

**NIPER-JEE 2004**

1. Which of the following is related to osmotic pressure?

- A) Fick's law
- B) Gibbs-Donnan equation
- C) Pascal law
- D) Jacobus Henricus van't Hoff equation

2. Joint stock company is managed by \_\_\_\_\_.

- A) Elected committee
- B) One or two members
- C) Elected board of directors
- D) Owner

3. Acrylamide/dimethyl diallyl ammonium chloride copolymer is used as

- A) Conditioner
- B) Hair softener
- C) Surfactant in shampoo
- D) Detergent

4. Molar extinction coefficient depends upon \_\_\_\_\_.

- A) Path length
- B) Wavelength
- C) Concentration of solute
- D) All of the above

5. Assuming the same molecular weight and carbon content, arrange the following compound classes in the expected order of increasing pK<sub>a</sub> (lower acidity): sulfonamide, alkene, alcohol, and amide.

- A) (low pK<sub>a</sub>) sulfonamide < alcohol < amide < alkene (high pK<sub>a</sub>)
- B) (low pK<sub>a</sub>) alcohol < sulfonamide < amide < alkene (high pK<sub>a</sub>)
- C) (low pK<sub>a</sub>) sulfonamide < amide < alcohol < alkene (high pK<sub>a</sub>)
- D) (low pK<sub>a</sub>) sulfonamide < alcohol < alkene < amide (high pK<sub>a</sub>)

6. Tachyphylaxis refers to which of the following?

- A) Responsiveness increased rapidly after administration of a drug
- B) Responsiveness decreased rapidly after administration of a drug
- C) Responsiveness increased rapidly after maintenance of a drug (hypersensitive)
- D) Responsiveness decreased rapidly after maintenance of a drug (desensitized)

7. Substituent inductive and field effects:

- A) Are proportional to their proximity to the functional group
- B) are related to the size of the group
- C) Are unrelated to proximity to the functional group
- D) both A and B

8. Which of the following is directly titrated with acid?

- A) Aminophyllin
- B) Phenytoin
- C) Sulphynpyrazone
- D) Phenobarbitone

9. India plans a manned mission to the moon by —

- A) 2020
- B) 2025
- C) 2030
- D) 2012

10. Material used for packaging during Accelerated stability studies is \_\_\_\_\_

- A) Open containers
- B) Packaging similar to proposed packaging
- C) The containers convenient for sampling
- D) Any of the above

11. NABARD is \_\_\_\_\_

- A) Board
- B) Bank

- C) Bureau
- D) Department

12. Streptokinase is obtained from \_\_\_\_\_

- A) Streptobacillus
- B) Streptomyces
- C) Streptococci
- D) All of the above

13. Tween 40 is \_\_\_\_\_

- A) Polyoxyethylene (20) sorbitan monolaurate
- B) Polyoxyethylene (20) sorbitan monostearate
- C) Polyoxyethylene (20) sorbitan monooleate
- D) Polyoxyethylene (20) sorbitan monopalmitate

14. Which of the following is true about Cephalin? <https://www.pyqonline.com>

- A) Chemically it is Phosphatidylethanolamine
- B) Principal constituent in bacteria
- C) In human physiology it is found in nervous tissue
- D) All of the above

15. Anthocyanidins possess \_\_\_\_\_

- A) Flavylium (2-phenylchromenylium) ion skeleton
- B) 2,3-dihydro-2-phenylchromen-4-one
- C) 2-phenylchromen-4-one
- D) Flavan-3,4-diol

16. Right to privacy as a Fundamental Right is implicit in the:

- A) Right to Freedom
- B) Right to Personal Liberty
- C) Right to Equality
- D) Right against Exploitation

17. Aflatoxins are naturally occurring mycotoxins that are produced by \_\_\_\_\_

- A) *Bixa orellana*
- B) *Aspergillus flavus*
- C) *Cola nitida*
- D) *Karenia brevis*

18. Which of the following compounds would have the highest boiling point?

- A)  $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_3$
- B)  $\text{CH}_3\text{NH}_2$
- C)  $\text{CH}_3\text{OH}$
- D)  $\text{CH}_2\text{F}_2$

19. What is m/z ratio for butyrophenone according to Mac Lafferty arrangement?

- A) 120
- B) 106
- C) Both
- D) None

20. DOT in the treatment of Tuberculosis stands for \_\_\_\_\_

- A) Directly Observed Therapy
- B) Department OF TB treatment recommendation
- C) Daily observation of TB patient
- D) Department of TB irradiation program

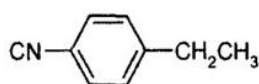
21. Earth Day is observed on \_\_\_\_.

