Total No. of Printed Pages : 13

(DO NOT OPEN THIS QUESTION BOOKLET BEFORE TIME OR UNTIL YOU ARE ASKED TO DO SO)

A

SET-Z

M.Phil./Ph.D./URS-EE-2020

SUBJECT : Pharmaceutical Science

Sr. No. 10073

Time : **1¼ Hours** Max. Marks : **100** Total Questions : **100**

Roll No. (in figures)_____ (in words) _____

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1. When 1 to 10 parts of solvent are required to dissolve 1 part of the solute, as per USP, the solubility is defined as :
   (1) Very soluble
   (2) Freely soluble
   (3) Soluble
   (4) Sparingly soluble

2. When the speed of the reaction depends on the concentration of A and B with each term raised to the first power, the rate of decomposition of A is equal to the rate of decomposition of B, and both are proportional to the product of the concentration of the reactants. This statement refers to which of the following :
   (1) Zero order reactions
   (2) Apparent zero order reactions
   (3) First order reactions
   (4) Second order reactions

3. The Hixson - Crowell Cube Root Law is applicable to the dissolution of which of the following ?
   (1) Tablets
   (2) Capsules
   (3) Granules
   (4) Powders

4. Which ofthe following surfactants has a highest HLB value ?
   (1) Span 80
   (2) Span 20
   (3) Tween 80
   (4) Triethanolamine oleate

5. What is the particle size range of colloidal dispersions ?
   (1) Less than 1 nm
   (2) 1 nm to 0.5 microns
   (3) Greater than 0.5 microns
   (4) 100 microns and above

6. Although energy can be transformed from one kind into another, it cannot be created or destroyed. This statement of conservation of energy is true for which of the following laws ?
   (1) First law of thermodynamics
   (2) Second law of thermodynamics
   (3) Third law of thermodynamics
   (4) Fourth law of thermodynamics

7. The temperature at which the pure liquid and solid exist in equilibrium, for a pure crystalline solid, is called :
   (1) Eutectic point
   (2) Boiling point
   (3) Freezing point or melting point
   (4) Transition temperature

8. Which of the following liquids has a highest dielectric constant ?
   (1) Glycerine
   (2) Isopropanol
   (3) Phenol
   (4) Water

9. Number of moles of solute in 1000 g of solvent is known as :
(1) Molarity (2) Molality (3) Normality (4) Mole fraction

10. When the hydrogen ion concentration is 10 raised to power minus ten and hydroxyl ion concentration is 10 raised to power minus four, what would be pH value ?
(1) 4 (2) 10 (3) 14 (4) 20

11. Which of the following has a five membered, Nitrogen containing hetercyclic ring ?
(1) Quinoline (2) Piperidine
(3) Pyridine (4) Pyrrole

12. Which of the following is a polysaccharide ?
(1) Sucrose (2) Starch (3) Maltose (4) Rhamninose

13. A reaction in which an alkyl halide reacts with an aromatic compound in the presence of a Lewis Acid catalyst, is known as :
(1) Grignard's reaction (2) Wurtz reaction
(3) Friedel- Craft's reaction (4) Riemer Tiemann reaction

14. Addition of HBr to alkenes in the presence of peroxide is an example of which of the following reactions ?
(1) Free radical addition (2) Electrophilic addition
(3) Heterogenous hydrogenation (4) Cleavage reaction

15. What is the common name of 2,4-(isobutylphenyl) propionic acid ?
(1) Acetylsalicylic acid (2) Ibuprofen
(3) Probenecid (4) Carbidopa

16. A modification of the Gutzeit Test is the principle of limit test for which of the following :
(1) Chloride (2) Sulphate
(3) Iron (4) Arsenic

17. "Spirit of Salt" is a synonym used for which of the following :
(1) Salt solution in water (2) Concentrated Hydrochloric Acid
(3) Concentrated Nitric Acid (4) Dilute Hydrochloric Acid

18. Which of the following is an osmotic laxative ?
(1) Sorbitol (2) Magnesium sulphate
(3) Castor oil (4) Phenolphthalein

19. What is Lugol's Solution ?
(1) Strong iodine solution (2) Aqueous iodine solution
(3) Povidone iodine solution (4) Iodine tincture

20. Which of the following is used as a dental desensitizing agent ?
(1) Strontium chloride (2) Calcium phosphate
(3) Calcium carbonate (4) Vitamin K

21. A method of extraction by boiling herbal or plant material to dissolve the chemicals of the material, which may include stems, roots, bark and rhizomes, is called :
(1) Infusion (2) Maceration
(3) Decoction (4) Percolation

22. A sweetened, aromatic solution of alcohol and water containing, or used as a vehicle for, medicinal substances, is known as :
(1) Aromatic waters (2) Syrups (3) Linctus (4) Elixirs

23. Which of the following empty gelatine capsules has a largest capacity ?
(1) Size 00 (2) Size 0 (3) Size 1 (4) Size 2

24. The IVIVIC level which describes a predictive mathematical model for the relationship between the entire in vitro dissolution and release time course and the entire in vivo response time course, is called :
(1) Level A (2) Level B (3) Level C (4) Level D

25. Semisolid preparations containing one or more medicinal agents dissolved or dispersed in either a water-in-oil emulsion or an oil-in-water emulsion is called :
(1) Paste (2) Lotion
(3) Ointment (4) Creams

26. Name the primary transmitter at ANS ganglia, at the somatic neuromuscular junction, and at parasympathetic postganglionic nerve endings, which is also a primary excitatory transmitter to smooth muscle and secretory cells in the ENS :
(1) Dopamine (2) GABA
(3) Acetylcholine (4) Norepinephrine

27. Activation of which of the following receptors in bronchial smooth muscle leads to bronchdilation, which is important in the treatment of Asthma ?
(1) Beta 1 (2) Beta 2
(3) Alpha 1 (4) Alpha 2

