. Increased retention

53. Approach used in colon targeted drug delivery system includes

- a. prodrug
- b. floating polymers
- c. low density polymers
- d. soluble salt

54. In the equation $\log C = \log C_0 - Kt/2.303$, what does C_0 stand for _____

- a. Plasma drug concentration after 60 min of i.v. injection
- b. Plasma drug concentration after 15 min of i.v. injection
- c. Plasma drug concentration after 30 min of i.v. injection
- d. Plasma drug concentration immediately after i.v. injection

55. The i.v. bolus dosage is 500mg and the plasma drug concentration is 0.8 mg/ml. What should be the volume of distribution?

- a. 625 mg/ml
- b. 625 l
- c. 625 ml
- d. 16 mg/ml

56. The acceptable limits of osmolarity with respect to tonicity for parenteral solutions are

- a. 250- 269 mosm/L
- b. 278 – 328 mosm/L
- c. 329-350 mosm/L
- d. 240 -260 mosm/L

57. Trehalose, mannitol, dextrans are examples of ----- used in parenterals

- a. Preservatives

- b. Buffers
 - c. Cryoprotectants
 - d. Vehicles
58. Infusions, irrigating solutions, dialyzing fluids are examples of
- a. Small volume parenterals
 - b. Lyophilized parenterals
 - c. Parenterals for intravenous administration
 - d. Large volume parenterals
59. The sequential steps involved in freeze drying of parenterals are
- a. Freezing, Vacuum Drying, Sublimation
 - b. Vacuum Drying, Freezing, Sublimation
 - c. Freezing, Sublimation, Vacuum Drying
 - d. Sublimation, Vacuum Drying , Freezing
60. The recommended particle size of dispersed active pharmaceutical ingredient in ophthalmic suspension is
- a. More than 10 microns
 - b. Not more than 10 microns
 - c. Not more than 5 microns
 - d. Not more than 20 microns
61. Grade A aseptic area used for manufacturing of ophthalmic solutions prepared by membrane filtration comprises of :
- a. Not more than 100 particles per cubic meter of size 0.5 microns
 - b. Not more than 100 particles per cubic foot of size 0.5 microns
 - c. Not more than 1000 particles per cubic foot of size 0.5 microns
 - d. Not more than 1000 particles per cubic meter of size 0.5 microns
62. The recommended limits for number of subvisible particles in ophthalmic solutions by light obscuration test as per USP are:
- a. Particles of size ≥ 10 microns : 50 per ml and ≥ 25 microns : 5 per mL
 - b. Particles of size ≥ 20 microns : 50 per ml and ≥ 50 microns : 5 per mL
 - c. Particles of size ≥ 50 microns : 50 per ml and ≥ 100 microns : 5 per mL
 - d. Particles of size ≥ 20 microns : 50 per ml and ≥ 100 microns : 5 per mL
63. ----- are materials used for primary packaging of ophthalmic products
- a. Polypropylene, low density polyethylene, high impact polystyrene
 - b. Polyvinyl chloride, Polyvinylidene chloride, high impact polystyrene

- c. Polyvinyl chloride, Polypropylene, low density polyethylene
 - d. Polyvinyl chloride, high impact polystyrene, polypropylene
64. Some of the common examples of ophthalmic ointment bases are
- a. Lanolin, cetostearyl alcohol, beeswax
 - b. Mineral oil, petrolatum, lanolin
 - c. Beeswax, petrolatum, mineral oil
 - d. Beeswax, cetostearyl alcohol, lanolin
65. The drug of elimination half life upto ----- is an ideal candidate for sustained release dosage forms
- a. 2 – 8 hours
 - b. 6- 10 hours
 - c. Less than 2 hours
 - d. More than 8 hours
66. Hydroxypropyl methyl cellulose, Xanthan gum, Hydroxy ethyl cellulose are some of the examples of polymers used in
- a. Reservoir dissolution controlled systems
 - b. Reservoir diffusion controlled systems
 - c. Matrix dissolution controlled systems
 - d. Matrix diffusion controlled systems
67. The formula for calculation loading dose in sustained release dosage forms is
- a. $C_{ss} V_d / F$
 - b. $C_{ss} K_e T / F$
 - c. $C_{ss} V_d K_e / F$
 - d. $C_{ss} V_d K_e / T F$
68. The mechanism of drug release from reservoir dissolution controlled systems is by
- a. Slow dissolution of coating material
 - b. Swelling of coating material
 - c. Slow dissolution and swelling of coating material
 - d. Swelling and erosion of coating material
69. The steps in sequence involved in microencapsulation by coacervation are
- a. Phase separation, rigidization and deposition
 - b. Deposition, rigidization and phase separation
 - c. Phase separation, deposition and rigidization
 - d. Rigidization, deposition, phase separation

70. The process variables that affects quality of microencapsulated product prepared by Wurster technique are
- Density
 - Particle size
 - Velocity of atomization air
 - Density, particle size, velocity of atomization air, inlet and outlet temperature
71. Spermaceti and Glyceryl stearate are examples of ----- used as coating materials in microencapsulation are
- Water soluble resins
 - Water insoluble resins
 - Waxes
 - Gums
72. Prospective validation is carried out during
- During development stage of pharmaceutical product
 - After launch of pharmaceutical product
 - During development and after launch of pharmaceutical product
 - During routine production batches
73. Pilot plant studies are done before taking full scale validation batches in order to
- To optimize the manufacturing process conditions at plant level
 - To confirm the suitability of equipments used for manufacturing
 - To confirm the consistency of quality of product manufactured at plant level
 - To optimize the manufacturing process conditions, confirm suitability of equipments, consistency of quality of products manufactured at plant level
74. Octagonal blender, roller compactor and double rotary compression machines are the equipments required for tablet manufacture by
- Wet granulation
 - Direct compression
 - Dry granulation
 - Wet and Dry Granulation
75. The equipment used in improving the consistency of cream is
- Propeller mixer
 - planetary mixer
 - triple roller mill
 - Anchor agitator

76. Operational qualification of equipment
- After installation and repair
 - During installation
 - After repair
 - Before installation
77. Absolute bioavailability of drug is measured by comparing AUC of drug
- Given by oral route to that by topical route
 - Given by oral route to that by rectal route
 - Given by oral route to that by subcutaneous route
 - Given by oral route to that by intravenous route
78. Pharmacokinetics study involve
- Therapeutic drug monitoring
 - Optimizing dosing strategies
 - Validating safety evaluation parameters
 - Therapeutic drug monitoring, optimizing dosing strategies, validating safety evaluation parameters
79. The pharmacokinetic parameters for drug administered as IV bolus following one compartment open model are
- Vd, CL and AUC
 - Tmax, CL and AUC
 - Cmax, CL and AUC
 - Cmax, Tmax, CL
80. The equation that best fits the plasma level time curve of azlocillin after an i.v. bolus dose of 2000 mg (assuming one-compartment kinetics) is: $C = 143 e^{-0.87t}$. What will be its apparent volume of distribution?
- 12 liters
 - 8 liters
 - 10 liters
 - 14 liters
81. The equation that best fits the plasma level time curve of azlocillin after an i.v. bolus dose of 2000 mg (assuming one-compartment kinetics) is: $C = 143 e^{-0.87t}$. What will be its Elimination $t_{1/2}$ of the drug?
- 1.2 hours
 - 0.8 hours

- c. 1.4 hours
 - d. 0.6 hours
82. ----- is used as Ophthalmic diagnostic agent.
- a. Fluorescein Sodium
 - b. Methyl Paraben
 - c. Benalkonium Chloride
 - d. Murexide
83. One of the following is used as a pH dependant controlled release excipient.
- a. Carnauba wax
 - b. Hydroxy propyl methyl cellulose phthalate
 - c. Methyl cellulose
 - d. Glyceryl monostearate
84. A new drug delivery system which is composed of phospholipids form a multilamellar concentric bilayer vesicles with aqueous media is
- a. Prodrugs
 - b. Liposomes
 - c. Osmotic Pumps
 - d. Nanoparticles
85. The Sterility test of Liquid involves:
- a. Colorimetric Assay
 - b. Guinea Pigs Assay
 - c. Culturing in the fluid thioglycollate medium
 - d. HPLC assay
86. Freezing point depression is the function of
- a. No. of particles in the solution
 - b. Quantity of solution
 - c. Emulsifying agent
 - d. Colour
87. Bacterial endotoxin test is used to determine:
- a. The amount of Pyrogens
 - b. The level of Pyrogens from Gram negative bacteria
 - c. The level of bacterial endotoxin from Gram negative bacteria
 - d. The level of bacterial endotoxin from Gram positive bacteria.

88. Suspension & oily injection can be administered through:
- intravenous
 - intraarterial
 - intramuscular
 - intraspinal
89. Vitamin C is antioxidant because it is
- Acting as reducing agent
 - Acting as blocking agent
 - Acting as complexing agent
 - Acting as sequestering agent
90. In Rotating Basket Apparatus for dissolution studies, Basket of mesh size used -----
- 22 mesh
 - 30 mesh
 - 35 mesh
 - 40 mesh
91. For preparations intended for parenteral administration USP 24 requires the use of ---- as pharmaceutical aid except.
- Water for injection
 - Sterile water for injection
 - Bacteriostatic water for injection
 - Purified water
92. The DOP test is used for checking the efficiency of
- HEPA filter
 - Membrane Filter
 - Asbestos filter
 - Water filter
93. Non ionic surfactant vesicles related to:
- Liposomes
 - Niosomes
 - Nanoparticles
 - PEGylated Liposome
94. The solution instilled as eye drops into ocular cavity may disappear from the Precorneal area of the eye by which of the following routes:
- Nasolacrimal drainage
 - Tear Turnover

- c. Corneal absorption
 - d. Nasolacrimal drainage, tear turnover, corneal absorption & conjunctival uptake
95. Which layer is the major rate limiting barrier for permeation of hydrophilic drugs across the cornea?
- a. Endothelial barrier
 - b. Stroma
 - c. Epithelial barrier
 - d. Endothelial barrier and Epithelial Barrier
96. One of the organism given below is used as biological indicator in IP for ethylene oxide sterilization. Choose the correct one:
- a. Bacillus stearothermophilus
 - b. Spores of Bacillus subtilis ✓
 - c. Spores of Bacillus cereus
 - d. spores of Bacillus stearothermophilus
97. The rate of drug release from dissolution controlled release system does not depend on the following parameters:
- a. Law of dissolution
 - b. Surface area
 - c. Diffusion Coefficient
 - d. Diffusion layer thickness
98. Which of the following statement is False :
- a. Drugs that are metabolized before absorption can show increased bioavailability from sustained release formulation.
 - b. Compound with very low solubility (< 0.01 mg/ml) are will inherently be sustained in GI tract.
 - c. Compounds that are unstable in small intestine may demonstrate decreased bioavailability when administered from sustained release dosage form.
 - d. Increase concentration at absorption site will increase the rate of absorption & bioavailability when given by oral SR formulation.
99. All the following viscosity builders have been used in ophthalmic solutions except
- a. Veegum
 - b. Methyl Cellulose
 - c. Polyethylene Glycol
 - d. polyvinyl alcohol

