

**NIPER JEE 2014**

1. Vaccine is not available for which of the hepatitis viral infection?
  - A) Hepatitis A
  - B) Hepatitis B
  - C) Hepatitis C
  - D) Hepatitis D
  
2. Which of the following indicators would be most suitable for titration of lactic acid with a strong base? (Lactic acid  $pK_a=3.08$ )
  - A) alizarin yellow ( $pK_{in} = 11.2$ )
  - B) methyl orange ( $pK_{in} = 3.4$ )
  - C) phenol red ( $pK_{in} = 7.9$ )
  - D) bromophenol blue ( $pK_{in} = 3.9$ )
  
3. Tranexamic acid antagonizes the action of:
  - A) alteplase
  - B) warfarin
  - C) heparin
  - D) aspirin
  
4. The rate limiting step in cholesterol biosynthesis is:
  - A) Squalene synthase
  - B) Mevalonate kinase
  - C) HMG-CoA synthase
  - D) HMG-CoA reductase
  
5. The headquarters of Sun Pharma is located at:
  - A) Mumbai
  - B) Ahmedabad
  - C) Baroda
  - D) New Delhi
  
6. Gynecomastia is:

- A) enlargement of mammary glands in females
- B) presence of female type mammary glands in males
- C) lactating mammary glands
- D) drug induced breast enlargement

7. Identify the detoxifying agent used for antineoplastic therapy with alkylating agent:

- A) Amifostine
- B) Mesna
- C) Leucovorin
- D) Dexrazoxane

8. Reaction of alcoholic solution of curcumin with acetic acid and hydrazine hydrate under 60°C for 24 h gives:

- A) Diazocurcumin
- B) Hydrazinocurcumin
- C) Curcuminoxime
- D) Curcuminamine

9. Which of the following drugs may cause reversible gynecomastia?

- A) Omeprazole
- B) Pirenzepine
- C) Cimetidine
- D) Sucralfate

10. Greater than 90% of serotonin is located here:

- A) cerebral cortex
- B) raphe nucleus (brain stem)
- C) enterochromaffin cells of the GI tract
- D) lungs

11. Ondansetron, granisetron, tropisetron interact with its serotonin receptor subtype located in the area postrema, sensory, and enteric nerves:

- A) 5HT<sub>3</sub>
- B) 5HT<sub>4</sub>

- C) 5HT1a
- D) 5HT1d

12. Antimigrane specificity of ergot alkaloid is mediated by these receptors:

- A) adrenergic
- B) serotonergic
- C) cholinergic
- D) dopaminergic

13. Which drug is NOT metabolized by acetylation?

- A) Isoniazid
- B) Dapsone
- C) Hydralazine
- D) Metoclopropamide

14. Enzyme catalyzing conversion of angiotensinogen to angiotensin is:

- A) serum cholinesterase
- B) aspartyl protease
- C) dopamine b-hydroxylase
- D) phenylethanolamine N-methyltransferase

15. Synthesis site of most circulatory renin is:

- A) pulmonary
- B) liver
- C) kidney
- D) brain

16. Receptor type mediating urinary retention associated with 1st-generation H1 antagonists is:

- A) adrenergic
- B) cholinergic
- C) serotonergic
- D) GABA-ergic

17. Loading dose of a drug primarily depends on:

- A) Volume of distribution
- B) Clearance
- C) Rate of administration
- D) Half-life

18. Therapeutic index is a measure of:

- A) Safety
- B) Potency
- C) Efficacy
- D) Selectivity

19. Elimination after 4 half-lives in first-order kinetics is:

- A) 84%
- B) 93%
- C) 80.5%
- D) 75%

20. All amino acids except one participate in phase 2 reactions of detoxification:

- A) Serine
- B) Glycine
- C) Glutamine
- D) Cysteine

21. Beta-oxidation of odd-chain fatty acids yields:

- A) Succinyl-CoA
- B) Propionyl-CoA
- C) Acetoacetyl-CoA
- D) Dicarboxylic acids

22. Which of the following vitamins is not a component of the electron transport chain?

- A) Nicotinamide
- B) Ubiquinone

- C) Biotin
- D) Riboflavin

23. The enzyme fumarase catalyzes the reversible hydration of fumaric acid to malate, but it does not catalyze the hydration of maleic acid. This is an example of:

- A) chiral activity
- B) racemization
- C) stereoisomerization
- D) stereospecificity