- A) April 22
- B) April 17
- C) April 30
- D) April 24

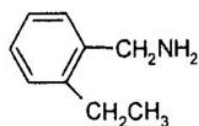
22. Provide a structure that is consistent with the data below.  $\text{C}_9\text{H}_9\text{N}$

IR ( $\text{cm}^{-1}$ ): 3050, 2950, 2240, 1630

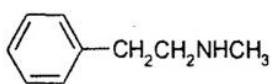
$^1\text{H}$  NMR ( $\delta$ ): 7.5 (2H, d), 7.1 (2H, d), 2.3 (2H, q), 0.9 (3H, t)



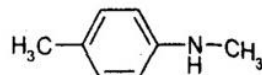
A)



B)



C)



D)

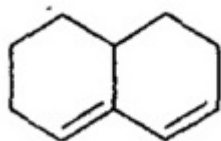
23. ANVISA is a regulatory body of \_\_\_\_\_

- A) U.S.A
- B) Japan
- C) Brazil
- D) Portugal

24. Action of thiopental sodium is inhibited by which drug?

- A) Picrotoxin
- B) Bicuculline
- C) Both A and B
- D) Paracetamol

25. Why does the diene shown below fail to undergo a Diels-Alder reaction with even the most reactive dienophiles?



- A) The diene cannot achieve the necessary s-cis conformation.
- B) This is not a diene.
- C) It is not monocyclic.
- D) It is a planar molecule.

26. Find out the missing number: 24:15::63:?

- A) 56
- B) 38
- C) 48
- D) 28

27. How many significant numbers are there in 28.0?

- A) 1
- B) 2
- C) 3
- D) None of the above

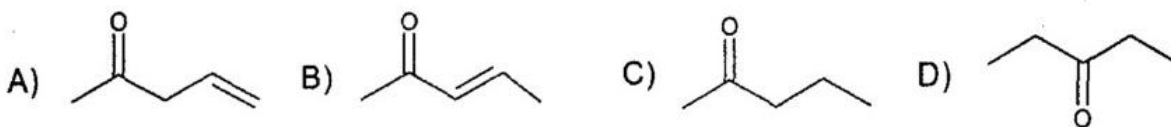
28. Share premium is \_\_\_\_\_.

- A) Capital receipt
- B) Revenue receipt
- C) Both A&B
- D) None of these

29. MALDI is related with \_\_\_\_\_.

- A) Mass spectroscopy
- B) Soft ionisation technique
- C) Protein and peptide study
- D) All of the above

30. Which of the following compounds will have its carbonyl absorbance (C=O) appear at the lowest frequency?



31. In which of following registration is legally compulsory?

- A) Sole proprietorship
- B) Partnership
- C) Joint stock committee
- D) Co-operative undertaking

32. Promius Pharma is owned by \_\_\_\_\_.

- A) Piramal Health Care
- B) Reddy's Laboratory

- C) Cipla
- D) Wockhardt

33. \_\_\_\_\_ % of shares should be held by a company in another company so as to become subsidiary.

- A) More than 50
- B) More than 40
- C) More than 30
- D) More than 20

34. Bloch and Purcell won Nobel prize of 1952 for their contribution in \_\_\_\_\_

- A) IR
- B) NMR
- C) DSC
- D) Fourier transmission

35. Ethyl-acetoacetate is prepared from ethyl acetate by the \_\_\_\_\_

- A) Benzoin Condensation
- B) Aldol condensation
- C) Claisen Condensation
- D) Dieckmann condensation

36. What  $^{13}\text{C}$  NMR decoupling technique provides information about the number of hydrogens attached to each carbon?

