

NIPER JEE 2008

1. _____ % of benzyl alcohol is used as a preservative:

- A) 0.1
- B) 0.5
- C) 1
- D) 5

2. Cetyl ether of Polyethylene glycol is known as _____.

- A) Myrj 56
- B) Brij 56
- C) Cetomacrogol
- D) All of the above

3. Which amongst the following is used as a detector in a spectrophotometer?

- A) Golay cell
- B) PMT
- C) Faraday cup
- D) All

4. Living organisms are detected by _____.

- A) Phase contrast microscopy
- B) Hot stage microscopy
- C) Electron microscopy
- D) None

5. Which of the following modifications of acetylcholine results in a selective agonist on muscarinic receptors?

- A) Replacement of one N-methyl with N-ethyl
- B) Replacement of the esters with a carbamate
- C) Addition of alpha methyl on ethylene bridge
- D) Increase the ethylene bridge by one atom

6.

5	4
20	9

A) 26.

7	4
24	11

B) 4

9	4
?	13

C) 28

D) 11

7. Betaine is an intermediate in _____ reaction/rearrangement:

A) Wittig

B) Favorskii

C) Claisen

D) Hoffman

E) Curtius

8. The process of change of R- configuration to S is known as:

A) Chirality

B) Walden inversion

C) Chiral reaction

D) Steric hindrance

9. Tetracycline may be inactivated by epimerization:

A) True

B) False

C) Cannot say

D) Depends upon pH

10. What is the pH of 0.005N HCl?

A) 2.3

B) 3.2

C) 5

D) 1

11. What is the advantage of L-DOPA over Dopamine?

A) Less toxic

B) More soluble

- C) More lipophilic
- D) All

12. The anti-HIV drug approved by USFDA in 2008 as a non-nucleoside reverse transcriptase inhibitor is:

- A) Certolizumab
- B) Tipranavir
- C) Etravirine
- D) Tenofovir

13. Northern blot is used for the separation of:

- A) mRNA
- B) DNA
- C) Protein
- D) Protein-DNA interaction

14. Specific M1 receptor antagonist is ———.

- A) Atropine
- B) Hyoscine
- C) Ipratropium
- D) Pirenzepine

15. What is the function of microvillus?

- A) Absorption
- B) Secretion
- C) Cellular adhesion
- D) All

16. SEC is widely used for ———.

- A) Purification and analysis of synthetic and biological polymers
- B) Purification and analysis of synthetic drugs
- C) Purification and analysis of synthetic herbal products
- D) All of the above

17. SDS-PAGE is mainly used for ———.

- A) Separation of DNA
- B) Separation of proteins
- C) Both
- D) None

18. Auxochromes: ———.

- A) Increase ϵ_{\max}
- B) Decrease ϵ_{\max}
- C) Increase λ_{\max}
- D) Decrease the λ_{\max}
- E) Alter ϵ_{\max} and λ_{\max}

19. Isoprenoid unit is synthesized from ———.

- A) Shikimic acid pathway
- B) Acetate pathway
- C) Mevalonic acid pathway
- D) All

20. Which type of USP dissolution apparatuses are used for oral tablet testing?

- A) Type I and II
- B) Type I and III
- C) Type II and III
- D) Type I and III

21. What is the condition for accelerated stability testing in India?

- A) $30^{\circ}\text{C} \pm 2^{\circ}\text{C} / 75\% \text{ RH} \pm 5\% \text{ RH}$
- B) $40^{\circ}\text{C} \pm 2^{\circ}\text{C} / 75\% \text{ RH} \pm 5\% \text{ RH}$
- C) $40^{\circ}\text{C} \pm 2^{\circ}\text{C} / 65\% \text{ RH} \pm 5\% \text{ RH}$
- D) $30^{\circ}\text{C} \pm 2^{\circ}\text{C} / 75\% \text{ RH} \pm 5\% \text{ RH}$

22. Serpins are the inhibitors of ———.

- A) Proteases
- B) Integrases
- C) Polymerases
- D) Reverse transcriptases

23. Chemically nujol is _____.

- A) Geminal diol
- B) Polyhydric alcohol
- C) Liquid paraffin hydrocarbons
- D) Terpene

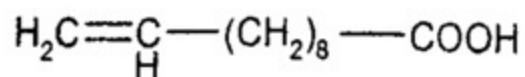
24. $A + B = 100$, $A - B = 24$, so which is the larger number?