100. The characteristic of an active transport process include all the following except:
- Active transport moves drug molecules against concentration gradient
 - Follows Ficks First law of diffusion
 - It required energy
 - Active transport of drug molecules may be saturated at high concentrations
101. The passage of drug molecules from region of higher concentration to lower concentration is known as:
- Facillitated Transport
 - carrier mediated transport
 - Simple diffusion or Passive Transport
 - Pinocytosis
102. The rate of drug dissolution from tablet is given by:
- Henderson Haselbatch equation
 - Ficks First Law
 - Noyes & Whitney equation
 - Higuchi equation
103. Lecithin is a type of surface active agent;
- Anionic
 - Cationic
 - Nonionic
 - Ampholytic
104. Which of the following statement is false:
- Sesame oil is preferred oil for most of the official injections in oil
 - Water miscible solvents used in parenteral formulations include glycerine, ethyl alcohol, propylene glycol
 - Water for injection must be stored at Room Temp if it is to be held for 24 hrs.
 - Inert gases purging improves product integrity of Oxygen sensitive materials

Answers key for Pharmaceutic IV theory Mock test

1-B	26 C	51 A	76 A	101 C
2-A	27 A	52 D	77 D	102 C
3 A	28 A	53 A	78 D	103 D
4 B	29 A	54 D	79 A	104 C
5 A	30 C	55 C	80 D	
6 B	31B	56 B	81 B	
7 B	32 A	57 C	82 A	
8 C	33 B	58 D	83 B	
9 B	34 A	59 A	84 B	
10A	35 A	60 B	85 C	
11 A	36 A	61 B	86 A	
12 B	37 B	62 A	87 C	
13 C	38 C	63 A	88 C	
14 B	39 A	64 B	89 A	
15 B	40 A	65 A	90 D	
16 B	41 C	66 D	91 D	
17 B	42 A	67 A	92 A	
18 C	43 C	68 A	93 B	
19 A	44 B	69 C	94 D	
20 C	45 B	70 D	95 D	
21 B	46 B	71 C	96 B	
22 B	47 B	72 A	97 A	
23 C	48 B	73 D	98 A	
24 C	49 D	74 C	99 A	
25 B	50 B	75 C	100 B	

BPH_E_811_T–NovelDrug Delivery Systems

Practice Question Bank

1. A lipid bilayer structure that encloses an internal aqueous volume.

- A. Niosome
- B. Liposome
- C. Solid lipid nanoparticle
- D. Nanoparticle

2. A spherical solid lipid particle prepared from physiological lipid, dispersed in water or in aqueous surfactant solution.

- A. Solid lipid nanoparticle
- B. Liposome
- C. Niosome
- D. Nanoparticle

3. A non-ionic surfactant based multilamellar or unilamellar vesicular structure

- A. Microspheres
- B. Liposome
- C. Niosome
- D. Nanoparticle

4. This particulate system is also known as “bodies of water”.

- A. Aquasome
- B. Liposome
- C. Niosome
- D. Dendrimer

5. Which of the following is a non- erodible insert?

- A. Ocusert
- B. Collagen shield
- C. NODS
- D. SODI

6. A prominent structure for ocular absorption of drugs

- A. Conjunctiva
- B. Choroid
- C. Sclera
- D. Cornea

7. The polymer used in “Lacriset”

- A. Hydroxy ethyl cellulose
- B. Hydroxy Methyl cellulose
- C. Methyl cellulose
- D. Hydroxy propyl cellulose

8. An ocular device that has the shape of a flag

- A. Ocusert
- B. Lacrisert
- C. NODS
- D. SODI

9. Which of the following does not constitute an appendageal route?

- A. Sweat glands
- B. Hair follicle
- C. Sebaceous gland

D. Stratum corneum

10. "Transderm-Scop" is used in the treatment of

A. Hypertension

B. Angina

C. Motion sickness

D. Antidote for smoking

11. The size of particles in a parenteral suspension should be

A. 10 to 20 μm

B. Less than 10 μm

C. 100 to 200 μm

D. 50 to 100 μm

12. Alzet is an example of _____ type of parenteral system.

A. Osmotic pressure activated

B. Vapour pressure activated

C. Magnetically activated

D. Hydration activated

13. The anterior part of the nasal cavity opening towards the face.

A. Nasopharynx

B. Nasal septum

C. Nasal vestibule

D. Nasal turbinate

14. An advantage of Novel Drug Delivery Systems is

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

15. Osmotic drug delivery systems

- A. have 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

16. Monolithic devices

- A. have drugs with large therapeutic indices
- B. have rapid drug permeation
- C. only hydrophilic polymers are used
- D. release is through a polymer membrane

17. A Polymer used for colonic systems is

- A. carboxymethyl cellulose
- B. cellulose acetate phthalate
- C. gelatin
- D. acacia

18. Drug release from osmotic drug delivery systems depends on

- A. osmotic pressure
- B. ionic strength
- C. osmotic pressure & ionic strength
- D. osmotic pressure & environment in git

19. One method to prepare nanoparticles is

- A. pan coating
- B. filtration
- C. solubilisation
- D. precipitation

20. Excipient to increase density of GRDDS is

- A. zinc oxide
- B. talc
- C. sodium bicarbonate

D. calcium carbonate

21. _____ is a dispersed matrix system

- A. nanospheres
- B. nanoparticles
- C. nanocapsules
- D. nanopolymers

22. Microspheres are prepared by coacervation using

- A. non solvent
- B. trituration
- C. pH
- D. pressure

23. Drug permeation through the buccal mucosa is by

- A. paracellular
- B. transcellular
- C. both paracellular and transcellular
- D. pinocytosis

24. Chitosan is a _____ mucoadhesive polymer

- A. cationic
- B. anionic
- C. synthetic
- D. non-ionic

25. _____ is a drug unsuitable for GRDDS

- A. ciprofloxacin
- B. diazepam
- C. furosemide
- D. aspirin

26. Which of the following is a natural polymer used in nanoparticles.

- A. Polycaprolactone
- B. Polylactic acid

- C. Alginate
- D. Polystyrene

27. A microcapsule has _____

- A. Drug dispersed in matrix
- B. Drug core surrounded by distinct wall
- C. Drug adsorbed on the surface
- D. Drug distributed in polymeric matrix

28. A polymeric implant that is biodegradable

- A. Prepared from silicone
- B. Prepared from Polyurethane
- C. Prepared from Polylactic acid
- D. Prepared from polyacrylate

29. Paracellular route for nasal drug delivery is

- A. Slow and passive lipodial pathway
- B. Slow and passive aqueous pathway
- C. Fast and active aqueous pathway
- D. Fast and active lipodial pathway

30. Sodium taurocholate used as penetration enhancer is

- A. A Surfactant
- B. Fatty acid with surfactant property
- C. Bile salt with surfactant property
- D. Bile salt but no surfactant property

31. pH of nasal formulation in the physiological range

- A. Keeps the drug in ionized state
- B. Alters physiological ciliary movements
- C. Increases mucosal irritation
- D. Keeps the drug in unionized state and sustains physiological ciliary movements

32. Mucocilliary clearance is

- A. A barrier to nasal absorption
- B. Not a barrier to nasal absorption
- C. It is protective in function
- D. It is a barrier to nasal absorption but also protective in function

33. Which of the following characteristics is suitable for transdermal drug?

- A. Large drug dose
- B. Large molecular size
- C. Drugs with narrow therapeutic indices
- D. Drugs which are metabolized in the skin

34. Reservoir systems

- A. do not depend on area
- B. have a rate controlling membrane
- C. follow any order of kinetics
- D. are highly porous

35. Factors affecting lymphatic uptake include

- A. larger aqueous phase
- B. greater hydrophilicity of nanoparticles
- C. low concentration of surfactant
- D. longer chain length of lipid

36. Stealth liposomes

- A. have short half-life
- B. are taken up by macrophages
- C. have very large size
- D. are sterically stabilized

37. An example of a polymer incorporated into dendrimers is

- A. propylene glycol
- B. polyethyleneimine
- C. polyurethane
- D. styrene copolymers

38. Spray congealing method of pelletization includes

- A. globulization
- B. agitation
- C. powdering
- D. compaction

39. Hydrogen bonds in mucoadhesion are formed by

- A. dipole moment
- B. non polar groups
- C. dispersion forces
- D. electronegative atoms

40. Modified balance method is used to evaluate

- A. particle size
- B. adhesive strength
- C. drug release
- D. swelling

41. Eudragit L100 is a type of

- A. cellulose polymer
- B. vinyl co-polymer
- C. methacetic acid co-polymer

D. methacrylic acid co-polymer

42. A Primary Irritation index of <2 for a transdermal patch indicates that patch is

- A. Non-irritant
- B. Slightly irritant
- C. Moderately irritant
- D. Severely irritant

43. Ideal glass transition temperature for a pressure sensitive adhesive used in transdermal system should be

- A. - 20° C to - 40° C
- B. - 2° C to - 4° C
- C. 20° C to 40° C
- D. 2° C to 4° C

44. Benzathine penicillin G injection is an example of one of the following approaches for parenteral controlled drug delivery

- A. Use of water immiscible vehicles
- B. Salt formation approach
- C. Macrocrystal approach
- D. Use of water miscible vehicles

45. Ocusert is an example of

- A. Feedback regulated system
- B. Activation modulated system
- C. Bio -responsive system
- D. Membrane permeation system

46. _____ is an advanced method of determining size of nano particles

- A. Atomic force microscopy
- B. Ultrasound scattering
- C. Compound microscopy
- D. Molecular microscopy

47. Chimeric peptides have

- A. chylomicrons
- B. polymeric micelles
- C. peptidomimetic antibodies
- D. polymeric nanoparticles

48. Use of monoclonal antibodies for drug delivery to tumors is

- A. active targeting
- B. passive targeting
- C. triggered drug targeting
- D. vector targeting

49. _____ is an example of a synthetic biodegradable polymer

- A. acrolein
- B. polyethylene glycol
- C. LDPE
- D. polystyrene

50. _____ is an example of a bioerodible polymer

- A. polyorthoesters
- B. polycarbonate
- C. fluorocarbon
- D. polystyrene

51. Which amongst this is a limitation associated with conventional drug delivery systems?

- a. Lower effectiveness
- b. Ease of manufacturing
- c. Decreased side effects
- d. Spatial and temporal control

52. Which of the following is a pH-sensitive bioerodible polymer?

- a. Polymethacrylate
- b. HPMC
- c. Na CMC

d. Ethyl cellulose

53. Carbopols are:

- e. Synthetic vinyl polymers with ionizable carbonyl group
- f. Polyoxyethylene ethers with carboxy groups
- g. Mineral waxes with hydrocarbon content ranging from C35 to C55
- h. Polyoxyethylene derivatives of polyoxypropylene