28. Which of the following antiarrythmic drugs has "sodium channel dlockade" as the primary mechanism of action ?
(1) Proproanolol (2) Verapamil
(3) Esmolol (4) Lidocaine

29. Which of the following drugs is primarily used as an H-2 blocker ?
(1) Diphenhydramine (2) Cyclizine
(3) Chlorpheniramine (4) Cetrizine

30. At which of the following Blood alcohol concentration (BAC) will produce "impaired motor function, slurred speech and ataxia" in an nontolerant individual ?
(1) 50-100 mg/dL (2) 100-200 mg/dL
(3) 200-300 mg/dL (4) 300-400 mg/dL

31. Which of the following intravenous anesthetics has a "slow onset and recovery; flumazenil reversal available" ?
(1) Etomidate (2) Propofol
(3) Midazolam (4) Thiopental

32. Which of the following local anesthetics has a short duration of action ?
(1) Procaine (2) Tetracaine
(3) Bupivacaine (4) Ropivacaine

33. Which of the following drugs, used for movement disorders, has "inhibition of MAO-B selectively, and also inhibition of MAO-A at higher doses" as a mechanism of action ?
(1) Levodopa (2) Bromocriptine
(3) Apomorphine (4) Rasagiline

34. Which of the following drugs is an opioid antagonist ?
(1) Methadone (2) Fentanyl
(3) Codeine (4) Naloxone

35. What is the common synonym for Factor I (Blood clotting) ?
(1) Fibrinogen (2) Prothrombin
(3) Calcium (4) Christmas Factor

36. Which of the following fatty acids is a straight chain saturated acid ?
(1) Caprylic acid (2) Oleic acid
(3) Garlic (4) Chaulmoogric

37. Which of the following alcohols is a monohydric aliphatic alcohol ?
(1) Cetyl alcohol (2) Glycerol
(3) Erythritol (4) Sorbitol

38. Which of the following fixed oils has a melting point above room temperature (25 deg C) ?
(1) Almond oil (2) Castor oil
(3) Lard (4) Arachis oil

39. Which of the following is a trisaccharide ?
(1) Sucrose (2) Lactose
(3) Maltose (4) Raffinose

40. Which of the following is prepared from the pericyclic fibres of the stem of Cannabis sativa (Cannibinaceae) ?
(1) Jute (2) Flax
(3) Hemp (4) Cotton

41. The characteristics "mostly simple granules, hatchet-, wedge- or mussel-shaped. Hilum in the form of a point, eccentric, concentric striations well marked" represent which of the following starches ?
(1) Maize starch (2) Wheat starch
(3) Rice starch (4) Potato starch

42. A dried, aqueous extract prepared from the leaves and young twigs of a climbing shrub, Uncaria gambir (Rubiaceae) is called :
(1) Tolu balsam (2) Peru balsam
(3) Catechu (4) Chandan

43. Turpentine oil is obtained from
(1) Coriandrum sativum (2) Pinus spp.
(3) Menth piperita (4) Carvum carvi

44. Which of the following is a non-heterocyclic alkaloid ?
(1) Nicotine (2) Cocaine (3) Quinine (4) Ephedrine

45. Which of the following Cinchona species has "transverse cracks, very numerous, yellowish powder" ?
(1) C. succirubra (2) C. officinalis
(3) C. calisaya (4) C. legeriana

46. A technique in which a change in weight of a substance is recorded as a function of temperature or time using the balance and furnance, is called :
(1) Precipitation (2) Gravimetry
(3) DSC (4) Vapourization

47. An indirect titration method, which deals with the titration of iodine liberated in a chemical reaction, is called :
(1) Iodimetry (2) Iodometry
(3) Cerimetry (4) Permanganate titration

48. Method of determining end point in precipitation reaction, based on formation of soluble coloured compound, is called :
(1) Turbidity method (Gay Lussac) (2) Fajan's method
(3) Mohr's method (4) Volhard's method

49. The method of analysis in which the solution to be analysed is electrolysed in such a way that the graphy of current against voltage shows what is in the solution and how much is present, is called :
(1) Polarography (2) Conductometry
(3) Potentiometry (4) Amperometry

50. A spectrometer which generates multiple ions from the sample under investigation, and then separates them according to their specific m/z ratio and then records the relative abundance of each ion type, is called
(1) UV -VIS spectrometer (2) Fluorescence spectrometer
(3) FTIR spectrometer (4) Mass spectrometer

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(1) 1 2) 16 (3) 24 (4) 40

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56. Enzymes which catalyse the removal of groups from substrates by mechanisms other than hydrolysis, leaving double bonds, are commonly known as :
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(1) A DNA polymerase enzyme that transcribes single stranded RNA into DNA
(2) An enzyme which catalyses the formation of RNA from a DNA template
(3) An enzyme that synthesizes long chains of nucleic acides
(4) An enzyme that facilitates the joining of DNA strands together by catalyzing the formation of a phosphodiester bond.

59. Which of the following strains is used for industrial fermentation of Tetracycline ?
(1) S. griseus (2) S. auerofaciens
(3) Streptomyces clavuligerus (4) A. gossypii

60. Which ofthe following nucleobases is NOT found in RNA ?
(1) Adenine (2) Guanine (3) Cytosine (4) Thymine

61. Which of the following is an example of a gram negative bacteria ?
(1) Corynebacterium (2) Staphylococcus
(3) Clostridium (4) Escherichia

62. The process of reduction in the number of viable microbes, to a level not harmful to health, on living surfaces, is called :
(1) Disinfection (2) Antisepsis (3) Sterilization (4) Bacteriostasis

63. Which of the following methods of sterilization would be most suitable for the sterilization of a space craft ?
(1) Sterilization by dry heat (2) Autociaving
(3) Sterilization by ethylene oxide (4) Filtration sterilization

64. Which of the following is NOT a viral vaccine ?

(1) Polio vaccine
(2) Hepatitis vaccine
(3) Influenza vaccine
(4) Typhoid vaccine

