

NIPER JEE 2009

1. Heparin is ———.

- A) Protein
- B) Polysaccharide
- C) Lipid
- D) Amino acid

2. Colchicines acts by ———.

- A) Inhibiting DNA synthesis
- B) Inhibiting RNA synthesis
- C) Superoxide dismutase
- D) A and B

3. How many members are required to form a society?

- A) 2
- B) 5
- C) 7
- D) No minimum limit

4. What is the molarity of pure water?

- A) 55.5
- B) 18
- C) 1
- D) None of the above

5. RAMACHANDRAN PLOT is used for the determination of the structure of ———.

- A) Amino acid
- B) Protein
- C) Carbohydrates
- D) Enzyme-substrate interaction

6. AVECIL is a brand name of ———.

- A) Starch
- B) MCC
- C) PEG
- D) Calcium carbonate

7. Which of the following is INCORRECT about Cocoa Butter?

- A) Pale yellow, usually solid at room temperature
- B) Soluble in water
- C) Shows the phenomenon of polymorphism
- D) None of the above

8. The capsule with the smallest size is denoted by number ——.

- A) 0
- B) 1
- C) 2
- D) 4
- E) 5

9. RBI was established on ——.

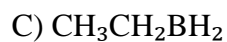
- A) April 1, 1934
- B) April 1, 1935
- C) April 1, 1937
- D) April 1, 1949

10. Which of the following is a water-soluble lubricant?

- A) Lactose
- B) Sodium chloride
- C) PEG
- D) Sorbitol

11. Which of the following are organometallic reagents?

- A) $\text{CH}_3\text{CH}_2\text{ONa}$
- B) $\text{CH}_3\text{CH}_2\text{Br}$



12. Synonym of INFREQUENTLY:

A) Isolated

B) Occasional

C) Scattered

D) All of the above

13. Antonym of ONEROUS:

A) Burdensome

B) Arduous

C) Tedious

D) Easy

14. Light year is a unit of ———.

A) Time

B) Distance

C) Mass

D) Intensity of light

15. _____ show the peak in FTIR spectrum at wave number $2200\text{--}2100\text{ cm}^{-1}$.

A) Alkenes

B) Acetylene

C) Nitrate

D) Aromatic overtone

16. How many hydrogen bonds could be formed by one molecule of water?

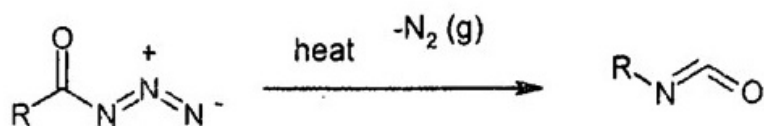
A) 1

B) 2

C) 3

D) 4

17. Identify the rearrangement:



- A) Cope
- B) Favorskii
- C) Claisen
- D) Hoffman
- E) Curtius

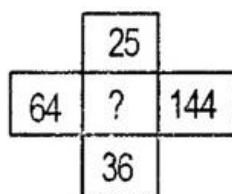
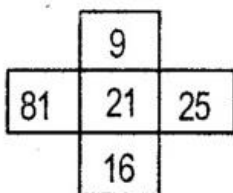
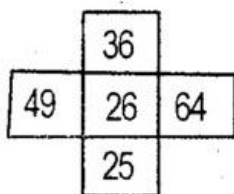
18. The common name for pentanedioic acid is:

- A) Pimelic acid
- B) Adipic acid
- C) Oxalic acid
- D) Glutaric acid

19. Identify the photosensitive active pharmaceutical:

- A) Ciprofloxacin
- B) Nifedipin
- C) Both A and B
- D) Simvastatin

20. A set of figures carrying certain numbers is given. Assuming that the numbers in each figure follow a similar pattern, the missing number is _____.