54. Which amongst the following are the smallest liposomes?

- i. Large unilamellar vesicles
- j. Oligolamellar vesicles
- k. Multilamellar vesicles
- l. Multivesicular vesicles

55. Which of the following is used as chemical cross-linking agent in preparation of nanoparticles?

- m. Glutaraldehyde
- n. 2,2, di-methyl propane
- o. Lactides and glycolides
- p. Poly (acryl) starch

56. What type of protein binding characteristics of a drug are desirable to be formulated into an ocular system?

- q. Low
- r. Medium
- s. High
- t. It has no bearing

57. A positive temperature-sensitive hydrogel has ----- critical solution temperature

- u. Upper
- v. Lower
- w. Hybrid
- x. Mixed

58. The stratum corneum consists of -----layers of keratinized cells

- y. 10 to 25
- z. 0 to 10
- aa. 25 to 50
- bb. Above 50

59. Peel adhesion is tested by measuring the force required to pull a single coated tape, applied to a substrate at a° angle

- cc. 180
- dd. 360
- ee. 45
- ff. 90

60. Which of the following is the Noyes – Whitney equation?

- a. $\frac{dC}{dt} = -k(c_r - c)$
- b. $\frac{dC}{dt} = \frac{DAk_{o/w}(c_s - c_b)}{Vh}$
- c. $M_0^{1/3} - M^{1/3} = Kt$
- d. $\frac{M_t}{M_0} = k\sqrt{t}$

61. Which among the following can be used as a hydrophobic matrix to formulate SRDDS?

- a. Ethyl cellulose
- b. Hydroxypropyl methylcellulose
- c. Hydroxypropylcellulose
- d. Sodium carboxymethylcellulose

62. Which amongst this is a physicochemical factor of the drug that should be considered while formulating a controlled drug delivery system?

- a. Diffusivity
- b. Half life
- c. Side effects
- d. Absorption

63. Based on their half-lives, which drug would you select to make a sustained release tablet?

- gg. Metformin (6 hr)
- hh. Heroin (2 – 6 min)
- ii. Cocaine (50 mins)
- jj. Amlodipine (20 hrs)

64. Which of the following is an effective barrier for drug?
- Tight junctions
 - Pinocytes
 - Glucose transporters
 - Protein carriers
65. To prevent the loss of drug that has migrated into the adhesive layer during storage, this is used
- Release liner
 - Rate controlling membrane
 - Adhesive layer
 - Backing membrane
66. Webels model is used for evaluation of
- Pulmonary Targeting
 - Nasal Targeting
 - Hepatic Targeting
 - Ocular targeting
67. These noninvasive techniques have been used for drug delivery to brain
- Nanogels
 - Bradykinin administration
 - Onmaya reservoir
 - Microgel
68. OROSCT Approach is used in
- Colon targeting
 - Lymphatic targeting
 - Brain targeting
 - Mucoatadheisve delivery
69. In Pulmonary Drug Delivery the drug absorption is achieved due to
- High lipophilicity and large surface area
 - Low lipophilicity and small surface area
 - High hydrophilicity and large surface area
 - Low hydrophilicity and Small surface area

70. The dissolution study of colon targeted drugs is carried by
- Bio Dis III apparatus
 - Beaker Method
 - Flow through cell
 - USP Type I AND II Apparatus

71. Super critical fluid technology is used to prepare:
- Nanoparticle
 - Neosome
 - Aquasomes
 - Liposomes

72. These are a unique class of synthetic macromolecules having highly branched, three dimensional, nanoscale architecture with very low polydispersity index and high functionality
- Dendrimers
 - Neosomes
 - Auasomes
 - Nanoparticles

73. _____ is carrier for Haemoglobin
- Neosome
 - Nanoparticle
 - Aquasomes
 - Phytosomes

74. Following is the example of invasive brain targeting
- Osmogens
 - Colloidal carriers
 - Amino acid transporters
 - Neosomes

75. The force required to remove an adhesion coating from test substrate is determined by
- Peel adhesion test
 - Shear adhesion test
 - Rolling ball tack test
 - Probe tack test

FINAL YEAR NDDS - SET 2

1. Hydrogen bonding capacity is related to which type of factor affecting mucoadhesion

- A) physiological
- B) polymer
- C) environment
- D) physicochemical

2. What type of process does the liposomes undergoes?

- A) Oxidation
- B) Acetylation
- C) Reduction
- D) Isomerization

3. Find out the odd type of ocular inserts

- A) Lacrisert
- B) Occusert
- C) SODI
- D) Minidisc

4. What is extrusion?

- A) pushing the heated material through an orifice
- B) producing a hole by a punch
- C) making cup shaped parts from the sheet
- D) process of mixing the ingredient

5. Which from the following factor does not affect Osmotic systems

- A) Osmotic pressure gradient
- B) Delivery orifice
- C) Membrane - permeability, Surface area, thickness
- D) Change in pH of environment

6. Which of the following drugs cannot be given as transdermal DDS

- A) Drugs with very short half life
- B) Drugs with narrow therapeutic indices
- C) Easy removal & termination
- D) Drugs against peptic ulcer

7. Which of the following is the example of Physical theory of mucoadhesion

- A) Wetting
- B) Electronic
- C) Adsorption
- D) Adhesion

8. Niosomes are prepared from which of the following

- A) Phospholipids
- B) Lecithin
- C) Spingolipid
- D) Surfactants

9. Select the physical mechanism by which in situ gelling system is formed

- A) Change in pH

- B) Change in glucose level
- C) Change in electric field
- D) Change in ion concentration

10. What are the characteristics of matrix diffusion controlled release system?

- A) Release the drug along the entire length of GIT
- B) Drug disperse in an insoluble matrix of rigid hydrophobic material
- C) Employ waxes to control the rate dissolution
- D) Release only at specific site

11. Which of the following is not the advantage of Transmucosal DDS?

- A) Drugs sensitive to pH change can be administered via this route
- B) Drug having poor bioavailability through oral route can be administered via this route
- C) Various hormone, steroids, enzymes can be administered by this route
- D) Ease of administration

12. Ocular iontophoresis is a process which does not involve

- A) Electrical potential driving charged ions into eyes
- B) Delivers high concentration to specific sight
- C) Good bioavailability
- D) Disadvantage of epithelial on conjunctival edema

13. Which of the following is not a component of dendrimer?

- A) Central core
- B) Stem
- C) Interior dendritic structure

D) Exterior surface

14. Which of the following is incorrect about Transdermal DDS?

- A) A stable and controlled blood level can be attained
- B) All potent drugs can be administered as TDDS
- C) Drugs with narrow therapeutic window can be administered as TDDS
- D) Self- medication is possible

15. Which of the following is not a disadvantage of conventional dosage form?

- A) Poor patient compliance
- B) Change in concentration may lead to under or over medication
- C) Attainment of steady state condition difficult.
- D) have high cost

16. Which polymers occur naturally?

- A) Starch and Nylon
- B) Starch and Cellulose
- C) Proteins and Nylon
- D) Proteins and PVC

17. Which of the following is a thermosetting polymer?

- A) polystyrene
- B) polyolefins
- C) nylons
- D) phenolic resins

18. Which of the following characteristics is suitable for transdermal drug?

- A) Large drug dose
- B) Large molecular size
- C) Drug with narrow therapeutic indices
- D) Drugs which are metabolized in the skin

19. Which among the following polymers have lowest solubility?

- A) polyethylene
- B) polystyrene
- C) nylon 6
- D) epoxy resin

20. Which of the following is not a component of buccal patch?

- A) Polymer
- B) Active substance
- C) Flavouring agent
- D) Counter irritant

21. Example of hydrophobic polymer used in nanoparticles is

- A) Gelatin
- B) Alginate
- C) Acrylate
- D) Lectin

22. Which of the method is not used for preparation of nanoparticle?

- A) Emulsion polymerization
- B) Dispersion polymerization
- C) Interfacial polymerization

D) Emulsion polymerization

23. What are the characteristics of continuous release systems?

- A) Release the drug along the entire length of GIT
- B) Prolonged their residence in the GIT and release
- C) Release only at a specific drug
- D) Release as soon as comes in contact to the saliva

24. What is the characteristic of dissolution controlled release systems?

- A) Release the drug along the entire length of GIT
- B) Prolonged their residence in the GIT and release
- C) Release only at a specific drug
- D) Very slow dissolution rate

25. The absorption of the ophthalmic drug does not depend on which of the following?

- A) Physicochemical properties of the permeating molecule
- B) Drainage of tears
- C) Output of tears
- D) Size of the eyeball

26. Which of the following is not a property of Bio-adhesive microspheres?

- A) Achieved by making use of adhesive properties of water soluble polymers
- B) Adhesion of drug delivery device to the mucosal membrane such as buccal, ocular, rectal, nasal.
- C) Exhibit a prolonged residence time at the site of application and causes intimate contact with the absorption site and produces better therapeutic action.
- D) They contain radioisotope i.e. either α , β or γ emitters.

27. What are the characteristics of the reservoir or membrane devices?

- A) The drug has a large therapeutic index
- B) Drug permeation rate is high
- C) Control drug release by partitioning the drug from the oil
- D) Administration of emulsions

Final Year B.Pharm.(Sem VIII) 2020-21

BPH_E_811_T–Novel Drug Delivery Systems

Practice Question Bank

Answer-key

1. **B. Liposome**
2. **A. Solid lipid nanoparticle**
3. **C. Niosome**
4. **A. Aquasome**
5. **A. Ocusert**
6. **D. Cornea**
7. **D. Hydroxy propyl cellulose**
8. **C. NODS**
9. **D. Stratum corneum**
10. **C. Motion sickness**
11. **B. Less than 10 μm**
12. **A. Osmotic pressure activated**
13. **C. Nasal vestibule**
14. **D. it reduces side effects of the drug**
15. **C. the membrane is permeable to water**

- 16. A. have drugs with large therapeutic indices
- 17. B. cellulose acetate phthalate
- 18. A. osmotic pressure
- 19.D. precipitation
- 20. A. zinc oxide
- 21. A. nanospheres
- 22. A. non solvent
- 23. C. both paracellular and transcellular
- 24. A. cationic
- 25. D. aspirin
- 26. C. Alginate
- 27. B. Dug core surrounded by distinct wall
- 28. C. Prepared from Polylactic acid
- 29. B. Slow and passive aqueous pathway
- 30. C. Bile salt with surfactant property
- 31. D. Keeps the drug in unionized state and sustains physiological ciliary movements
- 32. D. It is a barrier to nasal absorption but also protective in function
- 33. C. Drugs with narrow therapeutic indices
- 34. B. have a rate controlling membrane
- 35. D. longer chain length of lipid
- 36. D. sterically stabilized
- 37. B. polyethyleneimine
- 38. A. globulization
- 39. D. electronegative atoms
- 40. B. adhesive strength
- 41. D. methacrylic acid co-polymer