65. In which of the following recombination process, cell contact is required ?

(1) Transformation
(2) Transduction
(3) Conjugation
(4) All of the above

66. When the cancerous change takes place in a type of marrow cell that normally goes on to form red blood cells, some other types of white cells, and platelets, the disease is called :

(1) Lymphoblastic leukemia
(2) Myeloid leukemia
(3) Polycysthemia
(4) Anemia

67. A very rare life threatening anemia, which is caused by a decrease in the bone marrow's ability to produce red blood cells, is called :

(1) Hemolytic anemia
(2) Aplastic anemia
(3) Sickle cell anemia
(4) Iron deficiency anemia

68. Which of the following drugs needs to be avoided in Parkinson's disease ?

(1) Levodopa
(2) Rasagiline
(3) Prochlorperazine
(4) Amantadine

69. Diabetes mellitus, which is characterized by loss of insulin - producing beta cells of the islets of langerhans in the pancreas, leading to insulin deficiency, is called :

(1) Type I Diabetes
(2) Type II Diabetes
(3) Gestational Diabetes
(4) Latent Autoimmune Diabetes of Adults (LADA)

70. Heliobacter pylori, a gram negative, spiral shaped bacterium, is the most common cause of non-NSAID-associated disease, commonly known as :

(1) Hypertension (2) Tuberculosis (3) Syphilis (4) Peptic Ulcer

71. What are the units of "total clearance" for a drug ?

(1) ml (2) Hr (3) ml/ hr (4) No units

72. The value of "apparent volume of distribution" of chlorquine is more than 100 L/kg. Which of the following statements is true for this drug ?
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(1) Drug is partially reabsorbed in the renal excretion
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76. Which of the following blood proteins is MOST ABUNDANT, and is responsible for ma'nta'ning the plasma osmotic pressure ?
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(1) 08 (2) 10 (3) 12 (4) 14

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80. Chemical digestion of which of the following ingredients of food starts in the mouth itself ?

(1) Proteins (2) Carbohydrates

(3) Fats (4) All of the above

81. Which of the following is the quantitative expression for estimation of the energy requirement for particle size reduction (comminution), suggesting that it is directly proportional to an increase in the surface area and inversely proportional to the product diameter perceptively ?

(1) Rittinger's Law (2) Kick's Law

(3) Bond's Law (4) Harris Law

82. Which of he following mesh number approximates most closely to a nominal aperture size of 700 microns ?

(1) 100 (2) 85 (3) 30 (4) 10

83. Which of the following filter media works on the principle of "surface filtration" ?

(1) Ceramic filters (2) Cellulose Membrane filters

(3) Sintered bed filters (4) All of the above

84. The phenomenon when the pressure exerted by the surroundings upon a liquid is equalled e pressure exerted by the vapour of the liquid; when the addition of heat results in the transformation of the liquid into its vapour, without raising the temperature, is called

(1) Evaporation (2) Boiling

(3) Condensation (4) Lyophilisation

85. Which of the following equipments for drying is MOST SUITABLE for the preservation of thermolabile and other delicate materials, viable cells and tissues, vaccines and blood Products, etc ?

(1) Compartment tray dryer (2) Drum dryer

(3) Freeze dryer (Iyophilisation) (4) Infrared dryer

86. what is the term of a patent in India, as per the Patents Act, 1970 ?

(1) 7 years (2) 14 years (3) 20 years (4) 25 years

87. What is the term of a copyright in India, as per the Coyrights Act, 1957 ?

(1) 10 years (2) 20 years

(3) Lifetime of the author (4) Lifetime of the author plus 60 years

88. Items which cover 70% of the total inventory, consumes 10% of the total expenditure of inventories and may require loose control are classified in to which of the following classes, as per the ABC method of inventory control ?

(1) A class (2) B class (3) C class (4) All of the above

89. According the Maslow's theory of motivation, which of the following needs are at the lowest level of hierarchy ?

(1) Physiological needs
(2) Safety needs
(3) Esteem needs
(4) Self actualization needs

90. Under which of the following IPRs can computer program which has technical effect, be protected in India ?

(1) Copyrights
(2) Patents
(3) Trademarks
(4) Geographical Indicators

91. List of drugs which are to be marketed under generic names only, is prescribed in which of the following Schedules ?

(1) Schedule C
(2) Schedule G
(3) Schedule W
(4) Schedule X

92. Drugs and Magic Remedies (Objectionable Advertisements) Act was passed in which year ?

(1) 1940 (2) 1948 (3) 1954 (4) 1950

93. First Central Council (Pharmacy Council of India) was constituted in which year ?

(1) 1948 (2) 1949 (3) 1952 (4) 1954

94. Which of the following qualifications hold true for the post of Food Inspector, as per the Prevention of Food Adulteration Act 1954 and Rules ?

(1) Graduate in Medicine plus one month's training
(2) Graduate in Science with Chemistry, plus three month's training
(3) Graduate in Pharmacy plus three month's training
(4) All of the above

95. Manufacture in relation to narcotic drugs orpsychotropic substances, does not include :

(1) Separation of opium, poppy straw, cocoa leaves or cannabis from their plants
(2) Refining of such drugs or substances
(3) Transformation of such drugs or substances
(4) Making of preparation of such drugs or substances

96. What is the quantity of a 3% ointment which must be added to 100 gm of a 15% ointment to get 10 % ointment ?

(1) 51.3 gm (2) 61.3gm (3) 71.3gm (4) 81.3 gm

97. An insufflations contains 5 gm menthol, 5 gm camphor, 30 gm ammonium chloride and 60 gm light magnesium carbonate. This preparation is an example of which type of incompatibility ?