- A) $A = 62$
- B) $A = 38$
- C) $B = 62$
- D) $B = 38$

25. Which of the following is a carbonic anhydrase inhibitor?

- A) Furosemide
- B) Hydrochlorothiazide
- C) Acetazolamide
- D) Lithium

26. What is the name of the following compound?



- A) Oleic acid
- B) Undecylenic acid
- C) Arachidic acid
- D) Stearic acid

27. Phenolphthalein shows color change at _____ pH:

- A) 6–8

- B) 8–10
- C) 10–12
- D) 12–14

28. Which of the following drug assays involves back titration method?

- A) Paracetamol
- B) Acetazolamide
- C) Nifedipin
- D) N-acetyl salicylic acid

29. Which of the following is a protogenic solvent?

- A) Benzene
- B) Perchloric acid
- C) Sulfuric acid
- D) Acetic acid

30. % yield = _____.

- A) Practical yield / Theoretical yield
- B) Theoretical yield / Practical yield
- C) $(\text{Practical yield} / \text{Theoretical yield}) \times 100$
- D) $(\text{Theoretical yield} / \text{Practical yield}) \times 100$

31. What is the use of UV circular dichroism spectroscopy?

- A) Investigation of conformation of secondary structure of proteins
- B) Peptide bond determination
- C) Structure elucidation of synthetic compound
- D) Determination of unsaturation in protein

32. Central dogma of molecular biology is _____.

- A) DNA → RNA → PROTEIN
- B) Replication → Transcription → Translation
- C) Information cannot be transferred back from protein
- D) All

33. Which of the following polymers have greater mucoadhesive property?

- A) SCMC
- B) Chitosan
- C) Tragacanth
- D) Pectin

34. Metoclopramide as an antiemetic acts by _____.

- A) 5-HT₄, 5-HT₃ agonist and D₂ antagonist
- B) D₂, 5-HT₃ agonist and 5-HT₄ antagonist
- C) 5-HT₄, 5-HT₃ antagonist and D₂ agonist
- D) D₂, 5-HT₃ antagonist and 5-HT₄ agonist

35. Why can't mannitol be given by oral route?

- A) It is non-absorbable
- B) It causes gastric irritation
- C) Gets degraded in acidic environment
- D) It can change the osmotic environment of GIT

36. Where is the Central Rice Research Institute located? <https://www.pyqonline.com>

- A) Bangalore
- B) Delhi
- C) Kerala
- D) Orissa

37. Camptothecins act by _____.

- A) Free radical generation
- B) Inhibition of tubulin polymerization
- C) Inhibiting topoisomerase 1
- D) Enhancing tubulin polymerization

38. Mannitol is _____.

- A) High efficacy diuretic

- B) Medium efficacy diuretic
- C) Adjunctive diuretics
- D) None of the above

39. Which of the following has the maximum caloric value?

- A) Carbohydrate
- B) Protein
- C) Fat
- D) Fibers

40. Which of the following amino acids is responsible for disulfide linkage in proteins?

- A) Proline
- B) Lysine
- C) Cysteine
- D) Leucine

41. Type-1 dissolution test apparatus as per USP is _____.

- A) Basket
- B) Paddle
- C) Flow through cell
- D) Reciprocating

42. Chromophore is _____.

- A) Saturated group with non-bonded electrons responsible for electronic absorption
- B) Covalently unsaturated group responsible for electronic absorption
- C) Saturated group with non-bonded electrons responsible for molecular vibration
- D) Covalently unsaturated group responsible for molecular vibration

43. Poise is a unit for _____.

- A) Compressibility
- B) Pressure
- C) Flow of powder
- D) Viscosity

E) Kinematic viscosity

44. Helical length of DNA is _____.

A) 34 nm

B) 10 nm

C) 34 Å

D) 10 Å

45. Which of the following spectroscopic techniques is used to determine the absolute structure of a drug molecule?

A) UV

B) IR

C) NMR

D) MS

E) XRD

46. Wave number is expressed in _____.

A) cm^{-1}

B) ppm

C) Hz

D) nm

47. Arrange the following processes in the correct sequence for tablet processing after oral intake:

A) Dissolution, disintegration, deaggregation, absorption

B) Disintegration, dissolution, deaggregation, absorption

C) Disintegration, deaggregation, dissolution, absorption

D) Dissolution, deaggregation, disintegration, absorption

48. Which of the following is the letter code for tryptophan?

A) F

B) Y

C) W

D) P

49. The range of IR absorption for carboxylic acid is _____ cm^{-1} :

- A) 1810
- B) 1720
- C) 1770
- D) 1680

50. Which of the following is used to represent the 3D structure of organic compounds on paper?

- A) Fischer formula
- B) Chain formula
- C) Newman formula
- D) Ball and Stick formula

51. Stereoisomers which are not mirror images of each other are called as _____.

- A) Epimer
- B) Enantiomer
- C) Anomer
- D) Diastereomer

52. The red color of hemoglobin is due to _____.

- A) Protoporphyrin IX
- B) Iron
- C) Both A and B
- D) Globin

53. Which of the following amino acids is cationic?

- A) Lysine
- B) Arginine
- C) A and B both
- D) Histidine

54. _____ is the dominant antibody responsible for humoral sensitivity response:

