

 جامعة طنطا كلية الصيدلة	Tanta University, Faculty of Pharmacy, Department of Pharmaceutical Technology			
	Final Exam for Second Level Students			
	Course Title: Pharmaceutics-I	Code: PT 302		
17/3/2021	Term: First	Total Marks: 50	Total pages: 6	Time allowed: 2 Hours

You are provided with 100 MCQs together with answers for each question. You need to select one answer for each question and blacken the corresponding circle in the attached bubble sheet.

- Which of the following statements is TRUE regarding oral route?
 - Suitable in case of vomiting
 - Not suitable for self-administration
 - ☒ Absorption is slow and may be incomplete
 - Suitable if patient is unconscious
- Which of the following formulations CANNOT be applied to the eye?
 - ☒ Liniments
 - Ointments
 - Solutions
 - Suspensions
- Liquid preparations for rectal administration are called
 - Collodions
 - ☒ Enemas
 - Pessaries
 - Suppositories
- Insufflations are introduced into which of these body cavities?
 - Nose
 - Throat
 - Ear
 - ☒ All of the above
- Which of the following is NOT TRUE regarding the transdermal route?
 - ☒ One of the topical routes of administration
 - Suitable for potent drugs
 - Suitable for short $T_{1/2}$ drugs
 - Used for systemic effect
- Parenteral suspensions are contraindicated to be given by route.
 - Subcutaneous
 - Intramuscular
 - ☒ Intravenous
 - None of the above
- Which of the following is NOT TRUE regarding hard gelatin capsules?
 - Formed of 2 pieces
 - Used for solid medicaments
 - ☒ The capsule is formed, filled, and sealed in one manufacturing operation
 - Its content is in the form of powder, spheres or compressed mass
- Route by which steroids are injected into joints is termed.....
 - Intracardial
 - Intrathecal
 - Intraocular
 - ☒ Intra-articular

Questions (9 to 12) can be answered using the following dosage forms. Choose one answer for each sentence and blacken the corresponding circle in the answer sheet:

- | | | | |
|------------|-----------|----------|------------------|
| a. Linctus | b. Elixir | c. Syrup | d. Oral emulsion |
|------------|-----------|----------|------------------|
- Concentrated aqueous solution of sugar (sucrose). ☒ c
 - Pleasantly flavored clear liquid oral preparation of potent or nauseous drugs containing high proportion of ethanol. ☒ b
 - Viscous liquid oral preparations usually containing high proportion of syrup or glycerol which have demulcent effect. ☒ a
 - Fine dispersion of droplets of an oily liquid in an aqueous liquid (aqueous phase) which acts as the continuous phase. ☒ d
 - Which of the following is NOT TRUE regarding nasal drops?
 - The drug may be antihistaminic, vasoconstrictor or decongestant
 - ☒ Drugs cannot be absorbed from the nasal mucosa to reach the systemic circulation
 - Oily nasal drops are prohibited due to damage of cilia
 - Prolonged use of vasoconstrictor leads to rebound vasodilatation
 - Pessaries include:
 - Molded pessaries
 - Compressed (Vaginal tablets).
 - Vaginal capsules (soft gelatin)
 - ☒ All of the above

15. Which of the following dosage forms must be sterile?

- a. Parenteral preparations
- b. eye drops
- c. Irrigation solutions
- d. a&b
- e. All of the above

Questions (16 to 19) can be answered using the following dosage forms. Choose one answer for each sentence and blacken the corresponding circle in the answer sheet:

- a. liniments
- b. Pastes
- c. Collodions
- d. Lotions

16. Liquid preparations to be applied on the skin in which pyroxylin is dissolved in volatile liquid forming protective film after evaporation. (c)

17. Liquid preparations for application to skin without friction (d)

18. Fluid or semisolid preparations for application to skin with rubbing. They may be alcoholic or oily solutions or emulsions. (a)

19. Topical semisolid preparations containing high proportions of fine powder (b)

20. Bulk powders contain drugs

- a. Potent
- b. Non-potent
- c. Both a&b
- d. None of the above

21. What is USP?

- a. The United States Pharmacology
- b. The United States Pharmacy
- c. The United States Pharmacopoeia
- d. The United States Pharmaceutics