(1) Physical incompatibility (2) Tolerated chemical incompatibility

(3) Adjusted chemical incompatibility (4) Therapeutic incompatibility

98. What is the generally prescribed dose of Furosemide as a diuretic ?

(1) 5 mg oral (2) 10 mg oral

(3) 20 mg oral (4) 40 mg oral

99. Finely divided solid dosage form of medicament, which are inhaled into the nostrils, for their antiseptic, decongestion or bronchodilator action, are called :

(1) Dentrifices (2) Snuffs

(3) Insufflations (4) Cachets

100. Which of the following statements is NOT TRUE for flocculated suspensions ?

(1) Particles form loose aggregates and form a network like structure

(2) Rate of sedimentation is high

(3) Sediment is difficult to redisperse

(4) Sediment does not form a hard cake

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(3) An enzyme that synthesizes long chains of nucleic acides
(4) An enzyme that facilitates the joining of DNA strands together by catalyzing the formation of a phosphodiester bond.

19. Which of the following strains is used for industrial fermentation of Tetracycline ?
(1) S. griseus (2) S. auerofaciens
(3) Streptomyces clavuligerus (4) A. gossypii

20. Which ofthe following nucleobases is NOT found in RNA ?
(1) Adenine (2) Guanine (3) Cytosine (4) Thymine

21. Which of the following intravenous anesthetics has a "slow onset and recovery; flumazenil reversal available" ?
(1) Etomidate (2) Propofol
(3) Midazolam (4) Thiopental

22. Which of the following local anesthetics has a short duration of action ?
(1) Procaine (2) Tetracaine
(3) Bupivacaine (4) Ropivacaine

23. Which of the following drugs, used for movement disorders, has "inhibition of MAO-B selectively, and also inhibition of MAO-A at higher doses" as a mechanism of action ?
(1) Levodopa (2) Bromocriptine
(3) Apomorphine (4) Rasagiline

24. Which of the following drugs is an opioid antagonist ?
(1) Methadone (2) Fentanyl
(3) Codeine (4) Naloxone

25. What is the common synonym for Factor I (Blood clotting) ?
(1) Fibrinogen (2) Prothrombin
(3) Calcium (4) Christmas Factor

26. Which of the following fatty acids is a straight chain saturated acid ?
(1) Caprylic acid (2) Oleic acid
(3) Garlic (4) Chaulmoogric

27. Which of the following alcohols is a monohydric aliphatic alcohol ?
(1) Cetyl alcohol (2) Glycerol
(3) Erythritol (4) Sorbitol

28. Which of the following fixed oils has a melting point above room temperature (25 deg C) ?
(1) Almond oil (2) Castor oil
(3) Lard (4) Arachis oil

29. Which of the following is a trisaccharide ?
(1) Sucrose (2) Lactose
(3) Maltose (4) Raffinose

30. Which of the following is prepared from the pericyclic fibres of the stem of Cannabis sativa (Cannibinaceae) ?
(1) Jute (2) Flax
(3) Hemp (4) Cotton

31. Which of the following has a five membered, Nitrogen containing hetercyclic ring ?
(1) Quinoline (2) Piperidine
(3) Pyridine (4) Pyrrole

32. Which of the following is a polysaccharide ?
(1) Sucrose (2) Starch
(3) Maltose (4) Rhamninose

33. A reaction in which an alkyl halide reacts with an aromatic compound in the presence of a Lewis Acid catalyst, is known as :
(1) Grignard's reaction (2) Wurtz reaction
(3) Friedel- Craft's reaction (4) Riemer Tiemann reaction

34. Addition of HBr to alkenes in the presence of peroxide is an example of which of the following reactions ?
(1) Free radical addition (2) Electrophilic addition
(3) Heterogenous hydrogenation (4) Cleavage reaction

35. What is the common name of 2,4-(isobutylphenyl) propionic acid ?
(1) Acetylsalicylic acid (2) Ibuprofen
(3) Probenecid (4) Carbidopa

36. A modification of the Gutzeit Test is the principle of limit test for which of the following :
(1) Chloride (2) Sulphate
(3) Iron (4) Arsenic

37. "Spirit of Salt" is a synonym used for which of the following :
(1) Salt solution in water (2) Concentrated Hydrochloric Acid
(3) Concentrated Nitric Acid (4) Dilute Hydrochloric Acid

38. Which of the following is an osmotic laxative ?
(1) Sorbitol (2) Magnesium sulphate
(3) Castor oil (4) Phenolphthalein

39. What is Lugol's Solution ?
(1) Strong iodine solution (2) Aqueous iodine solution
(3) Povidone iodine solution (4) Iodine tincture

40. Which of the following is used as a dental desensitizing agent ?
(1) Strontium chloride (2) Calcium phosphate
(3) Calcium carbonate (4) Vitamin K

41. List of drugs which are to be marketed under generic names only, is prescribed in which of the following Schedules ?
(1) Schedule C (2) Schedule G
(3) Schedule W (4) Schedule X

42. Drugs and Magic Remedies (Objectionable Advertisements) Act was passed in which year ?
(1) 1940 (2) 1948 (3) 1954 (4) 1950

43. First Central Council (Pharmacy Council of India) was constituted in which year ?
(1) 1948 (2) 1949 (3) 1952 (4) 1954

44. Which of the following qualifications hold true for the post of Food Inspector, as per the Prevention of Food Adulteration Act 1954 and Rules ?
(1) Graduate in Medicine plus one month's training
(2) Graduate in Science with Chemistry, plus three month's training
(3) Graduate in Pharmacy plus three month's training
(4) All of the above

45. Manufacture in relation to narcotic drugs orpsychotropic substances, does not include :
(1) Separation of opium, poppy straw, cocoa leaves or cannabis from their plants
(2) Refining of such drugs or substances
(3) Transformation of such drugs or substances
(4) Making of preparation of such drugs or substances

46. What is the quantity of a 3% ointment which must be added to 100 gm of a 15% ointment to get 10 % ointment ?
(1) 51.3 gm (2) 61.3gm (3) 71.3gm (4) 81.3 gm

47. An insufflations contains 5 gm menthol, 5 gm camphor, 30 gm ammonium chloride and 60 gm light magnesium carbonate. This preparation is an example of which type of incompatibility ?
(1) Physical incompatibility (2) Tolerated chemical incompatibility
(3) Adjusted chemical incompatibility (4) Therapeutic incompatibility

