1- Corticosteroid injection in the joint space is known as.....

a) Intra-articular
b) Intracisternal
c) Intramuscular
d) intraocular

2- Which of the following statements is <u>NOT TRUE</u> regarding oral route?

a) The most common route
b) Convenient for self administration
c) Drugs may be degraded by the stomach pH or by digestive enzymes
d) Suitable if patient is unconscious

3- Drug deliveries through nasal and rectal mucosa to give local effect.....

a) Enteral administration
b) Pulmonary administration
c) Topical applications
d) Transdermal route

4- Sublingual route of drug administration has a region that permits ..... absorption

a) moderate
b) rapid
c) slow
d) slow to moderate

5- Antipyretic suppository used to reduce elevated body temperature, this would represent which type of drug delivery?

a) Parenteral and local
b) Parenteral and systemic
c) Rectal and local
d) Rectal and systemic

6- Delivery of a drug through skin to reach systemic circulation is known as.....route

a) buccal
b) topical
c) transdermal
d) intracisternal

7- Transdermal route is suitable for ..... drugs

a) Short T1/2
b) Long T1/2
c) potent
d) Both a and c
e) Both b and c

8- Which of the following statements is <u>NOT TRUE</u> regarding rectal route?

a) It involves insertion of the drug into the rectum
b) Drugs are absorbed mainly to the systemic circulation
c) It is unsuitable in case of vomiting or unconscious
d) It is useful for drugs known to cause GI irritation

9- All the followings are true regarding soft gelatin capsules (SGC) <u>EXCEPT</u>.....

a) Formed of one piece
b) formed, filled and sealed in two manufacturing operations
c) Their contents are usually in the form of liquid
d) The liquid content can be solution or dispersion in non-aqueous liquid.

10- Hard gelatin capsules are.....

a) formed of 2 pieces
b) body and cap are fitted together after filling
c) used for solid medicaments
d) all of the above

<u>Questions 11 - 16 can be answered using the following answers. The same answer can be used for more than one question:</u>

a- Emulsion **b- Linctus** **c- Lozenge**
d- Tablet **e- Syrup**

11- Concentrated aqueous solution of sugar (sucrose).
12- Viscous liquid oral preparation that is usually prescribed to relief cough.
13- Fine dispersion of droplets of an oily liquid in an aqueous liquid (aqueous phase) which acts as the continuous phase.
14- Solid preparation consists mainly of sugar and gum used to treat mouth and throat.
15- Compressed oral solid dosage form.
16- It usually contains high proportion of syrup or glycerol which have demulcent effect.

Questions 17- 21 can be answered using the following answers. Choose one answer for each sentence and blacken the corresponding square in the answer sheet:

a- Liniments **b- Collodions** **c- Pastes**
d- Lotions **e- Creams**

17- Semisolid preparations for external application containing high proportions of fine powder.
18- Liquid preparations for application to skin in which pyroxylin is dissolved in volatile liquid and forms protective film after evaporation.
19- Liquid preparations for application to skin without friction.
20- Semisolid emulsions for external use. They may be o/w or w/o.
21- Fluid or semisolid preparations for application to skin generally with rubbing. They may be alcoholic or oily solutions or emulsions.

22- ..... are covered with rubber cap and usually contain powder for injection after reconstitution.

a) ampoules b) large volume parenterals
c) vials d) none of the above

23- List which is containing medicinal substances, crude drugs and formulae for making pharmaceutical preparations of them prepared by recognized authorities approved by the government of each country is known as .....

a) Medication order b) pharmacopoeia
c) physician order d) bulk prescription

24- Prescription is used for hospital outpatient.

a) True b) False

25- The age of child under 12 years is a legal requirement in prescription and will help the pharmacist to check the dose.

a) True b) False

26- Controlled drugs can be dispensed by oral transmission of the physician.

a) True b) False

27- Medicament in prescription may be prescribed as:

a) Generic name b) Brand name
c) Special formula with name and quantity of ingredients d) All of the above

28- If patient needs a prescription for one-month supply of medicine with refills for 3 months, number of refills in the prescription will be:

a) 1 b) 2
c) 3 d) None of the above, it is.....

Questions 29 -32 can be answered using the following answers. Choose one answer for each sentence and blacken the corresponding square in the answer sheet.

a) Superscription **b) Inscription**
c) Subscription **d) Signature**

29- Directions to the patient including the size of dose, frequency of dosing and route of administration.
30- General body of prescription. It comprises a list of ingredients and the quantity of each to be supplied.
31- The uppermost part of prescription and is simply represented by the sign R/.
32- This part includes directions for the pharmacist as type of product, dose and number of doses to be dispensed.