- A) IgM

- B) IgE
- C) IgG
- D) IgA

55. How many amino acids are present in insulin?

- A) 21
- B) 30
- C) 51
- D) 78

56. Significant loss of immunity in AIDS is due to

- A) Reduction in cluster determinant antigen 4
- B) Reduction in C-lymphocytes
- C) Reduction in B-lymphocytes
- D) Reduction in RBC

57. Which of the following is not true for type 2 diabetes?

- A) It is also called non-insulin-dependent diabetes mellitus.
- B) Mainly occurs in childhood between 10–12 years of age
- C) This is due to a decrease in insulin receptors on target cells
- D) Obesity acts as a diabetogenic factor

58. Ephedrine has how many chiral centers?

- A) 2
- B) 3
- C) 1
- D) 0

59. Which compound has more deshielded protons?

- A) $\text{CH}_3\text{-F}$
- B) $\text{CH}_3\text{-Cl}$
- C) $\text{CH}_3\text{-Br}$
- D) $\text{CH}_3\text{-NO}_2$

60. Diagnostic agent for myasthenia gravis is:

- A) Donepezil
- B) Edrophonium
- C) Atropine
- D) Pancuronium

61. A solution was shaken with high stress; soon it converted to a thick gel. The solution was _____. <https://www.pyqonline.com>

- A) Pseudoplastic
- B) Plastic
- C) Dilatant
- D) Newtonian

62. Synonym of Picrorrhiza is _____.

- A) Bachnag
- B) Monkshood
- C) Kutki
- D) None

63. Deadly nightshade is a synonym for _____.

- A) Datura
- B) Hyoscyamus
- C) Vinca
- D) Belladonna

64. Muscarinic receptor agonist is:

- A) Bethanochol
- B) Telenzepine
- C) Nicotine
- D) Tubocurarine

65. Diuretic is given to a patient suffering from glaucoma, epilepsy is _____.

- A) Phenytoin
- B) Acetazolamide
- C) Chlorothiazide
- D) Bumetanide

66. Gynaecomastia is an adverse effect of _____.

- A) Cimetidine
- B) Ranitidine
- C) Omeprazole
- D) Pantoprazole

67. Longest-acting insulin preparation is _____.

- A) Insulin aspart
- B) Insulin lispro
- C) Insulin zinc suspension
- D) Protamine zinc insulin

68. Which of the following is true regarding Vanishing creams?

- A) An emulsion of water and certain fats, usually beeswax
- B) It gives a cooling effect due to the evaporation of menthol
- C) It contains potassium, ammonium, or sodium stearate
- D) O/W emulsion converted to W/O emulsion after application

69. According to USP, the minimum disintegration time for uncoated tablets is _____ minutes:

- A) 3
- B) 5
- C) 10
- D) 30

70. MOA of Ethylene oxide for sterilization is _____.

- A) Free radical generation
- B) Alkylation of essential metabolite
- C) Enzyme inhibition

D) None of the above

71. _____ type of glass is known as non-parenteral glass:

- A) I
- B) II
- C) III
- D) IV

72. Which of the following does not cause enzyme induction?

- A) Sulfonamide
- B) Chloral hydrate
- C) Rifampicin
- D) Phenobarbitone

73. Isoelectric point of type A gelatin is _____.

- A) 4.7
- B) 9.1
- C) 7.4
- D) 1.9

74. Which of the following is the correct temperature and time relationship for an autoclave?

- A) 121°C for 1 hour
- B) 121°C for 30 minutes
- C) 121°C for 15 minutes
- D) 121°C for 10 minutes

75. Most effective ratio of methyl paraben and propyl paraben is _____.

- A) 1:1
- B) 1:4
- C) 1:10
- D) 10:1

76. NIST standard reference materials for gravity sedimentation is _____.

- A) Talc
- B) Silicon nitride
- C) Diamond
- D) Quartz

77. Ostwald viscometer is used to determine _____.

- A) Absolute viscosity
- B) Relative viscosity
- C) A and B both
- D) None of the above

78. Correct sequence for emulsion stability is _____.

- A) Micro emulsion > o/w > w/o
- B) Micro emulsion < o/w < w/o
- C) Micro emulsion > w/o > o/w
- D) Micro emulsion < w/o < o/w

79. Van't Hoff equation is used to calculate _____.

- A) Temperature
- B) Equilibrium constant
- C) Standard enthalpy
- D) Gas constant

80. A nasal spray containing adenovirus carrying a functional human CFTR gene is used to treat cystic fibrosis. This is an example of _____ gene therapy.

