NIPER JEE 2010

1. What is the side effect of gentamicin?

A) Hepatotoxicity

B) Ototoxicity

C) Genotoxicity

D) All

2. Which of the following drug is used in the treatment of schizophrenia, acute psychotic states, and delirium?

A) Methyldopa

B) Carbamazepine

C) Imipramine

D) Lithium

3. Which of the following is SSRIs used as an anti-depressant?

A) Citalopram

B) Fluxetin

C) Sertraline

D) All

4. What is the biological source of CLOVE?

A) Syzygium aromaticum

B) Cinnamomum aromaticum

C) Cardamom aromaticum

D) None of these

5. 2, ___, 18, 54, 162

A) 4

B) 6

C) 9

D) 3

6. Ototoxicity is the side effect associated with ___?

A) Furosemide

B) Capreomycin

C) Chloramphenicol

D) Ampicillin

7. Which of the following biological pathway occur in both aerobic and anaerobic conditions?

A) Glycolysis

B) Embden-Meyerhof pathway

C) Both A and B

D) Lactic acid fermentation

8. ___ is the principal chemical constituent of dill oil.

A) Myristicin

B) Myristicin

C) Limonene

D) Carvone

9. Which protein is responsible for the distribution of basic drugs?

A) α-glycoprotein

B) Lipoprotein

C) Hemoglobin

D) All

10. Chloramphenicol is an example of ___ class of antibiotics.

A) Beta-lactum

B) Aminoglycoside

C) Macrolides

D) None of the above

11. Erythromycin act by inhibition of ___?

A) Cell wall synthesis

B) Protein synthesis

C) Nucleic acid synthesis

D) Metabolites

12. The antigen-binding site of an antibody is known as ___.

A) Epitope

B) Mimotope

C) Paratope

D) Fv region

13. Antibody titration is an important tool to determine ___.

A) Concentration of a specific antibody in the patient's serum

B) Rate of antigen-antibody reaction

C) Number of sites available on antibody for loading of the drug

D) Concentration of the drug that can be loaded on antigen

14. What is the correct sequence in cell cycle?

A) G_1-G_2-S-M

B) G_1-S-G_2-M

C) G_1-G_2-M-S

D) G_1-S-M-G_2

15. Rifampicin ———— .

A) Inhibits cell wall synthesis

B) Inhibits DNA-dependent RNA polymerase

C) Inhibits nucleic acid synthesis

D) Inhibits mycolic acid synthesis

16. What is the function of restriction endonuclease?

A) Cuts double-stranded DNA at specific recognition nucleotide sequences

B) Cuts single-stranded DNA at specific recognition nucleotide sequences

C) Cuts double-stranded or single-stranded DNA at specific recognition nucleotide sequences

D) Converts the single-stranded RNA to double-stranded DNA

17. Which of the following is correct about SIBUTRAMIN?

A) Centrally-acting serotonin-norepinephrine reuptake inhibitor

B) An adjunct in the treatment of exogenous obesity along with diet and exercise

C) Withdrawn from the market due to cardiotoxicity

D) All

18. Metformin belongs to which of the chemical class of antidiabetic drugs?

A) Biguanides

B) Thiazolidinediones

C) Sulfonylureas

D) Alpha-glucosidase inhibitor

19. Clemmensen's reduction is described as ———— .

A) Reduction of carboxylic acid to aldehydes using zinc amalgam and hydrochloric acid

B) Reduction of ketones or aldehydes to alkanes using zinc amalgam and hydrochloric acid