42. B.Slightly irritant

43. A. - 20° C to - 40° C

44. B. Salt formation approach

45. D. Membrane permeation system

46. A. Atomic force microscopy

47. C. peptidomimetic antibodies

48. A. active targeting

49. B. polyethylene glycol

50. A. polyorthoesters

Q. No.	Correct Option
51	a
52	a
53	a
54	a
55	a
56	a
57	a
58	a
59	a
60	a
61	a
62	a
63	a

64	a
65	a
66	a
67	a
68	a
69	a
70	a
71	a
72	a
73	a
74	a
75	a

FINAL YEAR NDDS SET 2

- 1. C
- 2. A
- 3. B
- 4. A
- 5. D
- 6. D
- 7. A
- 8. D
- 9. C
- 10. B
- 11. A
- 12. C

13. B

14. B

15. D

16. B

17. D

18. C

19. D

20. D

21. C

22. A

23. B

24. D

25. D

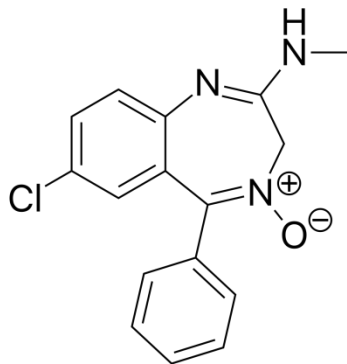
26. D

27. B

FINAL YEAR UNIVERSITY EXAMINATION 2019-2020
Final Year B.Pharm. Semester VIII
SUBJECT-BPH_C_801_T-Pharmaceutical Chemistry III
MULTIPLE CHOICE QUESTIONS: PRACTICE QUESTION BANK

SET-I

Q. 1 Which is the correct IUPAC name for the following structure?



- A] 5-chloro-2-(methylamino)-5-phenyl-3H-1,4-benzodiazepine
- B] 7-chloro-2-(methylamino)-5-pyridinyl-3H-1,4-benzodiazepine-4-oxide
- C] 7-chloro-2-(ethylamino)-5-phenyl-3H-1,5-benzodiazepine
- D] 7-chloro-2-(methylamino)-5-phenyl-3H-1,4-benzodiazepine-4-oxide

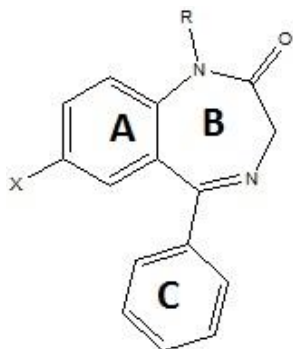
Q. 2 Which of the following is long acting sedative hypnotic?

- A] Diazepam
- B] Alprazolam
- C] Temazepam
- D] Imipramine

Q. 3 Name of oxide derivative used as sedative hypnotic is

- A] Diazepam
- B] Chlordiazepoxide
- C] Nitazepam
- D] Ramelteon

Q. 4 With respect to the following general structure which is the **correct** statement ?

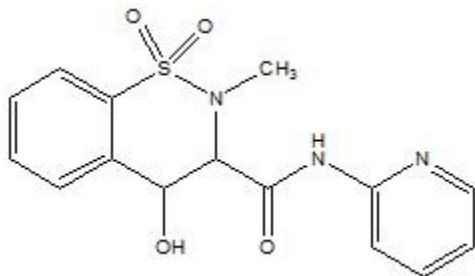


- A] X must be electropositive substituent for optimum activity
- B] X must be aromatic ring for optimum activity
- C] X must be electronegative substituent for optimum activity
- D] X must be H for optimum activity

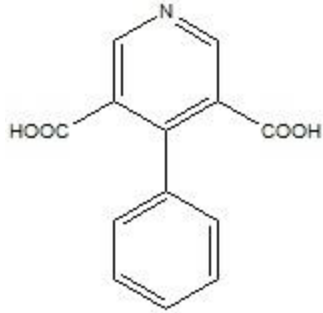
Q. 5 Which is the **incorrect** statement with respect to structure given in Q. 4

- A] Ring C is ortho substituted with electron withdrawing group for optimum activity
- B] Ring C when para substituted increases activity
- C] Ring C is diortho substituted with electron withdrawing group for optimum activity
- D] Ring C when para substituted decreases activity

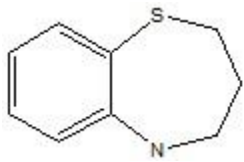
Q. 6 What is the starting material for synthesis of Piroxicam (structure given below)



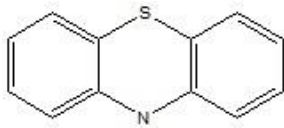
- A]



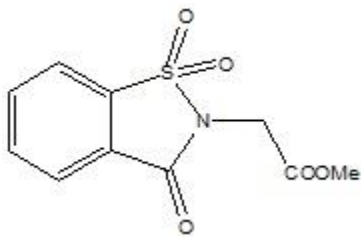
B]



C]



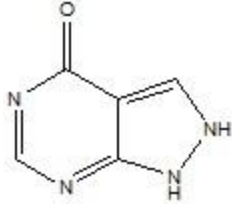
D]



Q. 7 Which one of the following is Cytokine inhibitor?

- A] Abatacept
- B] Fluoxetine
- C] Propranolol
- D] Aldosterone

Q. 8 Write the name and use for the following drug.



- A] Allopurinol, treatment of Gout
- B] Colterol, Adrenergic agent
- C] Atropine, Cholinergic antagonist
- D] Indomethacin, NSAID

Q. 9 Which of the following approach will lead to active metabolite for sulfinpyrazone?

- A] N-dearylation
- B] Sulfide formation
- C] para hydroxylation of phenyl ring
- D] S reduction

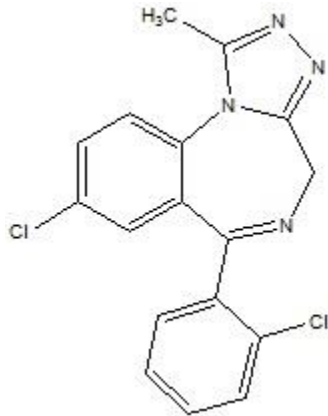
Q. 10 Anakinra is

- A] costimulation modulator
- B] anti-TNF alpha antibody
- C] TNF-alpha blocker
- D] interleukin receptor antagonist

Q. 11 Which of the following is GABA prodrug.

- A] tiagabine
- B] diazepam
- C] progabide
- D] mephobarbital

Q. 12 Alprazolam (structure given below) is short acting sedative hypnotic because of



- A] Presence of 4,5 double bond in diazepine ring
- B] Presence of 1,4-diazepine ring
- C] Presence of chlorine on phenyl ring
- D] Presence of methyl group on triazole ring

Q. 13 Which Acetylcholine esterase inhibitor is used for treatment of Alzheimer disease?

- A] Tacrine
- B] Physostigmine
- C] Neostigmine
- D] Pyridostigmine

Q. 14 Nicotine receptor is a type of which receptor?

- A] GPCR
- B] Ion channel receptor
- C] Kinase receptor
- D] Nuclear receptor

Q. 15 Donepezil contains which heterocycle as scaffold?

- A] Pyridine
- B] Piperidine
- C] Piperazine
- D] Pyrazine

Q. 16 Which of the following drug is an antidote for organophosphorus poisoning?

- A] Rivastigmine
- B] Donepezil
- C] Pralidoxime chloride
- D] Tacrine

Q. 17 Which of the following drug is COX-II inhibitor?

- A] Valdecoxib
- B] Piroxicam
- C] Nabumetone
- D] Mefenemic acid

Q. 18 Which of the following NSAID is a prodrug?

- A] Ibuprofen
- B] Indometahcin
- C] Diclofenac
- D] Sulindac

Q. 19 Drug increasing uric acid excretion is

- A] Colchicine
- B] Probenecid
- C] sulfinpyrazone
- D] allopurinol

Q. 20 What is side effect of carbamazepine?

- A] EPS
- B] loss of memory
- C] aplastic anemia

D] addiction

Q. 21 Which of the following pair of drugs is used to treat Parkinson's disease?

A] Carbidopa-Levodopa

B] Selegillin Amantidine

C] Carbidopa-Amantidine

D] Sulfinpyrazone-Probenecid

Q. 22 Chemical class of Ibuprofen is,

A] Aryl acetic acid

B] Aryl propanoic acid

C] Indole acetic acid

D] Anthranilic acid

Q. 23 Which one of the following is example of mineralo-corticosteroid

A] betamethasone

B] prednisone

C] Aldosterone

D] triamcinolone

Q. 24 Diethyl stilbestrol is active in which of the following form?

A] cis form

B] trans form

C] meso compound

D] R form

Q. 25 Which of the following is not an example of progestin?

A] Tamoxifen

B] Megestrol

C] Norethindrone

D] Medroxyprogesterone

Q. 26 Identify the drug with the following chemical name :

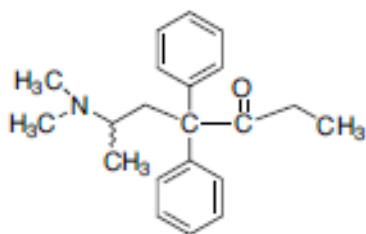
17 α -pregna-2,4-dien-20-yno-[2,3-*d*]isoxazol-17-ol

- a. Stanazolol
- b. Nandrolone
- c. Danazole
- d. Oxandrolone

Q. 27 Diazepam is metabolized to Nordazepam by _____ and _____.

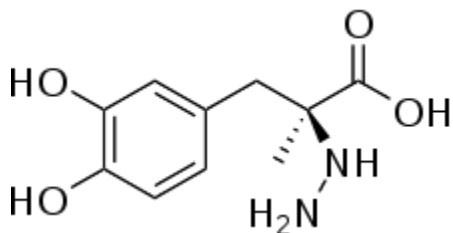
- a. CYP2C19 & CYP3A4
- b. CYP2C18 & CYP3A3
- c. CYP2C17 & CYP3A2
- d. CYP2C20 & CYP3A5

Q. 28 Identify the incorrect statement with reference to the following:



- a. Approved for analgesic therapy and for the maintenance and treatment of opioid addiction.
- b. opioid activity resides in the S-enantiomer
- c. μ -receptor agonist
- d. synthetic opioid

Q. 29 Which is the correct IUPAC name for the following structure?



- a. (S)-2-Amino-3-(3,4-dihydroxyphenyl)propanoic acid

- b. (*R*)-*N*-methyl-*N*-(1-phenylpropan-2-yl)prop-1-yn-3-amine
- c. (*2S*)-3-(3,4-dihydroxyphenyl)-2-hydrazino-2-methylpropanoic acid
- d. (*2R*)-3-(3,4-dihydroxyphenyl)-3-Pyridino-2-ethylbutanoic acid

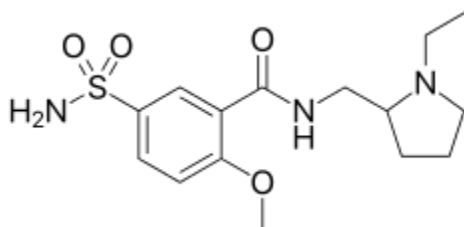
Q. 30 The effect of larger substitution on side chain N in case of phenylethanolamine is

- a. Increase in β 2 receptor selectivity
- b. Increase in α receptor activity
- c. Increase in nonselectivity towards α , β receptors
- d. Loss of direct sympathomimetic activity

Q. 31 α -CH₃ substituent present in the profens,

- a. decreases cyclooxygenase inhibitory activity and induces toxicity of the profens.
- b. decreases cyclooxygenase inhibitory activity and decreases toxicity of the profens.
- c. increases cyclooxygenase inhibitory activity and increases toxicity of the profens.
- d. increases cyclooxygenase inhibitory activity and reduces toxicity of the profens.