22. The prescription must be received and checked by the

- a. Physician
- b. Patient
- c. Nurse
- d. Pharmacist

23. The superscription is represented by a symbol....

- a. R
- b. Dc
- c. Doc
- d. Ph

24. The inscription part of the prescription contains

- a. Name and quantity of ingredients
- b. Patient name, Age
- c. Registration number and Patient information
- d. Signature, Address

25. The subscription part of prescription contains

- a. Directions to the pharmacist
- b. Directions to the patient
- c. Directions to the patient's relatives
- d. None of the above

26. A 2 years old child weighs 11.4 kg. The adult dose for Drug "X" is 280mg. Accordingly, the correct dose for the child using Young's rule is.....

- a. 46.816 mg
- b. 40 mg
- c. None of the above, it is

27. When two or more drugs are used in combination to increase the pharmacological action, this phenomenon is known as

- a. Synergism
- b. Tolerance
- c. Potentiation
- d. Antagonism

28. A term used to indicate an absolute prohibition to the use of a drug in presence of certain stated conditions.

- a. Precaution
- b. Contraindication
- c. Warning
- d. None of the above

29. Which of the following is NOT TRUE regarding drug tolerance?

- a. Defined as reduced effect of drug due to repeated use.
- b. Tolerance occurs commonly in such drugs e.g. antihistaminics, narcotic analgesics.
- c. Normal sensitivity may be regained by stopping drug administration for a period of time.
- d. The development of tolerance can be minimized by initiating drug therapy with the highest effective dose.

30. The volume of benzalkonium chloride solution (50% w/v) needed to prepare 200ml of dilute benzalkonium chloride solution (20% w/v) is

- a. 0.8ml
- b. 8ml
- c. 80ml
- d. None of the above

Questions (31 to 32) can be answered using the following formula:

R/	Squill oxymel	300ml
	Camphorated opium Tr	300ml
	Syr. Tolu	300ml

31. The previous formula is.....

- a. Linctus
b. Elixir
c. Oral emulsion
d. syrup

32. The amount of Squill oxymel required to prepare 1200ml of the above formula is

- a. 225ml
b. 400ml
c. 1200ml
d. None of the above and it is.....

33. What is the amount of Pot. Permang. required to prepare 1000 ml of 1 in 10000 solution?

- a. 10mg
b. 100mg
c. 1000mg
d. None of the above

34. What is the volume of an oral liquid medicine, available as 400 mg drug X/5 mL, which is required for a 5-day supply for a patient prescribed a dose of 800 mg drug X twice daily?

- a. 50ml
b. 100ml
c. 150ml
d. 200ml

35. What is the volume of cetrimide 40% w/v solution required to prepare 200ml of 1 in 10 cetrimide solution?

- a. 0.5ml
b. 5ml
c. 50ml
d. None of the above

Questions (36 to 37) can be answered using the following formula:

R/	Coal tar	6 g
	Starch	20 g
	Zinc oxide	20 g
	Soft paraffin	54 g

$\times \frac{1}{4}$

36. The above formula is.....

- a. Cream
b. Ointment
c. Liniment
d. Paste

37. The amount of Zinc oxide required to prepare 25gm of the previous formula is....

- a. 0.5gm
b. 3gm
c. 15gm
d. None of the above

Questions from (38-50) are True or False questions. Please assign (A) for the true statement and (B) for the false statement in the corresponding bubble sheet.

38. Sublingual route involves drug administration under the tongue providing rapid systemic drug action. (a)

39. Orally administered antacids require systemic absorption to give its action. (b)

40. Irritant drugs that cannot be administered subcutaneously can be given by the intramuscular route. (a)

41. Inhalation route is useful for anaesthetic gases and volatile liquids. (a)

42. The physician order form is used for hospital outpatient. (b)

43. Oral transmission of medication order by prescriber is permitted except for controlled drug. (a)

44. The age of a patient above 12 years is a legal requirement and will help the pharmacist to check the dose. (b)

45. Bulk prescriptions are written for one named patient on NHS prescription form. (b)

46. Clark's rule is more dependable than Young's rule for child dose calculation. (a)

47. A lower parenteral dose of a drug is required than the oral dose to achieve the same blood levels of drug. (a)

48. Therapeutic index is the ratio between a drug's minimum effective dose and minimum toxic dose ($ED_{50\%} / TD_{50\%}$). (b)