24. The agent of choice to terminate pregnancy in the first trimester is:

- A) Gemeprost
- B) Misoprostol
- C) Oxytocin
- D) Ritodrine

25. Which of the following substituents acts as a moderate activator and ortho/para director?

- A) -Br
- B) -SO<sub>3</sub>H
- C) -COOH
- D) -NHCO-R

26. Myoglobin and the subunits of hemoglobin have:

- A) very different primary and tertiary structures
- B) very similar primary and tertiary structures
- C) very similar primary structures, but different tertiary structures
- D) very similar tertiary structures, but different primary structures

27. A person with Bombay blood group cannot receive A, B, AB, or O blood because of the presence of:

- A) Anti-A and Anti-B antibodies
- B) Anti-H antibodies
- C) Anti-A, Anti-B, Anti-H antibodies
- D) Anti-B, Anti-H antibodies

28. All of the following processes EXCEPT one are mitochondrial:

- A) Glycolysis
- B) TCA cycle
- C) Beta-oxidation of fatty acids
- D) Ketogenesis

29. A deficiency of biotin in higher animals causes:

- A) Defective oxidation of fatty acids to acetyl-CoA
- B) Defective synthesis of fatty acids
- C) Decreased formation of lactic acid in muscles
- D) Decreased conversion of pyruvate to acetyl-CoA

30. Which of the following fatty acids is a precursor of series 1-Eicosanoids?

- A) Linoleic acid
- B) Arachidonic acid
- C) Eicosapentaenoic acid
- D) Linolenic acid

31. To determine the efficiency of glomeruli in the process of filtration of blood \_\_\_\_\_ is used as a test substance.

- A) Inulin
- B) Creatinine
- C) Creatin
- D) All of the above

32. Oppenauer oxidation is the reverse process of which of the reduction processes?

- A) Wolff-Kishner reduction
- B) Rosenmund's reduction
- C) Clemmensen reduction
- D) Meerwein-Pondorf-Verely reduction

33. The elimination of alcohol follows:

- A) Zero-order kinetics
- B) 1st-order kinetics
- C) 2nd-order kinetics
- D) 3rd-order kinetics

34. Which of the following methods is used to convert ketone into hydrocarbon?

- A) Aldol condensation
- B) Reimer-Tiemann reaction
- C) Cannizzaro's reaction
- D) Clemmensen's reduction

35. The capacity of size 0 capsule in mg is:

- A) 546
- B) 408
- C) 300
- D) 222

36. In carboxylation of clotting factors by vitamin K, which amino acid is carboxylated?

- A) Aspartate
- B) Glutamate
- C) Histamine
- D) Histidine

37. Microdosing is directly given to a patient without preclinical testing in which phase?

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

38. Ethylene oxide is packaged with:

- A) O<sub>2</sub>
- B) N<sub>2</sub>
- C) CO<sub>2</sub>

D) Formaldehyde

39. Nitroglycerine is denitrated by:

- A) Glutathione
- B) Glucuronidation
- C) Acetylation
- D) Hydroxylation

40. Arthus reaction is \_\_\_\_\_ hypersensitivity.

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

41. Chromolyn sodium inhibits mast cell degranulation, probably, by inhibiting:

- A)  $\text{Ca}^{++}$  influx
- B)  $\text{Na}^{+}$  influx
- C)  $\text{K}^{+}$  influx
- D)  $\text{Cl}^{-}$  influx

42. Which of the following substances does NOT function as a Lewis acid?

- A)  $(\text{CH}_3)_3\text{C}^{+}$
- B)  $(\text{CH}_3)_3\text{N}$
- C)  $\text{BF}_3$
- D)  $\text{AlBr}_3$

43. Which of the following is a most likely fragment ion formed at  $m/z = 57$ ?

- A)  $\text{CH}_3\text{CH}_2^{+}$
- B)  $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2^{+}$
- C)  $\text{CH}_3\text{CH}_2\text{CH}_2^{+}$
- D)  $\text{CH}^{+}=\text{CH}_2$



44. Which of the following statements is true about the molecular ion? Molecular ion is a compound that:

- A) has lost a pair of electrons
- B) has gained one electron
- C) has lost one electron
- D) carries a free radical and a negative charge