- A) 31
- B) 25
- C) 23
- D) 19

21. When is a statutory meeting held in a company — from the date at which the company is entitled to commence business?

- A) Within a period of not less than one month nor more than six months
- B) Within a period of not less than six months nor more than twelve months
- C) Both
- D) Depends upon financial situation

22. Identify non-ionic surfactant:

- A) Sodium lauryl sulfate
- B) Spans
- C) Benzalkonium chloride
- D) Lecithin

23. _____ is the example of non-irritating purgative:

- A) CMC
- B) Anthraquinone
- C) Triphenylmethane
- D) Ricinolic acid

24. Purgative action of phenolphthalein is due to _____.

- A) Phthalic acid
- B) Phenol
- C) Triphenylmethane
- D) None of the above

25. Podophyllin is used for _____.

- A) Ovarian cancer
- B) Constipation
- C) Irritable bowel syndrome (IBS)
- D) Diarrhea

26. If a drug is highly protein-bound, then it shows _____.

- A) More efficient diffusion into cell membranes

- B) High potency
- C) Low potency
- D) Low biological half-life

27. Gossypol shows which kind of isomerism?

- A) Optical isomerism
- B) Configurational isomerism
- C) Atropisomers
- D) R and S isomerism

28. Ephedrine exists in how many stereoisomeric forms?

- A) 1
- B) 2
- C) 3
- D) 4

29. Chemically betaine is ———.

- A) Cation
- B) Anion
- C) Zwitterions
- D) None of the above

30. Which of the following H₂ receptor antagonists has the highest affinity for CYP450?

- A) Nizatidine
- B) Ranitidine
- C) Cimetidine
- D) Famotidine

31. Which of the following drugs has an effect on the conduction of the heart?

- A) Nifedipine
- B) Verapamil
- C) Atenolol
- D) All of the above

32. During fermentation of penicillin, the pH is first adjusted to 2. Why?

- A) For maximum growth of *Penicillium chrysogenum*
- B) For maximum yield
- C) Penicillin exists as an undissociated acid so it is soluble in organic solvents
- D) To remove the impurity

33. _____ is used as a precipitating agent during penicillin recovery in penicillin fermentation:

- A) Potassium acetate
- B) Potassium hydroxide
- C) Silver nitrate
- D) EDTA
- E) Sodium hydroxide

34. Delta value of ETHYLENE = 2.3–2.7 ppm, whereas that of ACETYLENE is = _____.

- A) 2.7–3.2 ppm
- B) 6–9 ppm
- C) 4.5–6.5 ppm
- D) 1.1–3.0 ppm

35. The correct description for polarity of acetone compared with methanol is _____.

- A) Acetone > methanol
- B) Acetone < methanol
- C) Acetone = methanol
- D) Both are non-polar

36. Amino acid which is described as an imino acid _____.

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

37. When UV light falls on a molecule, it causes _____.

- A) Excitation of bonds
- B) Excitation of nucleases
- C) Excitation of molecule
- D) Excitation of electrons

38. Why is multidrug treatment given in TB?

- A) To avoid resistance
- B) To minimize side effects
- C) To reduce the duration of therapy
- D) To reduce the cost of therapy

39. Far IR region lies in the range of ———.

- A) 0.8–2.5 μm
- B) 2.5–15 μm
- C) 15–200 μm
- D) 200–400 μm

40. Allosteric binding means ———.

- A) Binding of the substrate at the active site of the enzyme
- B) Binding to a site other than the active binding site on the same enzyme
- C) Binding to the enzyme-substrate complex
- D) Binding to an endogenous substrate

<https://www.pyqonline.com>

41. Drug with high affinity but no efficacy is also called as: ———.

- A) Agonist
- B) Partial agonist
- C) Antagonist
- D) Partial antagonist

42. What is the function of reverse transcriptase?

- A) Transcribes DNA from RNA
- B) Transcribes single-stranded RNA into double-stranded DNA
- C) Transcribes RNA from DNA