C) Oxidation of ketones or aldehydes to carboxylic acid using hydrogen peroxide

D) Oxidation amine to amide using hydrogen peroxide

20. What is the function of plasmid in r-DNA technology?

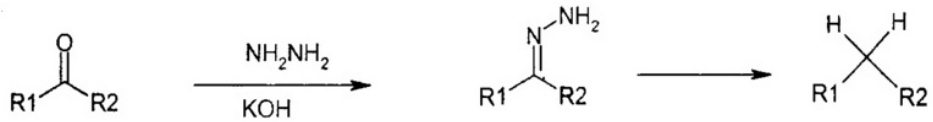
A) Host for DNA multiplication

B) Vector for transport

C) Cutting of DNA strands

D) All

21. Identify the reaction given below



A) Bechamp reduction

B) Benkeser reduction

C) Birch reduction

D) Wolf Kishner reduction

22. Regarding glutamine, which of the following is FALSE?

A) Backbone atoms can act as H-bond acceptor or donor

B) Side chain (residue) atoms can act as H-bond acceptor

C) Side chain (residue) atoms can act as H-bond donor

D) Side chain (residue) atoms can form ionic interaction with acidic groups

23. How many peaks will be absorbed in NMR spectra of diethyl ether?

A) 2

B) 3

C) 4

D) 5

24. “Collection of features essential for receptor binding and activity” is

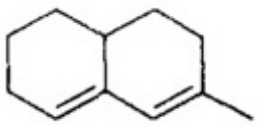
A) A pharmacophore

B) A docking solution

C) Bioactive conformation

D) 3D database search

25. Calculate the λ_{max} of the given compound



A) 234

B) 239

C) 273

D) 279

26. How many peaks are possible for paracetamol in ^{1}H-NMR spectrum?

A) 2

B) 3

C) 4

D) 5

27. How many types of protons are present in 1, 2-dibromo propane?

A) 2

B) 3

C) 4

D) 5

28. The main chemical constituent of belladonna is ————.

A) Hyoscyamine

B) Scopolamine

C) Hyoscine

D) Belladonin

29. Brontager test is used to detect ————.

A) Cardiac glycoside

B) Steroidal glycoside

C) Cynogenetic glycoside

D) Anthraquinone glycosides

30. The Nobel Prize in Physiology or Medicine 2010 is awarded to ————.

A) Andre Geim

B) Konstantin Novoselov

C) Robert G. Edwards

D) Akira Suzuki

31. MOA of sulfonamide is ————.

A) Competitive inhibitors of the enzyme dihydropteroate reductase (DHPR)

B) Competitive inhibitors of the enzyme dihydropteroate synthetase (DHPS)

C) Non-competitive inhibitors of the enzyme dihydropteroate synthetase (DHPS)

D) Noncompetitive inhibitors of the enzyme dihydropteroate reductase (DHPR)

32. Sulfalsalazine is a derivative of ————.

A) Sulfadimidine and 4-aminosalicylic acid

B) Sulfadimidine and 5-aminosalicylic acid

C) Sulfadiazine and 5-aminosalicylic acid

D) Supapyridine and 5-aminosalicylic acid

33. The contact angle is the angle at which ————.

A) Liquid/vapor interface meets a solid surface

B) Liquid interface meets a solid surface

C) Vapor interface meets a solid surface

D) All surfaces are in equilibrium

34. Identify the correct pair.

A) Combiflam: Sanofi Aventis

B) Zantac: Pfizer

C) Targit H: GSK

D) Amlogard: GSK

35. I-pill is manufactured by which pharmaceutical company?

A) Pfizer

B) GSK

C) Lupin

D) Cipla

36. Senna contains _____ type of stomata.

A) Paracytic

B) Diacytic

C) Anisocytic

D) Anomocytic

37. Cis-Trans isomerism is also known as _____.

A) Optical isomerism

B) Absolute isomerism

C) Relative isomerism

D) Geometric isomerism

38. Who acquired brand i-pill contraceptive from Cipla?

A) Nicholas Piramal

B) Piramal Healthcare Limited

C) Lupin

D) Dr. Reddy's

39. Atropa belladonna contain _____ type of stomata.

A) Paracytic

B) Diacytic

C) Anisocytic

D) Anomocytic

40. Glatta coater is the example of _____.

A) Stander coating pan

B) Perforated coating pan

C) Wuster coating pan

D) None of the above

41. Antiparkinsonian drugs act by _____.

A) Increasing dopamine activity in CNS

B) Reducing acetylcholine activity in CNS

C) Increasing blood flow towards brain

D) All

42. Methotrexate _____.

A) Competitively inhibits dihydrofolate synthetase (DHFS)

B) Competitively inhibits dihydrofolate reductase (DHFR)

C) Competitively inhibits thymidylate reductase (THR)

D) Competitively inhibits thymidylate synthetase (THS)

43. Which of the following information can be derived from molecular docking?

A) Predicts the preferred orientation of drug in drug-target complex

B) Predict the strength of association or binding affinity between two molecules

C) Prediction of type of signal produced by drug-target interaction

D) All of the above

44. COMSIA is associated with _____.

A) Virtual screening

B) Molecular docking

C) QSAR

D) ADME prediction

45. Enantiomers exhibit _____.

A) Absolute isomerism

B) Relative isomerism

C) Optical isomerism

D) All

46. α- and β-form of cyclic glucose are known as _____.