Q. 32 Which is the correct IUPAC name for the following structure?



- a. 8-chloro-11-(4-methylpiperazin-1-yl)-5*H*-dibenzo[*b,e*][1,4]diazepine
- b. *N*-[(1-ethylpyrrolidin-2-yl)methyl]-2-methoxy-5-sulfamoylbenzamide
- c. 8-chloro-6-(4-methylpiperazin-1-yl)benzo[*b*][1,4]benzoxazepine
- d. 4-[4-(4-chlorophenyl)-4-hydroxypiperidin-1-yl]-1-(4-fluorophenyl)butan-1-one

Q. 33 If additional unsaturation is introduced in the Ring A in Glucocorticoids, it results in

- a. Increase in Glucocorticoid activity
- b. Changes the conformation of A ring
- c. Enhance anti-inflammatory effect
- d. Decreases Salt retaining activity

Q. 34 What kind of change in the structure of direct acting sympathomimetic are responsible for making them indirectly acting compounds?

- a) Removal of 3'-OH
- b) Removal of 4'-OH

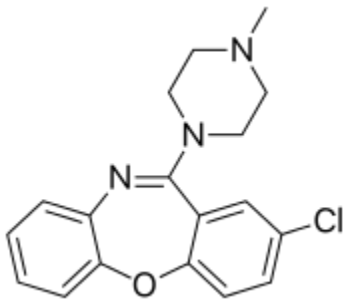
c) Removal of 3',4'- OH

d) Retention of 3'-OH and replacing 4'-OH with -CH₂OH

Q. 35 Because diazepam clearance is decreased in the elderly and in patients with hepatic insufficiency, a dosage _____ may be warranted.

- a. Enhancement
- b. Reduction
- c. No effect
- d. Remain Constant

Q. 36 The given drug has affinity for which receptors?



- a) D₂ and 5HT₂ receptors
- b) D₂ and Muscarinic receptors
- c) D₁ and 5HT₂ receptors
- d) D₁ and Muscarinic receptors

Q. 37 The short elimination half-life of Zolpidem is because its aryl methyl groups is extensively _____

- a) α hydroxylated
- b) β hydroxylated
- c) δ hydroxylated
- d) θ hydroxylated

Q. 38 What interactions are involved in binding the phenol group to the target binding site in Morphine?

- a. Ionic interactions
- b. Hydrogen bonding interactions
- c. van der Waals binding interactions
- d. The group does not bind

Q. 39 Major pathway of metabolism of NSAID's by

- a. Conjugation
- b. Hydrolysis

- c. Oxidation
- d. Reduction

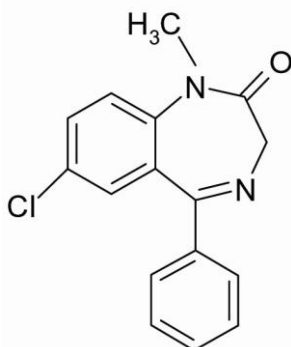
Q. 40 3-(dimethylamino)phenol and dimethylcarbamic chloride are the starting materials for the synthesis of

- a. Neostigmine
- b. Physostigmine
- c. Pyridostigmine
- d. Rivastigmine

Q. 41 Which of the following are semi-synthetic opiates?

- a. Codeine
- b. Oxycodone
- c. Fentanyl
- d. Endomorphins

Q. 42 Identify the IUPAC nomenclature of following



- a. 7-chloro-1-methyl-5-phenyl-3H-1,4-benzodiazepin-2-one
- b. 7-chloro-2-methylamino-5-phenyl-1,4-benzodiazepine-4-oxide
- c. 7-nitro-5-phenyl-1H-benzo [e] [1,4]diazepin-2(3H)-one
- d. 7-Chloro-1,3-dihydro-1-methyl-5-phenyl-1,4-benzodiazepin-2-one

Q. 43 Which one of the following is a Selective serotonin inhibitor?

- a. Imipramine
- b. Doxepine
- c. Amoxapine
- d. Escitaprolam

Q. 44 Which one of the following is a Azapirones anxiolytic agent.

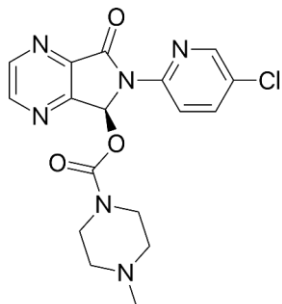
- a. Oxazepam

- b. Buspirone
- c. Clonazepam
- d. Eszopiclone

Q. 45 Which of the following is aminoalcohol type of an anticholinergic?

- a) Procyclidine
- b) Benztropine
- c) Isopropamide
- d) Tropicamide

Q. 46 Which is the correct IUPAC name for the following structure?



- a. [(7S)-6-(5-chloropyridin-2-yl)-5-oxo-7H-pyrrolo[3,4-b]pyrazin-7-yl]4-methyl piperazine-1-carboxylate.
- b. [(7S)-6-(5-chloropyridin-2-yl)-5-oxo-7H-pyrrolo[3,4-b]piperazin-7-yl]4-methyl pyrazine-1-carboxylate.
- c. [(7S)-6-(5-chloropyridin-2-yl)-5-oxo-7H-pyrrolo[3,4-b]piperidin-7-yl]4-methyl pyrimidin-1-carboxylate.
- d. [(7S)-6-(5-chloropyridin-2-yl)-5-oxo-7H-pyrrolo[3,4-b]furan-7-yl]4-methyl piperazine-1-carboxylate.

Q. 47 Primary use of fluoxetine is

- a. Antidepressant
- b. Anxiolytics
- c. Antipsychotics
- d. Sedative Hypnotic

Q. 48 Which of the following is γ -vinyl GABA

- a. Phenytoin
- b. Vigabatrine
- c. Valproic acid
- d. Gabapentine

Q. 49 Naproxen is a derivative of _____

- a. Arylpropionic acid

- b. Arylethanoic acid
- c. Arylpropionic ester
- d. Arylpropionic ether

Q. 50 Which feature of acetylcholine interacts with the binding site of cholinergic receptors by hydrogen bonding?

- a. The acyl methyl group
- b. The ester
- c. The quaternary nitrogen
- d. All three N-methyl groups

SET-II

1) Identify selective α_1 antagonist containing quinazoline nucleus from the following agents.

a) Tolazoline b) Phentolamine c) Phenoxybenzamine d) Prazosin

2) Mechanism of action of ramelteon is

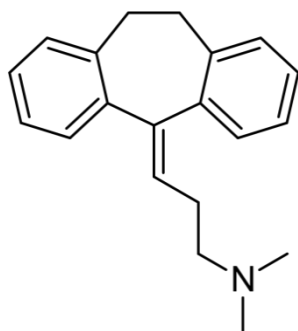
a) NMDA receptor antagonist b) Melatonin receptor antagonist

c) GABA receptor antagonist d) Serotonin receptor antagonist

3) Which of the following Acetylcholine esterase inhibitor does not contain quaternary ammonium group?

a) Physostigmine b) Neostigmine c) Pyridostigmine d) Edrophonium

4) Amitriptyline (structure given below) undergoes metabolism to give active metabolite by



a) O-demethylation b) N-demethylation c) Oxidative deamination d) Oxidative hydroxylation

5) Which of the following is not a structural feature of opioid antagonist?

a) Presence of allyl/cyclopropylmethyl group at 17th position

b) Replacement of 6 -OH with Keto group

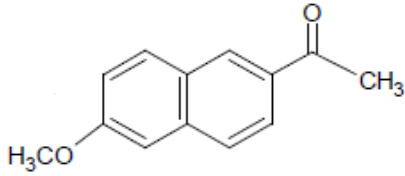
c) Presence of 7-8 double bond

d) Substitution of 14 β -OH

6) The enzyme which degrades dopamine is

a) COMT b) DOPA decarboxylase c) Aldehyde reductase d) Cyclooxygenase

7) Identify the Non-Steroidal Anti-inflammatory drug that can be synthesized using following reagent.



- a) Diclofenac b) Naproxen c) Piroxicam d) Nimesulide
- 8) Which one of the following statement of trimethadione is inappropriate?
- a) Trimethadione is a prodrug
 b) Trimethadione is used in absence seizures
 c) Trimethadione belongs to imminostilbene class
 d) Trimethadione is antagonist of T type of calcium channels
- 9) -----is purely anabolic steroid with no androgenic activity.
- a) Testosterone b) Stanozolol c) 17 α -Methyltestosterone d) Oxymesterone
- 10) An antipsychotic drug fluphenazine is given as an ester of decanoic acid
- a) To increase potency b) To increase duration of action
 c) To increase chemical stability d) To increase binding modes with the receptor
- 11) Name a NSAID associated with minimal gastric side effects
- a) Diclofenac b) Flurbiprofen c) Aspirin d) Nabumetone
- 12) Which of the following is not tricyclic antidepressant?
- a) Fluoxetine b) Imipramine c) Chlorimipramine d) Amitriptyline
- 13) Which one of the following drug inhibit xanthine oxidase
- a) Febuxostat b) Probenecid c) Colchicine d) Sulfinpyrazone
- 14) ----- co-administered with levodopa.
- a) Selegline b) Amantadine c) Carbidopa d) Bzotropine
- 15) Which one of the substituent can be present on nitrogen in narcotic antagonist?
- a) Methyl b) Cyclopropyl methyl c) Phenyl ethyl d) Ethyl
- 16) Select an anticonvulsant from the following which acts by Ca²⁺ blockade.

a) Phenytoin b) Carbamazepine c) Valproic Acid d) Trimethadione

17) Identify metabolite of diazepam from the following.

a) Chlordiazepoxide b) Oxazepam c) Nitrazepam d) Clonazepam

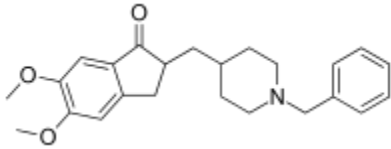
18) Which drug is COMT resistant?

a) Isoproterenol b) Salbutamol c) Colterol d) Epinephrine

19) What is relation between xylometazoline and oxymetazoline?