48. What is the generally prescribed dose of Furosemide as a diuretic ?
(1) 5 mg oral (2) 10 mg oral
(3) 20 mg oral (4) 40 mg oral

49. Finely divided solid dosage form of medicament, which are inhaled into the nostrils, for their antiseptic, decongestion or bronchodilator action, are called :
(1) Dentrifices (2) Snuffs
(3) Insufflations (4) Cachets

50. Which of the following statements is NOT TRUE for flocculated suspensions ?
(1) Particles form loose aggregates and form a network like structure
(2) Rate of sedimentation is high
(3) Sediment is difficult to redisperse
(4) Sediment does not form a hard cake

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(1) Polio vaccine (2) Hepatitis vaccine
(3) Influenza vaccine (4) Typhoid vaccine

55. In which of the following recombination process, cell contact is required ?
(1) Transformation (2) Transduction
(3) Conjugation (4) All of the above

56. When the cancerous change takes place in a type of marrow cell that normally goes on to form red blood cells, some other types of white cells, and platelets, the disease is called :
(1) Lymphoblastic leukemia (2) Myeloid leukemia
(3) Polycysthemia (4) Anemia

57. A very rare life threatening anemia, which is caused by a decrease in the bone marrow's ability to produce red blood cells, is called :
(1) Hemolytic anemia (2) Aplastic anemia
(3) Sickle cell anemia (4) Iron deficiency anemia

58. Which of the following drugs needs to be avoided in Parkinson's disease ?
(1) Levodopa (2) Rasagiline
(3) Prochlorperazine (4) Amantadine

59. Diabetes mellitus, which is characterized by loss of insulin - producing beta cells of the islets of langerhans in the pancreas, leading to insulin deficiency, is called :
(1) Type I Diabetes
(2) Type II Diabetes
(3) Gestational Diabetes
(4) Latent Autoimmune Diabetes of Adults (LADA)

60. Heliobacter pylori, a gram negative, spiral shaped bacterium, is the most common cause of non-NSAID-associated disease, commonly known as :
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(1) Precipitation (2) Gravimetry (3) DSC (4) Vapourization

77. An indirect titration method, which deals with the titration of iodine liberated in a chemical reaction, is called :
(1) Iodimetry (2) Iodometry
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(4) Norepinephrine

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(1) Very soluble
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Total No. of Printed Pages : 13

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C

SET-Z

M.Phil./Ph.D./URS-EE-2020

SUBJECT : Pharmaceutical Science

Sr. No. 10027

Time : 1¼ Hours | Max. Marks : **100** | Total Questions : **100**

Roll No. (in figures)_____ (in words) _____

Name _____ Father's Name _____

Mother's Name _____ Date of Examination _____

(Signature of the Candidate) (Signature of the Invigilator)

SEAL

CANDIDATES MUST READ THE FOLLOWING INFORMATION/INSTRUCTIONS BEFORE STARTING THE QUESTION PAPER.

1. ***All questions are compulsory.***
2. The candidates ***must return*** the question booklet as well as OMR Answer-Sheet to the Invigilator concerned before leaving the Examination Hall, failing which a case of use of unfair-means / mis-behaviour will be registered against him / her, in addition to lodging of an FIR with the police. Further the answer-sheet of such a candidate will not be evaluated.
3. Keeping in view the transparency of the examination system, carbonless OMR Sheet is provided to the candidate so that a copy of OMR Sheet may be kept by the candidate.
4. Question Booklet along with answer key of all the A, B, C & D code will be got uploaded on the University website after the conduct of Entrance Examination. In case there is any discrepancy in the Question Booklet/Answer Key, the same may be brought to the notice of the Controller of Examination in writing/through E.Mail within 24 hours of uploading the same on the University Website. Thereafter, no complaint in any case, will be considered.
5. The candidate ***must not*** do any rough work or writing in the OMR Answer-Sheet. Rough work, if any, may be done in the question booklet itself. Answers ***must not*** be ticked in the question booklet.
6. ***There will be no negative marking. Each correct answer will be awarded one full mark. Cutting, erasing, overwriting and more than one answer in OMR Answer-Sheet will be treated as incorrect answer.***
7. Use only **Black** or **Blue Ball Point Pen** of good quality in the OMR Answer-Sheet.
8. *Before answering the questions, the candidates should ensure that they have been supplied correct and complete booklet. Complaints, if any, regarding misprinting etc. will not be entertained* **30** *minutes after starting of the examination.*

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44. Which of the following is NOT a viral vaccine ?
(1) Polio vaccine
(2) Hepatitis vaccine
(3) Influenza vaccine
(4) Typhoid vaccine

45. In which of the following recombination process, cell contact is required ?
(1) Transformation
(2) Transduction
(3) Conjugation
(4) All of the above

46. When the cancerous change takes place in a type of marrow cell that normally goes on to form red blood cells, some other types of white cells, and platelets, the disease is called :
(1) Lymphoblastic leukemia
(2) Myeloid leukemia
(3) Polycysthemia
(4) Anemia

47. A very rare life threatening anemia, which is caused by a decrease in the bone marrow's ability to produce red blood cells, is called :
(1) Hemolytic anemia
(2) Aplastic anemia
(3) Sickle cell anemia
(4) Iron deficiency anemia

48. Which of the following drugs needs to be avoided in Parkinson's disease ?
(1) Levodopa
(2) Rasagiline
(3) Prochlorperazine
(4) Amantadine

49. Diabetes mellitus, which is characterized by loss of insulin - producing beta cells of the islets of langerhans in the pancreas, leading to insulin deficiency, is called :
(1) Type I Diabetes
(2) Type II Diabetes
(3) Gestational Diabetes
(4) Latent Autoimmune Diabetes of Adults (LADA)

50. Heliobacter pylori, a gram negative, spiral shaped bacterium, is the most common cause of non-NSAID-associated disease, commonly known as :

(1) Hypertension (2) Tuberculosis (3) Syphilis (4) Peptic Ulcer

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89. What is Lugol's Solution ?