- A) in situ
- B) in vivo
- C) ex vivo
- D) vaccine

81. Interferons are produced by _____.

- A) Leukocytes
- B) Fibroblasts

- C) Macrophages
- D) All of the above

82. Van der Waals radius of H is ____.

- A) 1.20
- B) 1.70
- C) 1.55
- D) 2.15

83. MHC is a ____.

- A) Molecule that gives the signal to start the immune response against the presented antigen.
- B) Molecule that gives the signal to start the production of enzyme by feedback mechanism.
- C) Molecule that gives the signal to start Protein synthesis.
- D) Molecule that gives the signal to start cell proliferation.

84. Osmium tetroxide with alkenes gives ____.

- A) Dienes
- B) Glycol
- C) Carbonyl compound
- D) Geminal diol

85. Brine shrimp bioassay is used to determine ____.

- A) Neuronal toxicity of plant product
- B) Cardiac toxicity of plant product
- C) Photo toxicity of plant product
- D) Cytotoxicity of plant product

86. Fractional crystallisation is used to separate ____.

- A) Diastereomers
- B) Optical isomers
- C) Atrope isomer
- D) D and L isomer

87. Catalyst used in benzoin condensation is ____.

- A) Cyanide anion
- B) Peracid
- C) Pt
- D) Hydrotalcites

88. Intermediate in Friedel Kraft reaction is ____.

- A) Carbanion
- B) Carbocation
- C) Free radical
- D) AlCl_3

89. Element used in Wittig reaction is ____.

- A) Mg
- B) Al
- C) P
- D) Pt

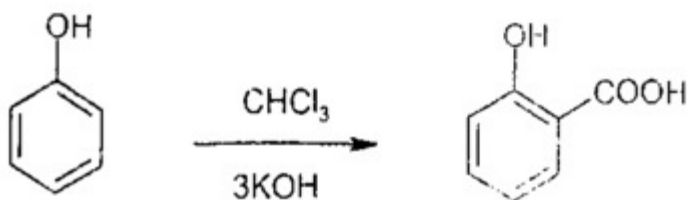
90. A graph between current and active ions in solution keeping voltage constant is plotted in ____.

- A) Polarography
- B) Conductometry
- C) Amperometry
- D) Potentiometry

91. Which of the following is having adaptogenic activity?

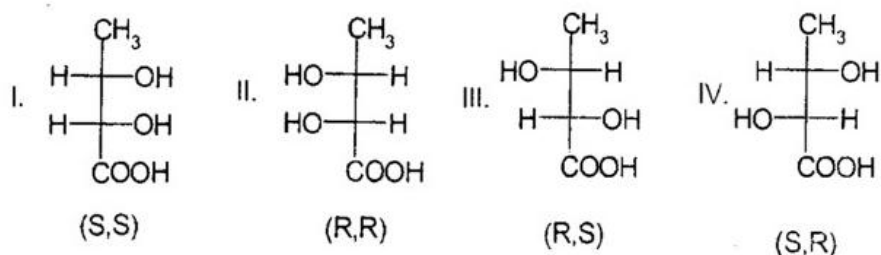
- A) Shatavari
- B) Brahmi
- C) Ksharas
- D) Garlic

92. Identify the reaction:



- A) Curtius
- B) Lossen rearrangement
- C) Schmidt reaction
- D) Reimer-Tiemann

93. Which of the following is false?



- A) I and II are distereomers
- B) I and III are distereomers
- C) II and III are distereomers
- D) I and IV are distereomers

94. What is the effect of parasympathomimetic on gastric secretion?

- A) Inhibition
- B) Activation
- C) Decrease
- D) Activation followed by inhibition

95. Which of the following is not true about neostigmine?

- A) Synthetic quaternary ammonium compound with rapid onset of action
- B) More polar than physostigmine hence causes BBB penetration
- C) It has a direct action on nicotinic and muscarinic receptors
- D) It has powerful curare anti-action

96. HLB of w/o emulsifier is ———.

- A) 1–3
- B) 3–8
- C) 7–9
- D) 8–16

97. Which of the following viruses is responsible for causing AIDS?

- A) Reovirus
- B) aemavirus
- C) Rhabdovirus
- D) Retrovirus

98. Which of the following is a biochemical function of hemoglobin?

- A) Transport of O₂ from lungs to tissue
- B) Transport of CO₂ from tissue to lungs
- C) A and B both
- D) Transport of iron

99. Which of the following causes serine hydrolysis?

- A) Trypsin
- B) Pepsin
- C) Secretin
- D) Cholecystokinin

100. Mammalian cell gene expression is done by ———.

- A) Replication
- B) Transcription
- C) Translation
- D) Elongation

NIPER JEE 2008 ANSWER KEY

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