- a) Both are α_2 adrenergic agonists. b) Both are 2-aminoimidazolines
c) Oxymetazoline is metabolite of xylometazoline d) Both are adrenergic antagonists

20) Mention therapeutic use of



a) Mysteria Gravis b) Insecticide c) Glaucoma d) Alzheimer disease

21) Which of the following statement is not true with respect to Imipramine?

- a) It is MAO inhibitor
b) It gets metabolized by N-dealkylation
c) It is norepinephrine and serotonin reuptake inhibitor
d) Dibenzazepine is basic scaffold present

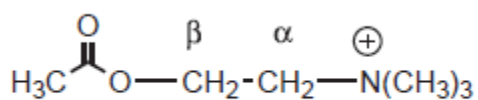
22) Succinylcholine needs to be administered with ----- to prevent enzymatic degradation

a) Tubocurarine b) Gallamine c) Decamethonium d) Neostigmine

23) Why 17α substituent in androstane is important?

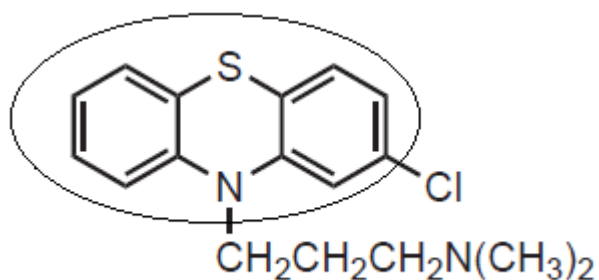
- a) Increase potency b) Increase anabolic activity
c) Provide oral bioavailability d) Increase progestational activity

24) Mechanism of action of



- a) Increases muscarinic activity b) Increases nicotinic activity
 c) Increases antagonistic activity d) No change in activity

29) Identify the encircled nucleus in the following.



- a) Dibenzazepine b) Benzodiazepine c) Phenothiazine d) Benzoxazine

30) Which drug is a structural hybrid of meperidine and methadone?

- a) Loperamide b) Diphenoxylate c) Fentanyl d) Pheneridine

31) In the case of thioxanthene type of an antipsychotics more active isomers have ----- configuration.

- a) Cis b) Trans c) E d) R

32) Which one of the following drug shows minimal EPS

- a) Pimozide b) Clozapine c) Droperidol d) Chlorpromazine

33) Codeine is-----.

- a) Methylated analog of morphine b) Acetylated analog of morphine
 c) Antagonist of morphine d) Metabolite of morphine

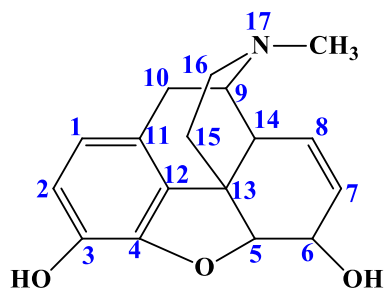
34) The β blocker which contain aryethanolamine scaffold

- a) Esmolol b) Metoprolol c) Sotalol d) Timolol

35) To which chemical class does the anticholinergic drug dicyclomine belong?

a) Aminoalcohol b) Aminoamides c) Amino alcohol esters d) Amino alcohol ethers

36) The given molecule has how many chiral centers?

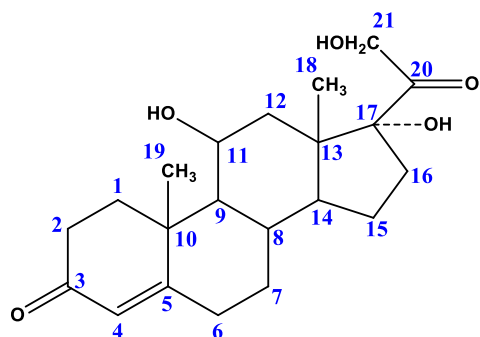


a) 3 b) 4 c) 5 d) 6

37) Which substituent in celecoxib is responsible precluding binding with COX I enzyme?

a) Sulfamoyl b) Phenyl c) Methyl d) Trifluoromethyl

38) Read the statements given below related to SAR of glucocorticoids and choose the correct option given below.



A: Introduction of 9 α -Fluorodecreases salt retention property

B: Methyl group at 16th position can be either α or β for better glucocorticoidal activity

a) A correct

b) B correct

c) A and B both correct

d) A and B both wrong

39) Which structural feature of morphine is missing in levorphanol?

a) Phenyl ring b) Epoxide bridge c) Piperidine ring d) O3- OH group

40) In case of Phenothiazine –Cl group at 2nd position and 3 C chain separating N10 and amino nitrogen is essential because -----.

- a) It is important for lipophilicity
- b) It gives dopamine like arrangement
- c) To maintain potency
- d) It increases CNS penetration.

41) Center of acidity in case of Piroxicam can be represented by---

- a) -SO₂NCH₃ group
- b) Enolic acid
- c) Pyridine ring
- d) –OH group

42) Identify the incorrect pair from the following.

- a) Fluoxetine: Phenoxyphenylpropylamine
- b) Vigabatrine: γ -Vinyl GABA
- c) Bethanechol: Carbamate ester
- d) Ritodrine: Catechol hydroxyl

43) Which one of the following group can be tolerated in 7th position of benzodiazepine ring

- a) -NH₂
- b) -OH
- c) -NO₂
- d) -CH₃

44) Find the wrong pair

- a) Prazosin : α_1 blocker
- b) Guanabenz: α_2 agonist
- c) Phenylephrine: α_1 agonist
- d) Phenylephrine: α_2 antagonist

45) Identify the correct statement related to benzomorphan.

- a) They are obtained by removal of epoxide bridge of morphine.
- b) They do not contain B, C, E ring of morphine
- c) Cis and Trans isomer have unequal analgesic activity
- d) They are obtained by removal of C ring of morphine

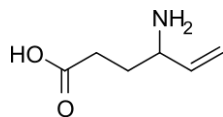
46) Find the odd one out

- a) Gallamine
- b) Succinylcholine
- c) Decamethonium
- d) Procyclidine

47) Which of the following benzodiazepine is suitable for treatment in children & old age patients?

- a) Diazepam
- b) Oxazepam
- c) Temazepam
- d) Nitrazepam

48) What is the mechanism of action of



- a) Inhibit reuptake of GABA b) Inhibit GABA transaminase
c) Inhibit glutamate decarboxylase d) Blocks GABA receptor

49) Modification of nonrigid opioid like ---- leads to butyrophenone whereas butyrophenones are modified to-----type of antipsychotic.

Complete the statement by selecting the correct pair from the following.

- a) Meperidine, Diphenylbutylpiperidine b) Methadone, Diphenylbutylpiperidine
c) Meperidine, Benzamide d) Methadone: Benzamide

50) Which conformer of acetylcholine binds with the receptor?

- a) Synperiplanar b) Antiperiplanar c) Synclinal d) Anticlinal

FINAL YEAR UNIVERSITY EXAMINATION 2019-2020
Final Year B.Pharm. Semester VIII
SUBJECT-BPH_C_801_T-Pharmaceutical Chemistry III
MULTIPLE CHOICE QUESTIONS: PRACTICE QUESTION BANK

SET I

Q. No.	Correct Option
1	D
2	A
3	B
4	C
5	B
6	D

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

31	D
32	B
33	B
34	C
35	B
36	A
37	A
38	B
39	A
40	A
41	B
42	A
43	D
44	B
45	A
46	A
47	A
48	B
49	A
50	B

SET II

Question No	Correct Answer
1	Prazosin
2	Melatonin receptor antagonist
3	Phyostigmine
4	N-demethylation
5	Presence of 7-8 double bond
6	COMT
7	Naproxen
8	Trimethadione belongs to imminostilbene class
9	Stanozolol
10	To increase duration of action
11	Nabumetone
12	Fluoxetine
13	Febuxostat
14	Carbidopa
15	Cyclopropyl methyl
16	Trimethadione
17	Oxazepam
18	Salbutamol
19	Oxymetazoline is metabolite of xylometazoline
20	Alzheimer disease
21	It is MAO inhibitor

22	Neostigmine
23	Provide oral bioavailability
24	Selective β_2 agonist
25	8-[4-(4-pyrimidin-2-yl piperazin-1-yl)butyl]-8-azaspiro [4.5] decane-7,9-dione
26	Lamotrigine
27	Increases β_2 receptor selectivity and bioavailability
28	Increases nicotinic activity
29	Phenothiazine
30	Diphenoxylate
31	Cis
32	Clozapine
33	Methylated analog of morphine
34	Sotalol
35	Amino alcohol esters
36	5
37	sulfamoyl
38	B correct
39	Epoxide bridge
40	It gives dopamine like arrangement
41	Enolic acid
42	Ritodrine: Catechol hydroxyl
43	-NO ₂
44	Phenylephrine: α_2 antagonist

45	Cis and Trans isomer have unequal analgesic activity
46	procyclidine
47	Oxazepam
48	Inhibit GABA transaminase
49	Meperidine, Diphneylbutylpiperidine
50	Anticlinal

FINAL YEAR B. PHARMACY SEM VIII

BPH_E_807_T – Clinical Pharmacy

Questions SET 1

1. Type I ADR reactions is _____
 - a) Caused when T-cells bind to a specific antigen
 - b) Caused by tissue injury
 - c) IgE mediated
 - d) Caused by cytotoxic antibodies
2. Average time period for phase II clinical trials study is _____
 - a) Upto 4 year
 - b) Upto few month
 - c) Upto Two year
 - d) Upto several year
3. Bioavailability seen after drug administered by direct intravenous route is _____
 - a) 0%
 - b) Depends on half life of drug
 - c) 100%
 - d) Is unpredictable
4. _____ drug can cause lactic acidosis.
 - a) Metformin
 - b) Pioglitazone
 - c) Repaglinide
 - d) Glibenclamide
5. The incidence ADR is highest in _____.
 - a) Children
 - b) Elderly
 - c) Women
 - d) Men
6. _____ preparations are avoided during pregnancy.
 - a) Vitamin E
 - b) Vitamin A
 - c) Folic acid
 - d) Zinc
7. Ototoxicity is a unique side effect of _____ group of diuretics.
 - a) Loop
 - b) Thiazide
 - c) Potassium sparing
 - d) Osmotic

8. _____ antihypertensivetherapy should be avoided in type-1 diabetes mellitus
- ACE inhibitors
 - High dose diuretics
 - Centrally acting
 - calcium channel blockers
9. _____ is an example of Category X drugs
- Diclofenac
 - Ranitidine
 - Lorazepam
 - Paracetamol
10. _____ has positive evidence of human fetal risk, but the benefits from use in pregnant women may be acceptable despite of risk.
- Category A
 - Category B
 - Category C
 - Category D
11. _____ is indicated in agitation and restlessness in the elderly, despite the high incidence of extrapyramidal side-effects.
- Prochlorperazine
 - Clozapine
 - Haloperidol
 - Flupentixol
12. _____ is contraindicated during pregnancy due to its Teratogenicity.
- Folic acid
 - Calcium
 - Retinol
 - Iron
13. _____ commonly reported ADR of diureticclass of drugs.
- Hypokalemia
 - Alopecia
 - Skin disorder
 - Rhinitis
14. Young's Rule is applicable for calculating dose of children's _____
- Upto 1 year
 - Upto 1 to 2 year
 - Upto 1 to 5 year
 - Upto 1 to 12 years
15. Pharmacodynamic drug interactions includes _____
- Changes in gastro-intestinal Ph
 - Induction or inhibition of drug transport proteins

- c) Additive or synergistic interactions
- d) Adsorption, chelation and other complexing mechanisms

16. Which of the following responsibility of the clinical pharmacist is in direct patient care area?

- a) Supervision of drug administration techniques.
- b) Providing drug information to physicians and nurses.
- c) Identify drugs brought into the hospital by patients.
- d) Reviewing of each patient's drug administration forms periodically to ensure all doses have been administered.