- A) Off-resonance
- B) Broadband
- C) Chemical shift
- D) j-value

37. Bosentan is \_\_\_\_\_.

- A) Serotonin uptake inhibitor
- B) Endothelin receptor antagonist
- C) Leukotrine modifier
- D) Calcium sensitizer

38. Bohr's effect is related to \_\_\_\_\_ .

- A) Lipids
- B) Plasma proteins
- C) Haemoglobin
- D) Vitamins

39. Plackett-Burman design is \_\_\_\_\_

- A) Computer aided design
- B) Drug design tool
- C) Type of experimental design
- D) Type of HPLC column design

40. Corex a cough formulation is a product of \_\_\_\_\_

- A) Pfizer
- B) Novartis
- C) GSK
- D) Cipla

41. Biochemical target in pharmaceutical lead discovery can be \_\_\_\_\_

- A) Enzymes
- B) Receptor
- C) Ion channels
- D) All of these

42. In which phase micro dosing is directly given to patient without pre-clinical testing?

- A) 0 Phase
- B) I Phase
- C) II Phase
- D) III Phase

43. In Michaelis-Menten equation  $V_{\max}$  is measure of \_\_\_\_\_

- A) Substrate affinity

- B) Coenzyme activity
- C) Catalytic efficiency
- D) Cofactor affinity

44. Which of the following route is used for BCG vaccine administration?

- A) Subcutaneous
- B) Intradermal
- C) Transdermal
- D) Oral

45. Where the Indian Institute of Toxicological Research is located?

- A) Kanpur
- B) Izzatnagar
- C) Allahabad
- D) Lucknow

46. The amino acid alanine in our body has \_\_\_\_\_ configuration. <https://www.pyqonline.com>

- A) S
- B) R
- C) both A and B
- D) None of these

47. Which one of the following fatty acid is biosynthesised by human body?

- A) Lauric acid
- B) Oleic acid
- C) Linoleic acid
- D) Linolenic acid

48. Rault's law is related with \_\_\_\_\_

- A) Osmotic pressure
- B) Vapour pressure
- C) Atmospheric pressure
- D) All

49. N-allyl derivative of dihydrohydroxymorphine is \_\_\_\_\_.

- A) Naloxone
- B) Thebaine
- C) Nalorphine
- D) Naltrexone

50. Which of the following compounds will show two spikes at the -N-H stretching?

- A) A primary amine
- B) A tertiary amine
- C) A secondary amine
- D) All of these

51. GABA<sub>B</sub> agonist is \_\_\_\_\_

- A) Baclofen
- B) Pergolide
- C) Bicuculline
- D) Benzodiazepine

52. The following drug only acts as arterial vasodilator \_\_\_\_\_

- A) Hydralazine
- B) Sodium nitroprusside
- C) Diazoxide
- D) Minoxidil

53. Which of the following species contain highest amount of quinine?

- A) *C. calisaya*
- B) *C. officinalis*
- C) *C. ledgeriana*
- D) *C. succirubra*

54. N-acetyl glucosamine and N-acetyl muramic acid are major cell wall components of \_\_\_\_\_.

- A) Gram positive bacteria

- B) Gram negative bacteria
- C) Mycobacteria
- D) Spirochetes

55. Solubility of gelatin capsule is decreased by \_\_\_\_\_.

- A) Fumaric acid
- B) Formalin
- C) Titanium oxide
- D) All of the above

56. In Roche friabilator, plastic chamber revolves at speed \_\_\_\_\_.

- A) 25 rpm
- B) 50 rpm
- C) 15 rpm
- D) 30 rpm

57. Diffusivity of a solute is affected by \_\_\_\_\_.

- A) Temperature
- B) Pressure
- C) Chemical nature
- D) All of these

58. \_\_\_\_\_ has the highest number of U.S. FDA-approved manufacturing facilities outside the United States.