49. In order to reach the steady state of plasma drug concentration, the dosing time interval should be longer than the time required for complete elimination of the previous dose. (b)

50. In order to prepare 4 sachets each containing 500mg diazepam, we need to make 1 in 100 dilution of the drug with lactose. (a)

51. All of the following are considered disadvantages of solution **EXCEPT**:

- a. Bulky during transportation.
- b. The highest stable dosage form.
- c. An applicator is essentially needed for administration.
- d. Several problems associated with its package.
- e. None of the above

52. Water has a superior extraction property.

- a. True
- b. False

53. Regarding to the last portion remaining during water purification:

- a. It has acidic property due to heating of $MgCl_2$.
- b. Phosphoric acid is one of its major components.
- c. It should be discarded.
- d. Both a and c
- e. All of the above

54. Ion exchange resin is an optimum method used for preparation of deionized water.

- a. True
- b. False

55. Talc added during formulation of aromatic water, is used for preparation of:

- a. Simple aromatic type via distillation method.
- b. Concentrated aromatic type via distillation method.
- c. Simple aromatic type via solution method.
- d. Concentrated aromatic type via solution method.
- e. None of the above

56. Concerning micelles formation:

- a. They are self-aggregates composed in the bulk of medium.
- b. They should be formed after exceeding the point of critical micelle concentration.
- c. Their arrangement depends on the structure of surfactant and nature of vehicle.
- d. Both a and c
- e. All of the above

Questions 57-61 can be answered using the following choices:

- a. Hydrotropy
- b. Cosolvency
- c. Micellar solubilization
- d. None of the above

You are provided with different mechanisms for improving the solubility of poorly soluble drugs. Which one is represented in the following statements?

- 57. Solubility of chlorocresol is enhanced after addition of 30% sodium benzoate.
- 58. Surfactant is an essential component used for enhancing the solubility of poorly soluble drug.
- 59. Water miscible solvent in which the drug has a good solubility should be added.
- 60. Solubility of sodium phenobarbitone is improved after addition of propylene glycol.
- 61. Strong solution of certain solutes can dissolve water insoluble material via of inter-ionic or intermolecular bonds.

Questions from 62 -67 can be answered using the following choices. The same answer can be used for more than one question.

- a. Coloring agent
- b. Preservative
- c. Flavoring agent
- d. Tonicity Contributor
- e. Antioxidant

You are provided with different types of additives used during solution preparation. What is the role of the following examples?

- 62. Sodium chloride
 - 63. Butylated hydroxy toluene
 - 64. Amaranth solution
 - 65. Parabens
 - 66. Compound orange spirit
 - 67. Sodium metabisulfite
 - 68. The concentrated linctus should be diluted with syrup to keep the demulcent effect.
- a. True
 - b. False

69. Which of the following mixtures require an auxiliary label "Shake the Bottle Before Use"?:

- a. White mixture
- b. Tr. Benzoin Co
- c. Bismuth and Chalk mixture
- d. Creosote mixture
- e. All of the above

70. Regarding to Lugol's solution:

- a. Iodine is soluble in water.
- b. A soluble complex of KI_3 should be formed.
- c. KI is the main active constituent.
- d. Both a and c
- e. All of the above

71. A thirty-six-year-old COVID-19 patient frequently administers his anticoagulant tablet once daily. He started to take two aspirin tablets three times daily due to severe headache. After three days, severe nasal bleeding and some hematoma patches has appeared in his arms. This might be due to:

- a. Therapeutic incompatibility with synergistic effect between two administered drugs.
- b. Therapeutic incompatibility with antagonistic effect between two administered drugs.
- c. Physical incompatibility due to precipitation of aspirin.
- d. Both a and c
- e. None of the above.

Questions from 72 -76 can be answered using the following choices.

- a. Antagonism
- b. Synergism
- c. None of them

You are provided with the two types of therapeutic incompatibility, what is the most predicable type that will occur after co-administration the following formulae:

- 72. Creosote mixture and simple linctus.
- 73. Chloral hydrate enema and phenobarbitone elixir.
- 74. Bismuth & chalk mixture and white mixture.
- 75. Phenobarbitone elixir and stimulant enema.
- 76. Aminophylline and Cimetidine.