(1) Strong iodine solution
(2) Aqueous iodine solution
(3) Povidone iodine solution
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(1) Strontium chloride
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(3) Calcium carbonate
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Total No. of Printed Pages : 13

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D

SET-Z

M.Phil./Ph.D./URS-EE-2020

SUBJECT : Pharmaceutical Science

10076

Sr. No. .....

Time : 1¼ Hours | Max. Marks : 100 | Total Questions : 100

Roll No. (in figures)_____ (in words) _____

Name _____ Father's Name_____

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(Signature of the Candidate) (Signature of the Invigilator)

CANDIDATES MUST READ THE FOLLOWING INFORMATION/INSTRUCTIONS BEFORE STARTING THE QUESTION PAPER.

1. ***All questions are compulsory.***
2. The candidates ***must return*** the question booklet as well as OMR Answer-Sheet to the Invigilator concerned before leaving the Examination Hall, failing which a case of use of unfair-means / mis-behaviour will be registered against him / her, in addition to lodging of an FIR with the police. Further the answer-sheet of such a candidate will not be evaluated.
3. Keeping in view the transparency of the examination system, carbonless OMR Sheet is provided to the candidate so that a copy of OMR Sheet may be kept by the candidate.
4. Question Booklet along with answer key of all the A, B, C & D code will be got uploaded on the University website after the conduct of Entrance Examination. In case there is any discrepancy in the Question Booklet/Answer Key, the same may be brought to the notice of the Controller of Examination in writing/through E.Mail within 24 hours of uploading the same on the University Website. Thereafter, no complaint in any case, will be considered.
5. The candidate ***must not*** do any rough work or writing in the OMR Answer-Sheet. Rough work, if any, may be done in the question booklet itself. Answers ***must not*** be ticked in the question booklet.
6. ***There will be no negative marking. Each correct answer will be awarded one full mark. Cutting, erasing, overwriting and more than one answer in OMR Answer-Sheet will be treated as incorrect answer.***
7. Use only **Black** or **Blue Ball Point Pen** of good quality in the OMR Answer-Sheet.
8. *Before answering the questions, the candidates should ensure that they have been supplied correct and complete booklet. Complaints, if any, regarding misprinting etc. will not be entertained* **30** *minutes after starting of the examination.*

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(1) Infusion
(2) Maceration
(3) Decoction
(4) Percolation

52. A sweetened, aromatic solution of alcohol and water containing, or used as a vehicle for, medicinal substances, is known as :

(1) Aromatic waters (2) Syrups (3) Linctus (4) Elixirs

53. Which of the following empty gelatine capsules has a largest capacity ?

(1) Size 00
(2) Size 0
(3) Size 1
(4) Size 2

54. The IVIVIC level which describes a predictive mathematical model for the relationship between the entire in vitro dissolution and release time course and the entire in vivo response time course, is called :

(1) Level A
(2) Level B
(3) Level C
(4) Level D

55. Semisolid preparations containing one or more medicinal agents dissolved or dispersed in either a water-in-oil emulsion or an oil-in-water emulsion is called :

(1) Paste
(2) Lotion
(3) Ointment
(4) Creams

56. Name the primary transmitter at ANS ganglia, at the somatic neuromuscular junction, and at parasympathetic postganglionic nerve endings, which is also a primary excitatory transmitter to smooth muscle and secretory cells in the ENS :

(1) Dopamine
(2) GABA
(3) Acetylcholine
(4) Norepinephrine

57. Activation of which of the following receptors in bronchial smooth muscle leads to bronchdilation, which is important in the treatment of Asthma ?

(1) Beta 1
(2) Beta 2
(3) Alpha 1
(4) Alpha 2

58. Which of the following antiarrythmic drugs has "sodium channel dlockade" as the primary mechanism of action ?

(1) Proproanolol
(2) Verapamil
(3) Esmolol
(4) Lidocaine

59. Which of the following drugs is primarily used as an H-2 blocker ?

(1) Diphenhydramine
(2) Cyclizine
(3) Chlorpheniramine
(4) Cetrizine

60. At which of the following Blood alcohol concentration (BAC) will produce "impaired motor function, slurred speech and ataxia" in an nontolerant individual ?

(1) 50-100 mg/dL
(2) 100-200 mg/dL
(3) 200-300 mg/dL
(4) 300-400 mg/dL

61. The characteristics "mostly simple granules, hatchet-, wedge- or mussel-shaped. Hilum in the form of a point, eccentric, concentric striations well marked" represent which of the following starches ?

(1) Maize starch
(2) Wheat starch
(3) Rice starch
(4) Potato starch

62. A dried, aqueous extract prepared from the leaves and young twigs of a climbing shrub, Uncaria gambir (Rubiaceae) is called :

(1) Tolu balsam
(2) Peru balsam
(3) Catechu
(4) Chandan

63. Turpentine oil is obtained from
(1) Coriandrum sativum
(2) Pinus spp.
(3) Menth piperita
(4) Carvum carvi

64. Which of the following is a non-heterocyclic alkaloid ?
(1) Nicotine (2) Cocaine (3) Quinine (4) Ephedrine

65. Which of the following Cinchona species has "transverse cracks, very numerous, yellowish powder" ?
(1) C. succirubra
(2) C. officinalis
(3) C. calisaya
(4) C. legeriana

66. A technique in which a change in weight of a substance is recorded as a function of temperature or time using the balance and furnance, is called :
(1) Precipitation
(2) Gravimetry
(3) DSC
(4) Vapourization

67. An indirect titration method, which deals with the titration of iodine liberated in a chemical reaction, is called :
(1) Iodimetry
(2) Iodometry
(3) Cerimetry
(4) Permanganate titration