17. _____ is the organization to manage the procurement, storage, preservation, packaging, sterilization, compounding, preparation, dispensing or distribution of medicine.

- a) Clinical Pharmacy.
- b) Hospital Pharmacy.
- c) Community Pharmacy.
- d) Ambulatory Pharmacy.

18. Which of the following responsibility of community pharmacist is in dispensing area?

- a) Reviews all doses missed, reschedule the doses as necessary & signs all drugs not given notices.
- b) Supervision of drug administration.
- c) Ensures that establishes policies & procedures are followed.
- d) Reviewing of each patient's drug administration forms periodically to ensure all doses have been administered.

19. Which of the following is verbal communication skill for effective patient counselling?

- a) Language.
- b) Proximity.
- c) Facial expression.
- d) Eye contact.

20. The most specific & sensitive method for assessment of compliance can be used to detect potent therapeutic agent in body fluids is

- a) Drug analysis.
- b) Interrogation.
- c) Urine marker.
- d) Residual Tablet counting.

21. Which of the following reaction is called Augmented adverse drug reactions?

- a) Genetically determined effects.
 - b) Idiosyncrasy.
 - c) Rebound effect on discontinuation
 - d) Allergic reactions & anaphylaxis.
22. Which one of these is a genetically determined adverse drug reactions?
- a) Addication.
 - b) Teratogenicity.
 - c) Carcinogenicity.
 - d) Idiosyncrasy.
23. _____ is an example of Pharmacokinetic drug interaction.
- a) Gastric motility changes.
 - b) Alteration of electrolyte levels.
 - c) Drugs having antagonist's effects.
 - d) Interactions at receptor site.
24. _____ causes pharmacodynamic drug interaction.
- a) Gastric motility changes.
 - b) Stimulation of metabolism.
 - c) Alteration of pH of GIT.
 - d) Interactions at receptor site.
25. The age related physiological change in geriatric patient which may affect drug distribution is
- a) Increased body mass.
 - b) Increased total body water.
 - c) Increased total body fat.
 - d) Increased serum albumin level.
26. Organogenesis occurs during _____ stage.
- a) Pre-embryonic.
 - b) Embryonic.
 - c) Pre-Fetal.
 - d) Fetal.
27. _____ absorption in infants and children is noticeably faster than in neonatal period.
- a) Oral.
 - b) Topical
 - c) Intravenous.
 - d) Intramuscular.

28. Which of the following drug does not require therapeutic drug monitoring?

- a) Digitoxin.
- b) Gentamycin.
- c) Phenytoin.
- d) Paracetamol

29. The studies are to determine a pharmacological profile, safe dose and assess potential toxicity of the product on laboratory animal is known as

- a) Observation study.
- b) Clinical study.
- c) Preclinical study.
- d) Statistical study.

30. Autonomy in clinical studied is defined as

- a) Freedom, dignity and confidentiality of the subject; right to choose
 - i. whether or not to participate in the trial or to continue with it.
- b) Motive to do good to the subject and/or the society at large.
- c) Not to do harm or put the participant at undue risk/disadvantage.
- d) Observance of fairness, honesty and impartiality in obtaining, analyzing

& communicating the data.

31. _____ is an example of latent adverse drug reactions.

- a) Antibiotic-associated diarrhea
- b) Tardive dyskinesia
- c) Serum sickness
- d) Severe bronchoconstriction

32. Drug increased risk of Reye's syndrome in children

- a) Valproate
- b) Mebendazole
- c) Salicylate
- d) sulfonamide

33. Mechanism by which **adrenaline** can prolong the duration of local anesthesia

- a) Decreased permeability of the vascular endothelium
- b) Precipitation of lidocaine
- c) Changing the pH of the solution
- d) Local Vasoconstriction

34. _____ antidiabetic drug is preferred for elderly patient

- a) Gliclazide
- b) Glibenclamide

- c) Metformin
- d) Pioglitazone

35. Side effects of Valproic acid is _____

- a) Rhinitis
- b) Thrombocytopenia
- c) Hypothyroidism
- d) Confusion

36. _____ side effect is seen during the treatment with Levodopa

- a) Dyskinesias
- b) Bone marrow depression
- c) Thombocytopenia
- d) Impotence

37. _____ is a major role of clinical pharmacist.

- a) Premarketing surveillance
- b) Postmarketing surveillance
- c) Preclinical study
- d) Patient Counseling

38. _____ is not required in TDM

- a) Dosing regimen
- b) Preclinical research data
- c) Time of the sample
- d) Indication for therapy

39. _____ drug is usually avoided with breastfeeding.

- a) Ibuprofen
- b) propranalol
- c) Methotrexate
- d) Naproxen

40. The sponsor in clinical study is

- a) Country.
- b) Organisation.
- c) Society.

d) Cohort.

41. The written details for conduct trails to ensure quality control of trail is known as

- a) GCP.
- b) SOP.
- c) IEC.
- d) ADR.

42. What is bioequivalence?

- a) Comparison between 3-year-old drugs to the same new drug.
- b) Comparison between drugs to another drug.
- c) Comparison between a drug's specific characteristics to a defined set of Standards.
- d) Comparison between two or 3 characteristics of a drug to the same characteristics of a different drug.

43. Science of collecting, monitoring, researching, assessing and evaluating information from healthcare providers and patients on the adverse effects of medications is known as

- a) Pharmacovigilance.
- b) Clinical Trails.
- c) Observational study.
- d) Qualitative study.

44. Which of the following statements is true concerning epidemic diseases?

- a) They are usually not very contagious.
- b) At the end of an epidemic, a disease spreads at an increasing rate and then
 - i. abruptly disappears.
- c) They usually appear and disappear seasonally.
- d) It can be spread globally.

45. An epidemic that becomes unusually widespread and even global in its reach is referred to as

- a) Pandemic.
- b) Hyperendemic.
- c) Spanish flu.
- d) Endodermic.

46. OECD stands for

- a) Outcome economy committee development.
- b) Organization for Economic Co-operation and Development.
- c) Out entry contact dossier.
- d) Organization for Evasive Co-operation and Development.

47. Which of the following statements represents the best definition of pharmacoeconomics?

- a) Description and analysis of the costs of drug therapy to health care systems and to society.
- b) Process of identifying, measuring and comparing the costs, risks, and benefits of programs, services, or therapies and determining which alternative produces the best health outcomes for the resources invested.

- c) Putting principles, methods, and theories into practice to quantify the value of pharmacy products and services used in the real world.
- d) Studies that attempt to identify, measure, and evaluate the results of health care services in general.

48. Total cost associated with a programme where both costs and consequences are measured in monetary terms is called as

- a) Cost-effectiveness analysis.
- b) Cost-benefit analysis.
- c) Cost-utility analysis.
- d) Discounting.

49. Which is appropriate description of Average Costs?

- a) The value of opportunities which have been lost by utilizing resources in particular service or health technology.
- b) The total costs (i.e. all the costs incurred in the delivery of a service) of a health care system divided by the units of production.
- c) Independent of the number of units of production and include heating, lighting and fixed staffing costs.
- d) The cost of the consumption of medicines is a good example of variable costs.

50. _____ drug is avoided in children's under 4 years with diarrhea.

- a) bisacodyl
- b) loperamide
- c) Bismuth subsalicylate
- d) Ciprofloxacin

51. All are Selected Cytochrome P3A4 Inducer EXCEPT _____

- a) Efavirenz
- b) Erythromycin
- c) Dexamethasone
- d) Nevirapine

52. _____ is the common and dose related side effect of salbutamol.

- a) Decrease in blood pressure
- b) Muscle tremor
- c) Central nervous system stimulation
- d) Hyperglycaemia

53. According to Rawlins-Thompson classification Type D ADR includes _____

- a) Carcinogenesis
- b) Bradycardia associated with beta blockers

- c) Anaphylaxis associated with penicillin
- d) Opiate withdrawal syndrome

BPH_E_807_T – Clinical Pharmacy

SET 2

1. Which of the following promotes the excretion of basic drugs?
 - A) Tartrates
 - B) Citrates
 - C) Bicarbonates
 - D) Ammonium chloride

2. The comparison of bioavailability between two dosage forms is referred to as _____
 - A. Bioavailability
 - B. Biopharmaceutics
 - C. Biological
 - D. Bioequivalence

3. The highest serum drug concentration following a single dose or at a steady state within a dosing interval is called
 - A. Lead
 - B. Peak
 - C. Poison
 - D. Mechanisms

4. Why should care be taken when prescribing warfarin and amiodarone in combination?
 - A. Amiodarone and warfarin both have an anticoagulant effect.
 - B. Amiodarone may reverse the anticoagulant effect of warfarin.
 - C. Amiodarone may increase the anticoagulant effect of warfarin.
 - D. Warfarin may reverse the antiarrhythmic effect of amiodarone.

5. Which of the following drugs causes Phocomelia?
 - A) Thalidomide
 - B) Paracetamol
 - C) Amoxicillin

D) Heparin

6. The substantial degradation of an orally administered drug caused by enzyme metabolism in the liver before the drug reaches the systemic circulation.

- A. First-pass metabolism
- B. Disposition
- C. Antagonist
- D. Hydrophilic

7. According to ICH GCP the investigator "should be qualified by.....

- A. Training and experience
- B. Education, training and experience
- C. Education and experience
- D. Education and training

8. An epidemic that becomes unusually widespread and even global in its reach is referred to as a

_____.

- A. pandemic
- B. hyper endemic
- C. Spanish flu
- D. Zoonotic

9. Pharmaceutical equivalent that produce the same effects in patients

- A. Therapeutic equivalent
- B. Therapeutic window
- C. Minimum effective concentration (MEC)
- D. Minimum toxic concentration (MTC)

10. How are prescription medicines different from OTC ones?

- A. They contain much smaller amounts of active ingredients
- B. They don't contain dyes or preservatives
- C. They're unsafe for use without medical supervision
- D. They can be toxic

11. Which of the following would be the most suitable course of action for a patient who refuses to take their prescribed medicine?

A) Explain to the patient that the medicine should be taken as prescribed in order to get the benefit of treatment and that the risk of harm from licensed medicines is very low.