D) Transcribes single-stranded DNA into double-stranded RNA

43. The pharmacophore of anticancer taxol derivatives is _____.

A) Monocyclic

B) Bicyclic

C) Tricyclic

D) Tetracyclic

44. What is the IUPAC name of mycolic acid?

A) 2, 3-dialkyl-2-hydroxypropionic acid

B) 2, 2-dialkyl-2-hydroxypropionic acid

C) 2, 3-dialkyl-3-hydroxypropionic acid

D) 2, 2-dialkyl-3-hydroxypropionic acid

45. Reaction at chiral carbon through SN2 mechanism causes _____.

A) Retention of configuration

B) Inversion of configuration

C) Racemization

D) No change

46. Haemophilus bacteria belong to which family _____.

A) Rhizobiaceae

B) Enterobacteriaceae

C) Pasteurellaceae

D) Streptococcaceae

47. Extra pyramidal reactions are the side effect of _____.

A) Anticonvulsants

B) Anti-parkinsonians

C) Anti-alzheimer's

D) Antihistaminics

48. Ropinirole is used as _____.

- A) Anti-convulsant
- B) Anti-parkinson
- C) Anti-alzheimer's
- D) Anti histamines
- E) Antipsychotics

49. Which software is used in 3D-QSAR ———.

- A) Linux
- B) CHEMIC
- C) CHEMDRAW
- D) CoMFA

50. MOA of trimetazidine, an anti-ischemic agent, is ———.

- A) Inhibits anaerobic glycolysis and fatty acid metabolism, thus allowing only aerobic glycolysis.
- B) Inhibits mitochondrial 3-ketoacyl coenzyme A thiolase, an enzyme involved in beta-oxidation.
- C) shifting ATP production with less oxygen consumption mechanism
- D) all of the above

51. Which of the following is not given through IV administration?

- A) Sesame oil
- B) Peanut oil
- C) Methanol
- D) NaCl

52. Glutathione is ———.

- A) A tripeptide of cysteine and glutamate and a detoxifier
- B) A non-essential amino acid, acts as an antioxidant
- C) Thiol-containing vitamin mainly used as an antioxidant in formulations
- D) A and B both

53. P in QSAR equation stands for ———.

- A) Permeability
- B) Partition coefficient

C) Porosity

D) Purity

54. Ionization means ———.

1. Converting an atom or molecule into an ion.

2. Adding or removing charged particles such as electrons or other ions.

3. Splitting into smaller particles, ions, or radicals, usually in a reversible manner.

4. Process of attraction and association of molecules of a solvent with molecules or ions of a solute.

A) 1 and 2

B) 1 and 3

C) 1 and 4

D) All

55. Polystyrene is synthesized from ———.

A) Glycolic acid

B) Lactic acid

C) Polyethylene terephthalate (PET)

D) Caprolic acid

56. Alkaline phosphatase test is done for milk to test ———.

A) Liver function test

B) Enzymatic degradation of the milk

C) Cheese production

D) Pasteurization

57. What is the other name of Penicillin acylase?

A) Penicillin amidase

B) Benzyl penicillin amidohydrolase

C) A and B both

D) β -lactamase

58. Tolvaptan is ———.

A) Competitive arginine vasopressin receptor 2 agonist

- B) Competitive arginine vasopressin receptor 2 antagonist
- C) Noncompetitive arginine vasopressin receptor 2 agonist
- D) Noncompetitive arginine vasopressin receptor 2 antagonist

59. Who has the authority to print a one rupee currency note?

- A) Government of India
- B) RBI
- C) Indian Bank
- D) Swiss Bank

60. When was RBI nationalized?

- A) 1st January 1938
- B) 1st January 1949
- C) 15 August 1949
- D) 26 January 1949

61. Nobel prize for HIV virus detection was awarded to _____.

- A) Harald zur Hausen
- B) Françoise Barré-Sinoussi
- C) Luc Montagnier
- D) B and C both

62. The oil-to-water partition coefficient of a substance gives us an idea about its?

- A) Lipophilicity
- B) Hydrophobicity
- C) Both
- D) None

63. Which of the following is true about Anandamide?

- A) It is N-arachidonylethanolamine (AEA)
- B) Endogenous cannabinoid neurotransmitter
- C) Involved in functions of the immune system
- D) All of the above