33. The schedule of drug dosing is known as .....

a) dose
b) dosage form
c) dosage regimen
d) route of administration

34. A 6 y/o child weighs 20 kg. The adult dose for Drug "X" is 300mg. The correct dose for the child using Young's rule is.....

a) 88 mg
b) 100 mg
c) 150 mg
d) None of the above, it is.....

35. In the previous question (Q34), the correct dose for the child using Clark's rule is.....

a) 88 mg
b) 100 mg
c) 150 mg
d) None of the above, it is.....

Questions 36 - 38 can be answered using the following answers. Choose one answer for each sentence and blacken the corresponding square in the answer sheet:

a- Contraindication **b- Precaution** **c- Warning**

36. It is used to advise the prescriber of some possible problems attendant with the use of the drug.
37. It is used when the potential for patient harm is great. e.g. If tetracycline is used in the presence of renal impairment, it may lead to accumulation of the drug and possible liver toxicity. So, Lower than usual doses are indicated.
38. It is used to indicate an absolute prohibition to the use of a drug in presence of certain stated conditions.

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

a) True
b) False

40. If the interval between each dose is shorter than the time required for complete elimination of the previous dose, the plasma concentration-time profile of a drug will exhibit a series of isolated single-dose profiles.

a) True
b) False

41. Time at which drug start's its action is referred to as.....

a) Duration of action
b) Onset time
c) Tmax
d) None of the above

Questions 42 - 43 can be answered using the following formula

R/

Bees wax	**20 g**
Hard paraffin	**30 g**
Cetostearyl alcohol	**50 g**
Soft paraffin	**900 g**

42. This formula is.....

a) Cream
b) Liniment
c) Ointment
d) Paste

43. Amount of soft paraffin required to prepare 50 gm of the formula is.....

a) 45 mg
b) 45 gm
c) 0.45 gm
d) 450 gm

Questions 44 – 45 can be answered using the following formula:

R/

Methyl salicylate	**25 ml**
Eucalyptus oil	**10 ml**
Arachis oil to	**100 ml**

44- This formula is……..

a) Cream
b) Liniment
c) Ointment
d) Paste

45- Amount of Arachis oil required to prepare 250 ml of the formula is….

a) 162.5 ml
b) 187.5 ml
c) 200 ml
d) 250 ml

46- What is the volume of an oral liquid medicine, available as 500 mg drug X/5 mL, which is required for a 7-day supply for a patient prescribed a dose of 1000 mg drug X twice daily?

a) 20 ml
b) 70 ml
c) 140 ml
d) 210 ml

47- What is the volume of strong cetrimide solution (40% w/v) required to prepare 400ml of cetrimide solution containing 2% w/v?

a) 0.2 ml
b) 2 ml
c) 20 ml
d) 200 ml

48- What is the volume of Pot. permang. 0.25% w/v solution required to prepare 500ml of 1 in 5000 Pot. Perming. Solution?

a) 0.4 ml
b) 4 ml
c) 40 ml
d) 400 ml

49- The amount of proflavin required to prepare 500 ml of 1 in 1000 solution is……

a) 0.5 mg
b) 5 mg
c) 50 mg
d) 500 mg

50- Trituration is a term applied for…….

a) grinding materials in the mortar
b) mixing substances
c) diluting active ingredient with inert substance
d) All of the above

51. Oral solution of potassium iodide is considered more safe dosage form than tablet because of all the following EXPECT:

a. Shorter transit time in gastrointestinal tract
b. No need for disintegration
c. Faster absorption
d. No need for dissolution
e. Both a and c
f. None of the above

52. Interaction between dissolved salts and hot water resulting in release of acidic substances could occur during:

a. Sterilization
b. Deionization
c. Depyrogenation
d. Distillation
e. All of the above

53. Talc added during the preparation of aromatic water via solution method has the following functions EXPECT:

a. Adsorbent
b. Filter aid
c. Increasing the surface area of volatile oil droplets to water
d. Distributing agent
e. Both a and c
f. None of the above

54. Depyrogenation is carried out by:

a. Autoclaving
b. Oxidation
c. Irradiation
d. Filtration
e. All of the above
f. None of the above

55. The dynamic mechanism of Cosolvency includes the following:

a. Decreasing the dielectric constant and polarity of the main solvent
b. Breaking of interionic or intermolecular bonds of the solute
c. Addition of strong solution of organic solute
d. Both a and b