45. The blood pressure-lowering effect of captopril is reduced by which drug?

- A) Icatibant
- B) Losartan
- C) Nalorphine
- D) Agrobatan

46. Drug used in heparin overdose is:

- A) Protamine
- B) Phylloquinone
- C) Ticlopidine
- D) Clopidogrel

47. Cetuximab acts on which molecular target?

- A) VEGF
- B) EGFR
- C) CD20
- D) CD52

48. Which of the following drug delivery systems comprises a core composed of hydrophilic groups?

- A) Liposomes
- B) Micelles
- C) Reverse micelles
- D) None of the above

49. Measuring zeta potential is useful in determining which property of a liquid formulation?

- A) Viscosity

- B) Stability
- C) Solubility
- D) Particle size

50. Cholesteryl esters behave as \_\_\_\_\_ liquid crystals.

- A) Metallotropic
- B) Lyotropic
- C) Thermotropic
- D) None of the above

51. When wetting is complete, what is the contact angle  $q$ ?

- A)  $q = 0$
- B)  $q = 90$
- C)  $q = 180$
- D)  $90 < q < 180$

52. Which exotoxin binds to inhibitory neurons, blocking the release of glycine, and resulting in twitching paralysis?

- A) Diphtheria toxin
- B) Tetanus toxin
- C) Botulinum toxin
- D) Cholera toxin

53. Nylon 6 is a polymer of:

- A) hexamethylenediamine and adipic acid
- B) caprolactam
- C) maleic anhydride and hexamethylenediamine
- D) sebacic acid and hexamethylenediamine

54. Which of the following changes corresponds to an energy change in quantum number that is too small to be observed by spectroscopy?

- A) Translational
- B) Vibrational
- C) Rotational

D) Electronic

55. The plant group which yields 'Taxol' belongs to:

- A) Bryophyte
- B) Gymnosperm
- C) Pteridophyte
- D) Lichen

56. A company is dumping a product if it exports at a price which is \_\_\_\_\_ that the price it sells at in its own home market.

- A) higher
- B) lower
- C) marginally higher
- D) equal to

57. What is the driving force for colligative properties like freezing point depression?

- A) Entropy
- B) Enthalpy
- C) Internal energy
- D) Work

58. Which condition favors positive deviations from Raoult's Law?

- A) Strong solute-solute interactions
- B) Strong solute-solvent interactions
- C) Weak solute-solvent interactions
- D) Weak solute-solute interactions

59. Which of the following densities of a given powder sample is the largest?

- A) Bulk
- B) True
- C) Tap
- D) Granule

60. For adults, the ethanol content limit for oral OTC solution products is:

- A) 0.5%
- B) 1.5%
- C) 5%
- D) 10%

61. Accelerated stability study is based on Arrhenius relation. It can be applied in case of:

- A) Microorganism degradation
- B) Photochemical reactions
- C) Decomposition caused by relative humidity
- D) Decomposition caused by temperature

62. What is the order of decomposition of a drug in the following formulation?

Time (hours)	Concentration (mM)
0	25
2	24
4	21
10	15

- A) Zero-order
- B) First-order
- C) Second-order
- D) Pseudo zero-order

63. Which of the following is NOT a reducing sugar?

- A) Sucrose
- B) Mannose
- C) Lactose
- D) Fructose

64. Albiglutide is:

- A) DDP-I inhibitor
- B) Amyline analogue
- C) GLP-1 inhibitor

D) SGLT-2 inhibitor

65. Geometric isomers cannot be distinguished by:

- A) UV spectroscopy
- B) IR spectroscopy
- C) NMR spectroscopy
- D) Mass spectrometry

66. Who is the founder of Bengal Chemicals & Pharmaceuticals Ltd.?

- A) Acharya P.C. Ray
- B) R. M. Roy
- C) Rabindranath Tagore
- D) J. C. Bose

67. Which of the following is/are nephrotoxic?

- A) Amphotericin B
- B) Cisplatin
- C) ACE inhibitor
- D) All of the given

68. Least-developed countries have time given till \_\_\_\_\_ to ensure that their laws and practices conform to the TRIPS agreement for pharmaceutical patents.

- A) 2010
- B) 2016
- C) 2026
- D) 2006

69. Nuclear receptors belong to which class of transcription factor?

- A) Helix-loop-helix proteins
- B) Helix-turn-helix
- C) Leucine zipper proteins
- D) Zinc finger proteins

70. Who is the chairman for Drugs Technical Advisory Board?

- A) Director General of Health Services
- B) Drugs Controller, India
- C) President of the Medical Council of India
- D) Director of the Central Drug Research Institute

71. Raman spectroscopy is \_\_\_\_\_ spectroscopy.

- A) Translational
- B) Vibrational
- C) Rotational
- D) None of the above

72. Proteins targeted for destruction in eukaryotes are covalently linked to:

- A) Chaperones
- B) Clathrin
- C) Ubiquitin
- D) Laminin

73. Which virus would most likely be involved in cervical cancer?

- A) Papillomavirus
- B) HTLV-1
- C) Hepatitis B Virus
- D) Epstein-Barr Virus

74. The distal portion of the small intestine contains clumps of lymph follicles called:

- A) Rugae
- B) Villi
- C) Islets of Langerhans
- D) Peyer's patches

75. Proteins associated with Parkinson's disease is:

- A)  $\alpha$ -Synuclein
- B) Tau

- C)  $\beta$ -Glucosidase
- D)  $\alpha$ -Galactosidase

76. Abraxane is:

- A) Polyethylene glycol bound paclitaxel
- B) Pegylated interferon
- C) Albumin-bound paclitaxel
- D) Calixarane capsulated paclitaxel