- A) Brazil
- B) China
- C) India
- D) Philippines

59. What is action of Digitalis?

- A) Anti-emetic
- B) Analgesic
- C) Increase force of contraction of heart

D) Negative ionotropic effect

60. Capping in tablets mainly due to

A) Less upper punch pressure

B) Poor flowability of granules

C) Proper formulation design

D) Entrapment of air in tablet during compression

61. A condition that is characterised by loss of consciousness with rigidity of muscles that keeps limbs in fixed positions

A) Schizophrenia

B) Parkinsonism

C) Sedation

D) Catalepsy

62. Psychrometric chart is related to \_\_\_\_\_.

A) Osmotic pressure

B) Humidity

C) Solubility

D) Evaporation

63. Chemical asbestoses is \_\_\_\_\_.

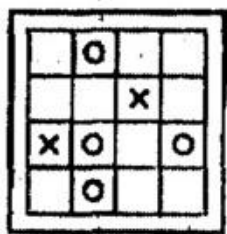
A) Silica

B) Cellulose

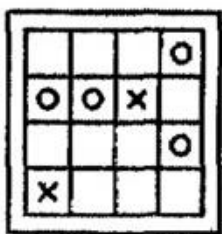
C) Alumino silicate

D) Silico tungstate

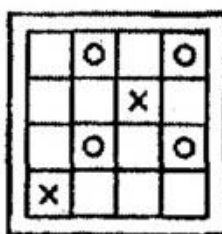
64. One of the figure is different. Identify.



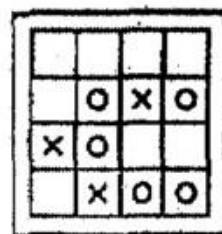
A)



B)



C)



D)

65. Oral pharmaceutical aerosols involve the use of all propellants except \_\_\_\_\_.

- A) Trichloromonofluoromethane
- B) Dichlorodifluoromethane
- C) Dichlorotetrafluoromethane
- D) Isobutane

66. Bloom strength of gelatin capsule is directly proportional to \_\_\_\_\_.

- A) Molecular weight
- B) Molecular chain length
- C) Solubility of gelatin
- D) Weak forces

67. Which one is dimensionless quantity?

- A) Porosity
- B) Tortuosity
- C) Both A and B
- D) None of these

68. Ghost peak in chromatography generally arises due to \_\_\_\_\_.

- A) Septum leaching effect
- B) Mobile phase
- C) Gradient system
- D) Pump system

69. Lipinski's 'rule of five' predicts \_\_\_\_\_.

- A) Drug like character

- B) Oral bioavailability
- C) Ability to cross BBB
- D) All of the above

70. Schedule 'S' as per the Drugs and Cosmetics Act deals with \_\_\_\_\_.

- A) Standards for cosmetics
- B) Biological and special products
- C) Life period of drugs
- D) GMP requirement

71. One of the following dominantly contain mucilage identity

- A) Isapgghol
- B) Cascara
- C) Liquorice
- D) Ajwan

72. Which of the following is related with *Eugenia caryophyllus*?

- A) Calcium oxalate prisms are absent
- B) Trichomes are absent
- C) Starch absent
- D) All of these

73. Craig plot is used in \_\_\_\_\_.

- A) Drug designing
- B) Protein structure determination
- C) Nucleic acid structure determination
- D) Carbohydrate structure determination

74. What is antonym of obstrude?

- A) Obstinate
- B) Rigid
- C) Soft
- D) Pardon

75. Centrally and peripherally emesis is caused by \_\_\_\_\_.

- A)  $\text{CuSO}_4$
- B) Digitalis
- C) Apomorphine
- D) Domperidone

76. In maltose two glucose units are linked as \_\_\_\_\_.

- A)  $1\alpha - 4\alpha$
- B)  $1\alpha - 1\alpha$
- C)  $1\alpha - 2\beta$
- D)  $1\beta - 4\beta$

77. What is the relationship of fexofenidine and terfenidine?

- A) Metabolite
- B) Bioisoster
- C) Higher homolog
- D) Lower homolog

78. Which one is not used in Perkin reaction?

- A) Benzaldehyde
- B) Acetic anhydride
- C) Cinnamaldehyde
- D) Benzene

79. Dose dumping can be a general problem in the formulation of \_\_\_\_\_.

- A) Soft gelatin capsules
- B) Suppositories
- C) Modified release drug products
- D) None

80. Spanish Foxglove is \_\_\_\_\_.

- A) Digitalis lanata

- B) *Digitalis lutea*
- C) *Digitalis thapsi*
- D) *Digitalis purpurea*

81. Aglycone present in ginsenoside is \_\_\_\_\_.

- A) Dammarol
- B) Oleanolic Acid
- C) Panaxadiol
- D) Pyrogalllic acid

82. Isotopes differ in \_\_\_\_\_.

- A) Number of protons
- B) Valency number
- C) Chemical activity
- D) Number of neutrons