68. Method of determining end point in precipitation reaction, based on formation of soluble coloured compound, is called :
(1) Turbidity method (Gay Lussac)
(2) Fajan's method
(3) Mohr's method
(4) Volhard's method

69. The method of analysis in which the solution to be analysed is electrolysed in such a way that the graphy of current against voltage shows what is in the solution and how much is present, is called :
(1) Polarography
(2) Conductometry
(3) Potentiometry
(4) Amperometry

70. A spectrometer which generates multiple ions from the sample under investigation, and then separates them according to their specific m/z ratio and then records the relative abundance of each ion type, is called
(1) UV -VIS spectrometer
(2) Fluorescence spectrometer
(3) FTIR spectrometer
(4) Mass spectrometer

71. Which of the following is an example of a gram negative bacteria ?
(1) Corynebacterium
(2) Staphylococcus
(3) Clostridium
(4) Escherichia

72. The process of reduction in the number of viable microbes, to a level not harmful to health, on living surfaces, is called :
(1) Disinfection (2) Antisepsis (3) Sterilization (4) Bacteriostasis

73. Which of the following methods of sterilization would be most suitable for the sterilization of a space craft ?
(1) Sterilization by dry heat
(2) Autociaving
(3) Sterilization by ethylene oxide
(4) Filtration sterilization

74. Which of the following is NOT a viral vaccine ?
(1) Polio vaccine
(2) Hepatitis vaccine
(3) Influenza vaccine
(4) Typhoid vaccine

75. In which of the following recombination process, cell contact is required ?
(1) Transformation
(2) Transduction
(3) Conjugation
(4) All of the above

76. When the cancerous change takes place in a type of marrow cell that normally goes on to form red blood cells, some other types of white cells, and platelets, the disease is called :
(1) Lymphoblastic leukemia
(2) Myeloid leukemia
(3) Polycysthemia
(4) Anemia

77. A very rare life threatening anemia, which is caused by a decrease in the bone marrow's ability to produce red blood cells, is called :
(1) Hemolytic anemia
(2) Aplastic anemia
(3) Sickle cell anemia
(4) Iron deficiency anemia

78. Which of the following drugs needs to be avoided in Parkinson's disease ?
(1) Levodopa
(2) Rasagiline
(3) Prochlorperazine
(4) Amantadine

79. Diabetes mellitus, which is characterized by loss of insulin - producing beta cells of the islets of langerhans in the pancreas, leading to insulin deficiency, is called :

(1) Type I Diabetes

(2) Type II Diabetes

(3) Gestational Diabetes

(4) Latent Autoimmune Diabetes of Adults (LADA)

80. Heliobacter pylori, a gram negative, spiral shaped bacterium, is the most common cause of non-NSAID-associated disease, commonly known as :

(1) Hypertension (2) Tuberculosis (3) Syphilis (4) Peptic Ulcer

81. When 1 to 10 parts of solvent are required to dissolve 1 part of the solute, as per USP, the solubility is defined as :

(1) Very soluble (2) Freely soluble

(3) Soluble (4) Sparingly soluble

82. When the speed of the reaction depends on the concentration of A and B with each term raised to the first power, the rate of decomposition of A is equal to the rate of decomposition of B, and both are proportional to the product of the concentration of the reactants. This statement refers to which of the following :

(1) Zero order reactions (2) Apparent zero order reactions

(3) First order reactions (4) Second order reactions

83. The Hixson - Crowell Cube Root Law is applicable to the dissolution of which of the following ?

(1) Tablets (2) Capsules

(3) Granules (4) Powders

84. Which ofthe following surfactants has a highest HLB value ?

(1) Span 80 (2) Span 20

(3) Tween 80 (4) Triethanolamine oleate

85. What is the particle size range of colloidal dispersions ?

(1) Less than 1 nm

(2) 1 nm to 0.5 microns

(3) Greater than 0.5 microns

(4) 100 microns and above

86. Although energy can be transformed from one kind into another, it cannot be created or destroyed. This statement of conservation of energy is true for which of the following laws ?

(1) First law of thermodynamics
(2) Second law of thermodynamics
(3) Third law of thermodynamics
(4) Fourth law of thermodynamics

87. The temperature at which the pure liquid and solid exist in equilibrium, for a pure crystalline solid, is called :

(1) Eutectic point
(2) Boiling point
(3) Freezing point or melting point
(4) Transition temperature

88. Which of the following liquids has a highest dielectric constant ?

(1) Glycerine (2) Isopropanol (3) Phenol (4) Water

89. Number of moles of solute in 1000 g of solvent is known as :

(1) Molarity (2) Molality (3) Normality (4) Mole fraction

90. When the hydrogen ion concentration is 10 raised to power minus ten and hydroxyl ion concentration is 10 raised to power minus four, what would be pH value ?

(1) 4 (2) 10 (3) 14 (4) 20

91. Which of the following is the quantitative expression for estimation of the energy requirement for particle size reduction (comminution), suggesting that it is directly proportional to an increase in the surface area and inversely proportional to the product diameter perceptively ?

(1) Rittinger's Law
(2) Kick's Law
(3) Bond's Law
(4) Harris Law

92. Which of he following mesh number approximates most closely to a nominal aperture size of 700 microns ?

(1) 100 (2) 85 (3) 30 (4) 10

93. Which of the following filter media works on the principle of "surface filtration" ?

(1) Ceramic filters
(2) Cellulose Membrane filters
(3) Sintered bed filters
(4) All of the above

94. The phenomenon when the pressure exerted by the surroundings upon a liquid is equalled e pressure exerted by the vapour of the liquid; when the addition of heat results in the transformation of the liquid into its vapour, without raising the temperature, is called

(1) Evaporation (2) Boiling (3) Condensation (4) Lyophilisation

95. Which of the following equipments for drying is MOST SUITABLE for the preservation of thermolabile and other delicate materials, viable cells and tissues, vaccines and blood Products, etc ?