A) Epimers

B) Anomers

C) Enantiomers

D) Diastereoisomers

47. In CYP450, what is indicated by 450?

A) λ of absorption of light by P450 enzyme

B) Location of enzyme

C) Number of iso-enzyme of P450

D) None of the above

48. Which of the following HPLC Grade solvent is used for peptide and protein analysis?

A) Dimethylsulfoxide (DMSO)

B) Dimethylformamide (DMF)

C) Acetonitrile

D) All

49. Specificity of enzyme indicates _____.

A) Stereospecificity

B) Regiospecificity

C) Chemospecificity

D) All

50. Octadecyl carbon chain (C18) bonded silica column is used in _____ chromatography.

A) Normal phase

B) Reverse phase

C) Ion pair

D) Size exclusion

51. Reverse phase chromatography

A) Non-polar stationary phase

B) Polar stationary phase

C) Dipolar stationary phase

D) None

52. What is the normal fasting blood sugar in humans?

A) 100 mg/dl (5.6 mmol/L)

B) 120 mg/dl (6.6 mmol/L)

C) 83 mg/dl (4.6 mmol/L)

D) None

53. Which of the following is used as a reducing agent?

A) PCl_5

B) HNO_3 and H_2SO_4

C) $LiAlH_4$ in ether

D) $KMnO_4$

54. Right to Information Act came into force in _____.

A) 2000

B) 2002

C) 2005

D) 2007

55. Which of the following solvent is used in reversed-phase chromatography?

A) Heptafluorobutyric acid

B) Benzene

C) Diethyl ether

D) All

56. Which of the following is a natural antioxidant in the human body?

A) Uric acid

B) Glutathione

C) Melatonin

D) Tocotrienols

E) All

57. Which of the following stains is used to examine viable microbes?

A) Fluorescent dyes

B) Schiff's reagent

C) Crystal violet

D) Ruthenium-III

58. _____ is the bulk property detector in HPLC.

A) UV-VIS detector

B) Fluorescence detector

C) R.I detector

D) All

59. Bragg's Law states $n\lambda = 2d \sin\phi$, where ϕ =

A) Plan angle

B) Scattering angle

C) Crystalline angle

D) All

60. _____ is the universal HPLC detector.

A) UV-VIS detector

B) Fluorescence detector

C) RI detector

D) Electrochemical detector

61. Which of the following is directly compressible material used in tablet manufacturing?

A) Emdex

B) Mannogem

C) Neosorb

D) Elcema

E) All

62. Petrolatum is ———.

A) Absorption type of base

B) Hydrocarbon base

C) Water removable base

D) Water soluble base

63. Maximum size of rounded shape SGC is ———.

A) 20 minim

B) 16 minim

C) 9 minim

D) 80 minim

64. Correct stability order of butyl cation is ———.

A) 1° > 2° > 3°

B) 1° > 3° > 2°

C) 3° > 2° > 1°

D) 2° > 3° > 1°

65. Which of the following is approved by US-FDA for the treatment of rheumatoid arthritis in 2010? https://www.pyqonline.com

A) h-HFE7A Mab

B) Adalimumab

C) Ofatumumab

D) Tocilizumab

66. The main chemical constituent of senna is:

A) Sennosides A and B

B) Sennosides C and D

C) Both A and B

D) Rhein

67. Zeisel's method is used to measure _____ groups in complex natural compounds.

A) Hydroxyl

B) Amino

C) Alkoxy

D) Acidic hydrogens

68. Patent expiry date of Atorvastatin (Lipitor) is ———.

A) 2010

B) 2011

C) 2011

D) 2012

69. Erythropoietin is produced by ———.

A) Bone marrow

B) Kidney

C) Liver

D) B and C both

70. _____ is used as accelerator in rubber manufacturing.

A) Sulfide

B) Zinc oxide

C) Zn chromate

D) All of the above

71. Dramamine is used to treat car sickness though it was originally tested as an agent for the treatment of allergies. This is an example of lead identification via ———.

A) Clinical observation

B) Drug metabolism

C) Pharmacophore development

D) Random screening

72. Structure of α-phellandrene contains ———.

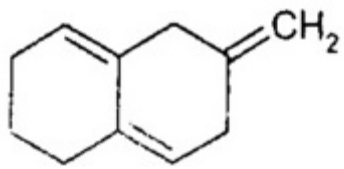
A) Homoannular diene

B) Ring extending conjugation

C) Exocyclic double bond

D) All

73. Find the λmax value for the compound given below:



A) 245 nm

B) 240 nm

C) 275 nm

D) 270 nm

74. If a variable temperature program is used rather than an isothermal temperature program, what parameter will not be affected?