Questions from 77- 83 can be answered using the following choices.

- a. Ion reaction
- b. Insolubility
- c. Eutexia
- d. Immiscibility
- e. Adsorption.

You are provided with different types of incompatibilities, what is the most predicable type that will occur in the following cases:

- 77. Dilution of Creosote with camphor water.
- 78. Preparation of calcium Carbonate aqueous solution.
- 79. Reconstitute ceftriaxone vial with ringer's solution.
- 80. Heavily trituration of menthol and camphor.
- 81. Addition of talc as lubricant during preparation of Vitamin B₁₂ tablets.
- 82. Mixing solutions of magnesium sulfate and calcium chloride.
- 83. Grinding of Salol and thymol in the same mortar.

Questions from 84-86 can be answered using the following statement.

An antiepileptic formula composed from aqueous solution of barbiturate sodium salt and ammonium bromide. After two days, a precipitate has been formed at the bottom of container.

84. This precipitate is composed from:

- a. Ammonium barbiturate
- b. Ammonium hydroxide
- c. Barbituric acid
- d. Both a and c

85. This type of incompatibility is:

- a. Insolubility
- b. pH change
- c. Complex formation
- d. Double decomposition reaction

86. This incompatibility can be solved by:

- a. Addition of surfactant
- b. Use gum acacia
- c. Change the vehicle
- d. Replacement ammonium bromide with sodium bromide
- e. None of the above

Questions from 87- 91 can be answered using the following choices.

- | | | |
|-----------------|------------------|--------------|
| a. Astringent | b. Antispasmodic | c. Purgative |
| d. Anthelmintic | e. Stimulant | |

You are provided with different types of enemas. Which one has the following active ingredient?

- | | | |
|-----------------|-----------------------------|--------------------|
| 87. Tannic acid | 88. Glycerin and Castor oil | |
| 89. Turpentine | 90. Black coffee | 91. Silver nitrate |

92. Propylene glycol is an optimum solvent for:

- | | | |
|----------------|----------------------------|----------------------|
| a. Nasal drops | b. Ophthalmic preparations | |
| c. Ear drops | d. Both a and c | e. None of the above |

Questions from 93- 96 can be answered using the following formula.

R/ Chloroxylenol	50 g
Pot. Hydroxide	13.6 g
Oleic acid	7.5 ml
Castor oil	63 g
Terpineol	100 ml
Ethanol 96%	200 ml
Purified water to	1000 ml

93. This formula is an example for:

- | | | |
|----------------|------------------------|------------|
| a. Nasal spray | b. Ear drops | c. Gargles |
| d. Liniments | e. Antiseptic solution | |

94. The surfactant in the previous formula composed from reaction between:

- | | |
|--|----------------------------|
| a. Castor oil and potassium hydroxide. | |
| b. Oleic acid and potassium hydroxide. | |
| c. Terpinol and ethanol | d. No surfactant is formed |
| | e. Both a and b |

95. The surfactant composed in previous question is:

- | | |
|----------------------------|---------------------|
| a. Potassium ricinoleate | b. Potassium Oleate |
| c. No surfactant is formed | d. Both a and b |

96. The mechanism(s) used in this formula for enhancing chloroxylenol solubility is/are:

- | | | |
|-----------------|----------------------------|---------------|
| a. Hydrotropy | b. Micellar solubilization | c. Cosolvency |
| d. Both a and c | e. Both b and c | |

Questions from 97- 100 can be answered using the following choices.

- | | | |
|------------------|----------------------|-------------------|
| a. Explosion | b. Effervescence | c. Hygroscopicity |
| d. Efflorescence | e. None of the above | |

You are provided with different powder properties should be carefully considered during powder formulation, which one is represented in the following examples:

- | | |
|--|-----------------------|
| 97. Copper sulfate pentahydrate | 98. Physostigmine Hcl |
| 99. Mixture of tartaric acid and sodium bicarbonate | |
| 100. Mixture of potassium permanganate with charcoal | |

—good luck—