64. Endotheline is _____.

- A) Vasoconstricting peptides
- B) Endothelial cells of blood vessels
- C) Neurotransmitters
- D) Protein

65. The first planning commission of India was set up on:

- A) 15 March 1938
- B) 15 March 1950
- C) 26 January 1949
- D) 15 August 1950

66. One of the following methods is not used for the determination of pKa:

- A) Sirius Potentiometric Method
- B) Yesuda Shedlovsky Experiment
- C) Shake Flask Method
- D) UV Spectrophotometer
- E) HPLC

67. What does Bredt's rule state?

- A) SN2 reactions always produce inversion of configuration
- B) 3° carbocation is more stable than 2°
- C) Symmetric compounds do not have dipole movements
- D) Double bond cannot be placed at the bridgehead of a bridged ring system

68. Histone deacetylase inhibitors can be used as _____.

- A) Antidiabetic
- B) Antihypertensive
- C) Antiallergic
- D) Antidepressant

69. HLB of o/w emulsifier is _____.

- A) 1–3
- B) 3–6
- C) 7–9
- D) 8–18

70. How many members are required to form a society?

- A) 2
- B) 5
- C) 7
- D) No minimum limit

71. Aliskiren is ———.

- A) ACE inhibitor
- B) Renin inhibitor
- C) Renin antagonist
- D) Aldosterone antagonist

72. Penicillin amidase enzyme ———.

I. Converts penicillin into 6-APA in alkaline conditions

II. In acidic conditions, it is used to synthesize penicillin from 6-APA

- A) I is true, II is false
- B) I is false, II is true
- C) I and II are true
- D) I and II are false

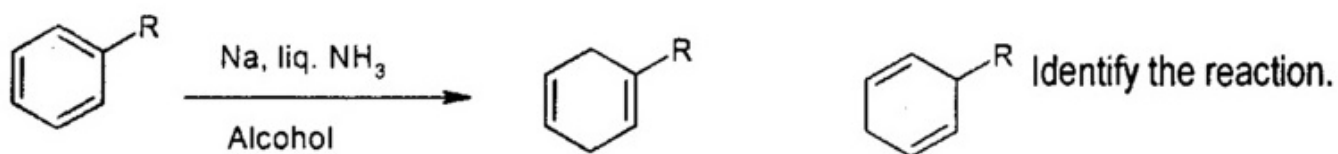
73. Which of the following is false regarding clinical trials? <https://www.pyqonline.com>

- A) Phase 0: Micro dosing is directly given to a patient without any preclinical testing.
- B) Phase 1: done on 20-50 healthy volunteers for estimation of safety and tolerability of drug.
- C) Phase 2: controlled clinical trials. Done on up to 1000 population of patients.
- D) Phase 3: expanded controlled or uncontrolled clinical trials. Done on upto 3000 to 10000 population of patients.
- E) None of the above

74. Which of the following reactions is used to synthesize isoquinoline?

- A) Bechamp
- B) Benkeser
- C) Birch
- D) Bisler Napieralski

75.



- A) Bechamp reduction
- B) Benkeser reduction
- C) Birch reduction
- D) Wolff-Kishner reduction

76. Rota rod apparatus is used in the study of _____.

- A) Anticonvulsant
- B) Anti-anxiety
- C) Muscle relaxant
- D) Antidepressants

77. Catalepsy means _____.

- A) Loss of consciousness with rigidity of muscles that keeps limbs in a fixed condition
- B) Chronic attack of seizures due to electrical imbalance in the brain
- C) Loss of consciousness after tonic-clonic seizures
- D) None of the above

78. GHOST peak in chromatography is due to _____.

- A) Solvent
- B) Column packing
- C) Temperature variation
- D) Impurity

79. Alzheimer disease is caused by _____.

- A) Increase in dopamine level in a certain part of the brain
- B) B-amyloid and tau protein level increased in the brain
- C) Increase in acetylcholine level in the brain
- D) Decrease in dopamine level in a certain part of the brain