(1) Compartment tray dryer (2) Drum dryer

(3) Freeze dryer (Iyophilisation) (4) Infrared dryer

96. what is the term of a patent in India, as per the Patents Act, 1970 ?

(1) 7 years (2) 14 years (3) 20 years (4) 25 years

97. What is the term of a copyright in India, as per the Coyrights Act, 1957 ?

(1) 10 years (2) 20 years

(3) Lifetime of the author (4) Lifetime of the author plus 60 years

98. Items which cover 70% of the total inventory, consumes 10% of the total expenditure of inventories and may require loose control are classified in to which of the following classes, as per the ABC method of inventory control ?

(1) A class (2) B class (3) C class (4) All of the above

99. According the Maslow's theory of motivation, which of the following needs are at the lowest level of hierarchy ?

(1) Physiological needs (2) Safety needs

(3) Esteem needs (4) Self actualization needs

100. Under which of the following IPRs can computer program which has technical effect, be protected in India ?

(1) Copyrights (2) Patents

(3) Trademarks (4) Geographical Indicators

Pharmaceutical Science Ph.D/URS Entrance Exam.

Time 12:45pm to 02:00pm

Answer Key

Set-A

Sr. No	Answer	Sr. No	Answer	Sr. No	Answer	Sr. No	Answer
1	2	26	3	51	3	76	2
2	4	27	2	52	1	77	3
3	4	28	4	53	2	78	3
4	3	29	4	54	4	79	1
5	2	30	2	55	3	80	2
6	1	31	3	56	3	81	1
7	3	32	1	57	1	82	4
8	4	33	4	58	1	83	2
9	2	34	4	59	2	84	2
10	2	35	1	60	4	85	3
11	4	36	1	61	4	86	3
12	2	37	1	62	2	87	4
13	3	38	3	63	3	88	3
14	1	39	4	64	4	89	1
15	2	40	3	65	3	90	2
16	4	41	4	66	2	91	3
17	2	42	3	67	2	92	3
18	1	43	2	68	3	93	2
19	2	44	4	69	1	94	4
20	1	45	2	70	4	95	1
21	3	46	2	71	3	96	3
22	4	47	2	72	2	97	1
23	1	48	4	73	4	98	4
24	1	49	1	74	2	99	2
25	4	50	4	75	3	100	3

Pharmaceutical Science Ph.D/URS Entrance Exam.

Time 12:45pm to 02:00pm

Answer Key

Set-B

Sr. No	Answer	Sr. No	Answer	Sr. No	Answer	Sr. No	Answer
1	3	26	1	51	4	76	2
2	2	27	1	52	2	77	2
3	4	28	3	53	3	78	4
4	2	29	4	54	4	79	1
5	3	30	3	55	3	80	4
6	2	31	4	56	2	81	3
7	3	32	2	57	2	82	4
8	3	33	3	58	3	83	1
9	1	34	1	59	1	84	1
10	2	35	2	60	4	85	4
11	3	36	4	61	1	86	3
12	1	37	2	62	4	87	2
13	2	38	1	63	2	88	4
14	4	39	2	64	2	89	4
15	3	40	1	65	3	90	2
16	3	41	3	66	3	91	2
17	1	42	3	67	4	92	4
18	1	43	2	68	3	93	4
19	2	44	4	69	1	94	3
20	4	45	1	70	2	95	2
21	3	46	3	71	4	96	1
22	1	47	1	72	3	97	3
23	4	48	4	73	2	98	4
24	4	49	2	74	4	99	2
25	1	50	3	75	2	100	2

Pharmaceutical Science Ph.D/URS Entrance Exam.

Time 12:45pm to 02:00pm

Answer Key

Set-C

Sr. No	Answer	Sr. No	Answer	Sr. No	Answer	Sr. No	Answer
1	4	26	1	51	3	76	3
2	3	27	3	52	1	77	1
3	2	28	4	53	4	78	4
4	4	29	2	54	4	79	2
5	2	30	2	55	1	80	3
6	2	31	1	56	1	81	4
7	2	32	4	57	1	82	2
8	4	33	2	58	3	83	3
9	1	34	2	59	4	84	1
10	4	35	3	60	3	85	2
11	3	36	3	61	3	86	4
12	4	37	4	62	2	87	2
13	1	38	3	63	4	88	1
14	1	39	1	64	2	89	2
15	4	40	2	65	3	90	1
16	3	41	4	66	2	91	3
17	2	42	2	67	3	92	1
18	4	43	3	68	3	93	2
19	4	44	4	69	1	94	4
20	2	45	3	70	2	95	3
21	2	46	2	71	3	96	3
22	4	47	2	72	3	97	1
23	4	48	3	73	2	98	1
24	3	49	1	74	4	99	2
25	2	50	4	75	1	100	4

Pharmaceutical Science Ph.D/URS Entrance Exam.

Time 12:45pm to 02:00pm

Answer Key

Set-D

Sr. No	Answer	Sr. No	Answer	Sr. No	Answer	Sr. No	Answer
1	4	26	2	51	3	76	2
2	2	27	3	52	4	77	2
3	3	28	3	53	1	78	3
4	1	29	1	54	1	79	1
5	2	30	2	55	4	80	4
6	4	31	3	56	3	81	2
7	2	32	1	57	2	82	4
8	1	33	2	58	4	83	4
9	2	34	4	59	4	84	3
10	1	35	3	60	2	85	2
11	3	36	3	61	4	86	1
12	3	37	1	62	3	87	3
13	2	38	1	63	2	88	4
14	4	39	2	64	4	89	2
15	1	40	4	65	2	90	2
16	3	41	3	66	2	91	1
17	1	42	1	67	2	92	4
18	4	43	4	68	4	93	2
19	2	44	4	69	1	94	2
20	3	45	1	70	4	95	3
21	3	46	1	71	4	96	3
22	2	47	1	72	2	97	4
23	4	48	3	73	3	98	3
24	2	49	4	74	4	99	1
25	3	50	3	75	3	100	2