56. All the following are true about Glycerin <u>EXPECT</u>:

a. Is used as humectant in topical preparation
b. Can be added as cosolvent with water
c. Is a selective solvent
d. Has a preservative role
e. Acts as thickening agent
f. None of the above

57. If the concentration of benzalkonium chloride increases gradually in oily vehicle till the point of critical micelle concentration, the configuration of micelle will be as the following:

a. The cationic head and the hydrophobic tail will be directed towards the bulk of solvent and the core of micelle respectively
b. The anionic head and the hydrophobic tail will be directed towards the core of micelle and the bulk of solvent respectively
c. The anionic head and the hydrophobic tail will be directed towards the bulk of solvent and the core of micelle respectively
d. The cationic head and the hydrophobic tail will be directed towards the core of micelle and the bulk of solvent respectively
e. No micelle will be formed

58. Dissolving of chlorocresol in water utilizing 25-30% sodium benzoate is an example of:

a. Micellar solubilization
b. Hydrotropic effect
c. Cosolvency
d. Both b and c
e. All of the above
f. None of the above

59. A type of stabilizer used as fat soluble antioxidant:

a. Vitamin C
b. Vitamin D
c. Vitamin E
d. Tocopherol
e. Both b and d
f. Both c and d

60. During preparation of phenobarbitone elixir, glycerol has been added to act as:

a. Thickening agent
b. Sweeting agent
c. Cosolvent
d. Viscosity enhancing agent
e. Both b and c
f. All of the above

61. Tr. Nux vomica is an adjuvant:

a. Used for cough relief as an expectorant
b. A type of precipitate forming liquid
c. Used for treatment of blood disease disorder
d. Both b and c

62. Bismuth carbonate powder:

a. Is insoluble indiffusible
b. Is insoluble diffusible
c. Need suspending agent
d. Can be levigated with glycerin or propylene glycol
e. Both a and c
f. Both d and b

63. Lugol's solution is an example of:

a. Intended chemical incompatibility between I_2 and KI.
b. Unintended physical incompatibility between I_2 and KI.
c. Unintended chemical incompatibility between I_2 and KI.
d. Intended physical incompatibility between I_2 and KI.
e. Intended chemical incompatibility between I_3 and KI_2.

Questions from 64 - 68 can be answered using the following choices. The same answer can be used for more than one question.

a. Collodion	**b. Peanut oil**	**c. Linctus**
d. Elixir	**e. Spirit**	**f. Olive oil**

64. Used as a vehicle for methyl salicylate liniments.
65. Alcoholic solutions containing volatile liquids which are sparingly soluble in water.
66. Viscous sweetened solutions having demulcent and sedative effect.
67. Used as a solvent for phenolic submucosal injection.
68. Has two types different in plasticity.

69. A thirty-five-year-old epileptic patient treated with phenobarbital is suffering from severe nonproductive cough. The physician has prescripted a codeine linctus for his case. After one day of treatment, his daily activities have been negatively affected. He has feeling of general weakness and laziness. This might be due to:

a. The dose of codeine should be reduced
b. Codeine linctus is used for productive cough only
c. Therapeutic incompatibility with antagonistic effect
d. Therapeutic incompatibility with synergistic effect
e. Both a and b

70. Co-administration of bismuth and chalk mixture with white mixture results in:

a. Severe diarrhea
b. Severe constipation
c. No notable progress in the patient's state
d. None of the above

71. Rx

Menthol	**1.0 g**
Camphor	**1.0 g**
Ammonium carbonate	**10.0g**

Make a powder.

This formula may contain a type of:

a. Chemical incompatibility – pH change
b. Physical incompatibility – liquification
c. Physical incompatibility – precipitation
d. Chemical incompatibility – complex formation
e. Physical incompatibility – adsorption on solid surface
f. Both d and e

72. The optimum solution to overcome the problem encountered in the above formula is:

a. Adding suitable adsorbent.
b. Exchanging ammonium carbonate with magnesium carbonate.
c. Dispensing the ingredients separately as possible.
d. Both a and c
e. All of the above

73. Using powder of talc in preparation of vitamin B_{12} tablet will lead to:

a. Decrease the efficacy of the drug
b. Increase the efficacy of the drug
c. No effect on the drug efficacy
d. Vitamin B_{12} should not be administrated orally
e. Both c and d

Questions from 74 - 78 can be answered using the following choices. The same answer can be used for more than one question.

a. Ion reaction	**b. pH change**	**c. Precipitation**
d. Gas evolution	**e. Both a and c**	**f. Both b and c**

You are provided with different types of physical and chemical incompatibilities, what is the most predicable type(s) that will occur in the following cases:

74. Aromatization the solution of ferric chloride with spirit of ammonia.
75. Co administration of ceftriaxone with Ringer's solution for intravenous injection.
76. Coagulation of colloidal mucilage due to addition of sodium chloride.
77. Potion Revier mixture.
78. Coadministration of strychnine Hcl and borax.