83. Methotrexate exerts its action by \_\_\_\_\_.

- A) Interfering with purine synthetase
- B) Intracellular formation of an amine adducts
- C) Forming a conjugate with nucleic acids
- D) Inhibiting the synthesis of folic acid

84. Kurchi bark belongs to \_\_\_\_\_ family.

- A) Rubiaceae
- B) Apocynaceae
- C) Loganiaceae
- D) Leguminosae

85. The reversible cholinesterase inhibitor indicated in the treatment of Alzheimer's disease is \_\_\_\_\_.

- A) Tacrine
- B) Edrophonium
- C) Neostigmine

D) Pyridostigmine

86. Morphine does not cause \_\_\_\_\_.

- A) Constriction of pupil
- B) CNS depression
- C) Respiratory depression
- D) Diarrhoea

87. Biologically active form of Vit. D in humans is \_\_\_\_\_.

- A) Cholecalciferol
- B) Calcifediol
- C) Calciferol
- D) Calcitriol

88. Homatropine is \_\_\_\_\_.

- A) Tropine ester of amino acetic acid
- B) Tropine ester of mandelic acid
- C) Tropine methyl bromide ester of mandelic acid
- D) Tropine ester of amino formic acid

89. Atropisomerism is shown by \_\_\_\_\_.

- A) Substituted biphenyl system as hindered single bond rotation
- B) Aliphatic ether
- C) Aliphatic aldehyde
- D) Aliphatic acid

90. Macrolide exerts its action by \_\_\_\_\_.

- A) Inhibiting transcription
- B) Altering the genetic code
- C) Terminating protein synthesis prematurely
- D) Post-translational modification

91. Which functional group is transferred by coenzyme pyridoxal phosphate?

- A) Aldehyde
- B) H-atom
- C) Amino
- D) Acyl

92. Hypertension stage-II falls in the range of \_\_\_\_\_.

- A) Sys = 160 and diastolic = 100
- B) Sys 140-159 or diastolic 90-99
- C) Sys = 160 or diastolic = 100
- D) Sys 140-159 and diastolic 90-99

93. Maximum amount of potassium loss is done by \_\_\_\_\_.

- A) Spironolactone
- B) Acetazolamide
- C) Chlorthalidone
- D) Torasemide

94. Amrinone is \_\_\_\_\_.

- A) PDE-III inhibitor
- B)  $\text{Na}^+/\text{K}^+$  ATPase inhibitor
- C) PDE-IV inhibitor
- D) None of above

95. Which antihypertensive is relatively safer during pregnancy? <https://www.pyqonline.com>

- A) Enalapril
- B) Nifedipine
- C) Furosemide
- D) None of above

96. Which of the followings is true for circulating RAS system?

- A) ACE is a dipeptide that acts on carboxyl terminal of A-I to generate A-II
- B) ACE is a dipeptide that acts on amino terminal of A-I to generate A-II
- C) ACE is a tripeptide that acts on carboxyl terminal of A-I to generate A-II

D) ACE is a dipeptide that acts on angiotensinogen to generate A-I

97. The dried tubers of *Gloriosa superba* Linn. Belonging to family Liliaceae contains

A) Morphine

B) Quinine

C) Atropine

D) Colchicines

98. Mark-Houwink equation is used to determine molecular weight of colloids from

A) Viscosity

B) Diffusion

C) Electronic charge

D) None of above

99. Class III antiarrhythmic agents are \_\_\_\_\_.

A)  $\text{Na}^+$  channel blocker

B)  $\text{K}^+$  channel blocker

C)  $\text{Na}^+$  channel opener

D)  $\text{K}^+$  channel opener

100. C-N stretching in amine is observed in the range of

A)  $2100\text{-}2260\text{ cm}^{-1}$

B)  $1610\text{-}1680\text{ cm}^{-1}$

C)  $1180\text{-}1360\text{ cm}^{-1}$

D)  $3590\text{-}3650\text{ cm}^{-1}$

**NIPER JEE 2004 ANSWER KEY**

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