B) Explore the reasons why they don't wish to take their medicine and explain the benefits and risks of taking the medicine and the implications of not taking the medicine to the patient.

C) Explore the reasons why they don't wish to take their medicine and try to convince them that the benefits of treatment outweigh the risks.

D) Explain the benefits of taking the medicine and the implications of not taking the medicine to the patient.

12. The _____ is the heart of the patient counselling session

A) Preparing for the session.

B) Opening the session.

C) Counselling content.

D) Closing the session.

13. Which of the following drug is implicated in the causation of osteomalacia of the bone?

A. Steroid

B. Estrogen

C. Heparin

D. Phenytoin

14. Which of the following drug can result in result in cyanide poisoning?

A. Amyl nitrite

B. Hydroxycobalamine

C. Sodium nitroprusside

D. Sodium thiosulphate

15. According to the principles of ICH GCP what should be recorded, handled, and stored in a way that allows its accurate reporting, interpretation and verification?

A. Data entered into the case report form

B. Source information

C. All clinical trial information

D. Essential documents

16. According to the principles of ICH GCP, what is the most important consideration when conducting a clinical trial?

A. data accuracy

B. protection of trial subjects

- C. Process adherence
- D. Statistical quality checks

17. What is informed consent in a clinical trial?

- a) The subjects do not know which study treatment they receive
- b) Patients injected with placebo and active doses
- c) Fake treatment
- d) Signed document of the recruited patient for the clinical trial procedures

18. Pharmacoeconomics studies include.....

- A. the science and activities relating to the detection, assessment, understanding and prevention of adverse effects or any other medicine-related problem
- B. Evaluates the cost (expressed in monetary terms) and effects (expressed in terms of monetary value, efficacy or enhanced quality of life) of a pharmaceutical product.
- C. the study and analysis of the distribution (who, when, and where), patterns and determinants of health and disease conditions in defined populations.
- D. the cost of branded medication, analysis of branded medication and its effect on manufacturer.

19. How many people will be selected for phase II trial?

- a) The whole market will be under surveillance
- b) 500-3000 people
- c) 100-300 people
- d) 20-50 people

20. Which of the following is a valid therapeutic use of interaction?

- A. Use of Probenecid with Penicillin
- B. Giving Aspirin with warfarin
- C. Instructing patient to take levofloxacin with milk or antacid
- D. Treatment of depression of MAO Inhibitor and Citalopram

21. Prevention of absorption due to Complexation and chelation of drugs in gastrointestinal tract is an example of.....

- A. Pharmacokinetic Interaction
- B. Pharmacodynamics Interaction
- C. Pharmaceutical Interaction
- D. Metabolic Interaction

22. Which of the following antihypertensive agents should be avoided in the elderly patients?

- A. Amlodipine
- B. Atenolol
- C. Benazepril
- D. Methyldopa

23. Which of the following medication is safe to use in the third trimester of pregnancy?

- A. Acetaminophen
- B. Warfarin
- C. Aspirin
- D. Oxycodone

Q24) Case control studies is called as

- A. Drug-oriented systems.
- B. Dose-oriented systems.
- C. Disease-oriented systems.
- D. Complication-oriented systems.

25. A 92-year-old woman is an inpatient in the geriatric unit. She has multivascular dementia. She is more confused and agitated. She has been given lorazepam 4 mg intramuscularly. She is now unconscious with a generalized tonic clonic seizure and a respiratory rate of 6 breaths per minute.

Which of the following could be used to reverse the effects of the lorazepam?

- A. Activated charcoal
- B. Flumazenil
- C. N-acetyl cysteine
- D. Naloxone
- E. Protamine sulphate

26. _____ of clinical trial involves first time human trial in a small number of patients.

- a Phase I
- b Phase II
- c Phase III
- d Phase IV

27. The purpose of preclinical testing is:

- a. To verify that a drug is sufficiently safe and effective to be tested in humans.
 - b. To undergo preliminary testing in healthy humans to monitor the effects of the drug.
 - c. To create a basic outline for the larger scale future tests on a widespread population.
 - d. To develop method of drug analysis
28. Cimetidine interacts with more drugs than ranitidine because;
- a) It is subjected to greater first pass metabolism
 - b) It is a more potent enzyme inducer
 - c) It is a more potent enzyme inhibitor
 - d) It has better oral absorption
29. What are Good Clinical Practices?
- a. Regulations set in place by Government that how clinical trials are supposed to be managed.
 - b. Clinical practices that adhere to the best standards of care.
 - c. Widely accepted standards of practice during clinical trials
 - d. The FDA's requirements for how trials are conducted and documented
30. Which is person responsible for the conduct of the clinical trial at a trial site?
- a) Clinical Research Coordinator
 - b) Monitor
 - c) Investigator
 - d) Sponsor
31. What does IRB Stand for?
- a) Investigational Review Board
 - b) International Review Board
 - c) Institutional Review Board
 - d) Inter institute review board
32. GCP provides public assurance that
- a) Rights and safety of participants are protected
 - b) The rights, safety and wellbeing of research participants are protected and that research data are reliable.
 - c) Results are reliable
 - d) Safety of participant is observed and results are reliable
33. Which of the following is a technique pharmacists can use to humanize themselves to their patients?
- a) Using the patient's preferred name in conversation
 - b) Delegating as many tasks as possible to an assistant

- c) Reading the text of a medication bottle verbatim to a patient
- d) Providing business cards at the desk

34. Which of the following terms does not describe an Adverse Drug Reaction?

- a) Idiosyncrasy
- b) Anaphylaxis
- c) Teratogenic effect
- d) Placebo effect

35. A 75-year-old man had been receiving gentamicin (an aminoglycoside antibiotic) to treat an urinary tract infection. After three months of therapy patient's serum creatinine levels were 10 mg/dL (normal 0.5-1.2) and serum gentamicin concentrations obtained just before the last dose were 9 mg/dL (normal < 2). Which of the following is the most likely adverse drug reaction the patient was suffering from?

- a) Type II allergic reaction
- b) Type III allergic reaction
- c) Pseudo allergic reaction
- d) Overdose toxicity

36. Idiosyncrasy is_____.

- a) Type A ADRs
- b) Type B ADRs
- c) Type C ADRs
- d) Type D ADRs

37. Which of the following drug is not needed to be TDM?

- a) Carbamazepine.
- b) Penicillin.
- c) Digoxin.
- d) Gentamicin.

38. Patient counselling helps to

- a) Know chemical structure of drug
- b) Develop business relations with pharmacist
- c) Motivate the patient to take medicine for improvement of his/her health status.
- d) Pass time at old age

39. Gary baby syndrome occur in new born with

- a) Tetracycline
- b) Chloramphenicol

- c) Penicillin
 - d) Erythromycin
40. Absorption of Griseofulvin increases with -----diet.
- a) Carbohydrate
 - b) Fatty
 - c) protein
 - d) vitamin
41. When tetracycline is given with antacids the absorption of tetracycline -----.
- a) Increases
 - b) Decreases
 - c) Minimally altered
 - d) Not altered at all
42. Which of the following would you classify as a pharmacodynamics interaction?
- a) ACE inhibitors with potassium-sparing diuretics cause life-threatening hyperkalaemia
 - b) Antacids reduce the absorption of fluoroquinolones
 - c) Increased bleeding due to cimetidine and warfarin
 - d) Probenecid increases half-life of penicillin
- 43 Which of the following is Type B ADRS?
- a) Hypoglycaemia caused by Insulin
 - b) Dryness of mouth caused by Atropine
 - c) Anaemia in patient with G6PD deficiency caused by Primaquine
 - d) Hyperglycaemia caused by thiazide diuretics
44. Pharmacovigilance is done for monitoring of
- a) Drug price
 - b) Unethical practises
 - c) Drug safety
 - d) Pharmacy students
45. GCP are seen in all of the following except
- a) Phase I trial
 - b) Phase II trial
 - c) Preclinical trials
 - d) Phase IV trial

46. Which of the following adverse drug reactions would you report to the Medicines and Healthcare Products regulatory Agency (MHRA) via the yellow card system for reporting?

- a) A patient reports a skin rash after starting a course on amoxicillin capsules.
- b) A patient reports experiencing dyspepsia when they take their indomethacin capsules.
- c) A patient complains of a dry irritating cough since they have started taking ramipril.
- d) A patient complains they have experienced diarrhoea since taking azilsartan.

47. You are asked to compare the cost of four different antibacterial medicines. Which of the following treatment courses is the lowest cost?

- a) Medicine A costs £17.00 for 28 tablets. The adult dose is one tablet twice a day and the usual treatment duration is 7 days.
- b) Medicine B costs £30.00 for 100 tablets. The adult dose is one tablet four times a day and the usual treatment duration is 7 days.
- c) Medicine C costs £20.00 for 25 tablets. The adult dose is one tablet twice a day and the usual treatment duration is 5 days.
- d) Medicine D costs £25.00 for 14 tablets. The adult dose is one tablet each day and the usual treatment duration is 5 days.

48. Which of the following patients are at the highest risk of suffering from an adverse drug reaction?

- a) An 8 month year old infant receiving a prescription for an antibiotic.
- b) A 22 year old patient with asthma receiving prescriptions for inhalers to relieve and prevent their asthma.
- c) A 48 year old patient who has hypertension and receives a prescription for an ACE Inhibitor.
- d) A 68 year old patient who has oedema receiving a prescription for a diuretic.

49. What is a semi-synthetic drug?

- a) A drug isolated from nature and used without any further modification
- b) A drug made entirely in a lab from scratch
- c) The structure of a drug half-way through its preparation
- d) A drug which has been -made by nature and partly-modified in a lab

50 Which of the following statements best describes a lead compound?

- a) A compound that contains the element lead
- b) A compound from the research laboratory that is chosen to go forward for preclinical and clinical trials.

- c) A molecule that shows some activity or property of interest and serves as the starting point for the development of a drug.
- d) The first compound of a structural class of compounds to reach the market.
- X-----X-----

FINAL YEAR UNIVERSITY EXAMINATION 2019-2020
Final Year B.Pharm. Semester VIII
SUBJECT-BPH_E_807_T-Clinical Pharmacy
MULTIPLE CHOICE QUESTIONS: ANSWER KEY

Q. No.	Correct Option SET1
1	c
2	c
3	c
4	a
5	b
6	b
7	a
8	c
9	c
10	d
11	c
12	c

13	a
14	d
15	c
16	d
17	b
18	b
19	a
20	a
21	c
22	B
23	a
24	d
25	b
26	b
27	a
28	d
29	C
30	a
31	b
32	c
33	d
34	a
35	b
36	a

37	d
38	b
39	c
40	b
41	B
42	c
43	A
44	b
45	a
46	b
47	b
48	b
49	b
50	d
51	b
52	c
53	a

Question Number	Answer (SET 2)
1	D
2	D
3	B
4	C
5	A
6	A
7	B
8	A
9	A

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