Questions from 79 - 85 can be answered using the following choices. The same answer can be used for more than one question.

a. Purgative enema	**b. Anthelmintic enema**	**c. Astringent enema**
d. Emollient enema	**e. Carminative enema**	**f. Diagnostic enema**

79. Quassia is considered one of its active components.
80. It is used to relieve gaseous distention of the abdomen.
81. It is mainly composed from Tannic acid and Alum.
82. It has an irritating effect on the mucus lining, stimulate peristalsis.
83. It is given to destroy & expel the worms from the intestines.
84. Barium enema is one of its examples.
85. It has anti-inflammatory action for a temporary relief in the inflamed area.

86. The concentration of sodium chloride (%w/w) in the nasal sprays and/or drops should be:

a. 0.5	b. 0.7	c. 0.8
d. 0.9	e. 0.4	f. 0.6

87. Excessive use of nasal decongestants will result in:

a. Swelling of blood vessels	b. Tolerance	
c. Stuffiness	d. Both a and b	e. All of the above

88. Rx

Chloramphenicol	**5 g**
Propylene glycol to	**100 ml**
Prepare ear drops send	**20 ml**

All are true about propylene glycol used in the above formula EXPECT:

a. It is used as cosolvent to enhance the solubility of chloramphenicol.
b. It is an adjusting viscosity agent.
c. It helps in fixation of formulation in auditory canal.
d. It cannot be used in eye and nose preparations.
e. None of the above.

89. Zinc salts are considered the main active constituents in mouth wash preparations because they act as:

a. Analgesic	b. Antiseptic	c. Astringent
d. Anti-inflammatory	e. Disinfectant	f. All of the above

90. An alcoholic Liniments is used when:

a. A demulcent action is needed on dry skin.
b. A deep penetrating effect is required.
c. An optimum delivery of anti-inflammatory drug is necessary to relief an injured skin.

d. Both a and b.	e. Both a and c.	f. All of the above

91. Gentian Violet paint is:

a. Applied topically for mouth ulcers.
b. Used for relief inflammation of open sores.
c. After application, coverage the infected area is necessary to enhance healing.
d. Used for fungal infection on intact skin.
e. Both a and d.
f. All of the above.

92. Rx

Chloroxylenol	**50 g**
Potassium 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**

Prepare solution send 500 ml

The solubility of chloroxylenol is enhanced in the above formula via:

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

93. In the above formula, oleic acid is used to:

a. Incorporate a demulcent effect to the formulation
b. Control consistency c. Adjust pH
d. Neutralize excess amount of KOH e. Both a and b f. Both c and d

94. A bulk powder formulation containing drug X (10µg) is subjected to quality control test. The formula has been rejected because of uneven distribution of the active constituent throughout the formulation. This might be due to:

a. Suboptimal mixing of the drug with other excipients
b. Inaccurate weighing of the ingredients
c. Sieving step was missed during preparation
d. Incompatibility occurred between the packaging container and drug X
e. Both a and b f. All of the above

95. The problem encountered in the above question can be solved by:

a. Double check on the weight of each ingredient.
b. Geometric mixing of the drug with the remaining excipients
c. Changing the type of the packaging container
d. Careful inspection of the sieve diameter used to control the particle size of the ingredients
e. Both a and b f. All of the above

<u>Questions from 96 - 100 can be answered using the following choices. The same answer can be used for more than one question.</u>

a. Eutexia b. Effervescence c. Efflorescence
d. Explosion e. Hygroscopicity f. None of the above

You are provided with different phenomena that might occur after incorporation of some solid substances during formulation, which one will occur in the following cases:

96. Analgesic tablets containing codeine phosphate stored for two months in open place.
97. Utilization of charcoal as an adsorbent in a formulation containing potassium dichromate.
98. A formulation containing camphor and salol.
99. Hard gelatin capsules of sodium bromide placed for three months in highly humid store.
100. Forming a damply mass with semisolid consistency after losing its water of crystallization molecules.

good luck