A) Order in which compounds elute

B) Retention time

C) Peak height

D) Peak area

75. Opium alkaloids are derived from:

A) Tyrosine

B) Phenylalanine

C) Ornithine

D) Mevalonic acid

76. Mull is a sampling technique in ———.

A) IR

B) UV

C) Mass spectroscopy

D) NMR

77. Quinolones act by ———.

A) Inhibiting Gram positive DNA gyrase and topoisomerase enzymes

B) Inhibiting Gram negative DNA gyrase and topoisomerase enzymes

C) Inhibiting Gram negative and Gram positive DNA gyrase and topoisomerase enzymes

D) Inhibiting Gram negative and Gram positive topoisomerase enzymes

78. Why gram-negative bacteria stain pink by gram staining?

A) Their cell wall is made of peptidoglycan

B) Their cell wall is made of lipids

C) Their cell wall is acidic to retain safranin

D) None of the above

79. Which one of these molecules can be a reactant in a Friedel-Crafts reaction?

A) Aniline

B) Nitrobenzene

C) Chloroethene

D) Bromobenzene

80. What is the approximate chemical shift of an alkynyl carbon in ^{13}C NMR spectroscopy?

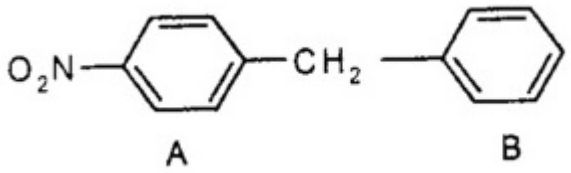
A) 200 ppm

B) 30 ppm

C) 70 ppm

D) 120 ppm

81. What might be predicted to happen when the following substance undergoes Friedel-Crafts acylation?



A) Substitution occurs in ring B, p- to the methylene group

B) Substitution occurs in ring A, o- to the nitro group

C) Substitution occurs in ring A, o- to the methylene group

D) Substitution occurs in ring B, m- to the methylene group

82. Chief active constituent present in Anethum graveolens is ————.

A) Fenchone

B) Carvone

C) Anethole

D) Cineole

83. Mutual funds are regulated in India by which among the following?

A) RBI

B) SEBI

C) Stock exchanges

D) RBI and SEBI both

84. What is the function of plasmid in r-DNA technology?

A) Host for DNA multiplication

B) Vector for transport

C) Cutting of DNA

D) All of the above

85. An effective antidote in cyanide poisoning is:

A) Pralidoxime

B) Erythrityl trinitrate

C) Atropine

D) Flumazenil

86. 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 the endogenous substrate

87. Most intense peak obtained in mass spectrum is ————.

A) Molecular ion peak

B) Base peak

C) Parent ion peak

D) Isotopic peak

88. IND application filling is done before ———.

A) Preclinical study

B) Clinical trials

C) Patent registration

D) Marketing

89. Which of the following is false regarding Oppenauer oxidation?

A) The alcohol is oxidized with aluminum isopropoxide in excess acetone.

B) DMP is used as the reaction catalyst

C) Highly selective for secondary alcohols

D) Pregnenolone converted to progesterone

90. Which of the following is true about diastereoisomers?

A) Stereoisomers having multiple chiral centers, cannot be superimposed on the mirror image of another.

B) Configuration isomerism and conformational isomerism are also forms of diastereomerism

C) Diastereomers have different physical properties and different reactivity.

D) All of the above

91. Electrophilic aromatic substitution reaction using a strong Lewis acid catalyst is known as ——–.

A) Clemmensen reduction

B) Wolff-Kishner reduction

C) Friedel-Crafts reaction

D) None of the above

92. Splitting of a spectral line into several components due to a magnetic field is known as ————.

A) Hamiltonian effect

B) Zeeman effect

C) Stark effect

D) Magnetic effect

93. Arrange the following in correct bond energy sequence:

A) C-Cl < C-C < C-H < H-H

B) H-H < C-H < C-C < C-Cl

C) C-Cl < C-H < C-C < H-H

D) C-Cl < C-H < H-H < C-C

94. Salk vaccine is ————.

A) Injected dose of dead poliovirus

B) Oral dose of live attenuated poliovirus

C) Injected dose of live attenuated poliovirus

D) Oral dose of dead poliovirus

95. Why is PEG used in liposome?

A) To enhance drug loading capacity

B) To form an effective bi-layer

C) To modify the release of drug

D) Avoid detection by the body's immune system

96. DCC is used in ————.

A) Bechamp reduction

B) Benkeser reduction

C) Birch reduction

D) Solid-phase peptide synthesis

97. Diazepam is ————.

A) Antipsychotic

B) Antidepressant

C) Minor tranquilizer

D) Hallucinogen

98. Which of the following is a stop code for translation?

A) UAA

B) UGA

C) UAG

D) All of the above

99. Which of the following antioxidants is a reducing agent?

A) α-Tocopherol

B) BHT

C) Vitamin C

D) All of the above

100. Autoimmune disorder myasthenia gravis is caused by ————.

A) Destruction of articular cartilage and ankylosis of the joints

B) Circulating antibodies that block ACh receptors at the postsynaptic neuromuscular junction

C) Antigen-antibody reaction which destructs the neuromuscular junction

D) Deficiency of ACh at the neuronal junction

NIPER JEE 2010 ANSWER KEY

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