80. The RNA strand is 1st reverse transcribed into its complementary DNA, followed by amplification of the resulting DNA using PCR. This technique is known as:

- A) RNA-PCR
- B) RNA-RT-PCR
- C) RT-PCR
- D) RT-DNA-PCR

81. Which of the following is false?

- A) Correlation: Determines the association between two or more variables
- B) Regression: It describes the dependence of a variable on an independent variable
- C) ANOVA: Analyzing data whose objective is to compare two or more group means
- D) T-test: It is the probability of rejecting the true null hypothesis

82. Normality of concentrated HCl is approximately _____.

- A) 11.7N
- B) 17N
- C) 35N
- D) 71N

83. SMON syndrome is related to _____.

- A) Metronidazole
- B) Diloxanide
- C) Quiniodochlor
- D) Tetracycline

84. Trehalose is _____.

- A) Lyoprotectant
- B) Disintegrate
- C) Swelling agent
- D) Diluents

85. Cycloaddition occurs in _____ reaction:

- A) Diels-Alder
- B) Favorskii
- C) Claisen
- D) Hoffman
- E) Curtius

86. Biphenyl shows which kind of isomerism?

- A) Optical isomerism
- B) Configurational isomerism
- C) Atropisomers
- D) R and S isomerism

87. DSC belongs to which kind of analytical method?

- A) Spectroscopy
- B) Thermal
- C) Hyphenated
- D) Chromatography

88. Which of the following is true regarding immunoglobulin?

- A) It contains 2 light chains
- B) It contains 2 heavy chains
- C) It contains disulfide bonds
- D) All

89. Detector used in IR spectroscopy is:

- A) Thermocouples
- B) Geiger-Müller counter

C) PMT

D) Flame ionization detector

90. Formula for angle of repose is ———.

A) $\tan \theta = r/h$

B) $\tan \theta = h/r$

C) $\tan^{-1} \theta = r/h$

D) $\tan^{-1} \theta = h/r$

91. Omeprazole acts by ———.

A) Inhibits GABA reuptake into nerve endings

B) Ach reuptake inhibition

C) Inhibits H-K ATPase pump

D) Inhibits Na-K ATPase pump

92. Muscarinic antagonist used in PD is:

A) Amantadine

B) Benztropine

C) Pergolide

D) Diphenhydramine

93. Steroidal receptor is ———.

A) Ligand-gated ion channel

B) Tyrosine kinase

C) GPCR

D) Nuclear type

94. Which of the following is used for vascular disorders?

A) Ginkgo biloba

B) Silymarin

C) Cantharides

D) Ammi

95. Iodine value is used for ————.

- A) To determine the number of double bonds present in unsaturated fatty acids
- B) To determine the number of double bonds present in saturated fatty acids
- C) To determine the number of acidic groups present in unsaturated fatty acids
- D) To determine the number of acidic groups present in saturated fatty acids

96. Digitalis acts by ————.

- A) Inhibits GABA reuptake into nerve endings
- B) Ach reuptake inhibition
- C) Inhibits H-K ATPase pump
- D) Inhibits Na-K ATPase pump

97. Causative organism for Syphilis is ————.

- A) *G. lamblia*
- B) *Plasmodium*
- C) *Treponema pallidum*
- D) *Trypanosoma brucei*

98. What is the hybridization state of a carbanion?

- A) sp^3
- B) sp^2
- C) sp
- D) Non-hybridized

99. Material exhibiting plastic flow is known as ————.

- A) Shear thinner
- B) Shear thickener
- C) Bingham body
- D) Thixotropic

100. Ziegler-Natta catalyst is formed from ————.

- A) Titanium oxide and diethyl aluminum
- B) Platinum oxide and tri ethyl aluminum
- C) Titanium oxide and diethyl aluminum
- D) Titanium chloride and tri ethyl aluminum

NIPER JEE 2009 ANSWER KEY

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