77. Drugs (Prices Control) Order, 2013 is issued by:

- A) DGHS
- B) DTAB
- C) NPPA
- D) CDSCO

78. D-Fructose, is reduced to:

- A) D-Glucitol (Sorbitol)
- B) D-Mannitol
- C) Both
- D) None

79. Among the given compounds, which has the highest boiling point?

- A) n-Hexane
- B) n-Pentane
- C) 2-Methylpentane
- D) n-Butane

80. Sucrose can be determined after silylation using which chromatographic technique?

- A) Paper Chromatography
- B) HPLC
- C) Gel Chromatography
- D) Gas Liquid Chromatography

81. Which of the following is ODD from the chemistry point of view?
- A) Caffeine
  - B) Theobromine
  - C) Mercaptopurine
  - D) Cocaine
82. In GC with open tubular column, which van Deemter term is normally negligible?
- A) The A term
  - B) The term B
  - C) The term C
  - D) Linear velocity
83. Which of the following terms describes the extent to which the mean measurement is close to the true value?
- A) Specificity
  - B) Sensitivity
  - C) Accuracy
  - D) Precision
84. The most recent member to join BRICS is:
- A) South Korea
  - B) South Africa
  - C) South Wales
  - D) Sudan
85. Which of the following concepts explains Markovnikov's rule as applied to the addition of HBr to propene?
- A) The relative stability of carbocations
  - B) The nucleophilicity of bromide anion
  - C) The acidity of HBr
  - D) The Aufbau principle
86. What is the best choice of reagent(s) to perform the following transformation?
- A) H<sub>2</sub>O, H<sub>2</sub>SO<sub>4</sub>



- B) HgSO<sub>4</sub>; followed by NaBH<sub>4</sub>
- C) BH<sub>3</sub>; followed by H<sub>2</sub>O<sub>2</sub>
- D) OsO<sub>4</sub>; followed by NaHSO<sub>3</sub>

87. With respect to electrophilic aromatic substitution, a chlorosubstituent is:

- A) an activating group and an ortho/para director.
- B) an activating group and a meta director.
- C) a deactivating group and an ortho/para director.
- D) a deactivating group and a meta director.

88. Which of the following is NOT a  $\omega$ -3 fatty acid?

- A)  $\alpha$ -Linolenic acid
- B) Eicosapentaenoic acid
- C) Docosahexaenoic acid
- D) Oleic acid

89. The Nobel prize in medicine 2013 was given for the work done on:

- A) Vesicular transport
- B) Cholesterol metabolism
- C) Diffusion
- D) Structure and function of ribosome with X-ray crystallography

90. Identify the bicyclic monoterpene.

- A) Myrcene
- B) Ocimene
- C) Limonene
- D) Pinene

91. Synthesis of progesterone from diosgenin involves which of the following reactions?

- A) Ruff degradation
- B) Marker degradation
- C) Barbier-Wieland degradation
- D) Edman degradation

92. Maximum number of Abbreviated New Drug Approvals in 2013 are granted by US-FDA to which of the Indian company?

- A) Lupin Pharmaceuticals
- B) Aurobindo Pharma
- C) Reddy's Laboratories
- D) Glenmark Generics

93. Which of the following techniques is suitable for identifying mRNA molecules in samples?

- A) Western blotting
- B) Southern blotting
- C) Northern blotting
- D) Eastern blotting

94. Which of the organism is used in Ames test?

- A) *Streptococcus aureus*
- B) *Pseudomonas aeruginosa*
- C) *Salmonella typhimurium*
- D) *E. coli*

95. Which one of the following antibiotics attaches to 50S ribosome and inhibits peptidyl-transferase activity?

- A) Penicillin
- B) Chloramphenicol
- C) Trimethoprim
- D) Amphotericin

96. Which of the following is NOT recommended as a solo agent in the treatment of *P. falciparum* malaria? <https://www.pyqonline.com>

- A) Atovaquone/Proguanil
- B) Doxycycline
- C) Quinine
- D) Artesunate

97. Implants are tested for dissolution by \_\_\_\_\_ apparatus.
- A) Reciprocating cylinder
  - B) Flow-through cell
  - C) Paddle over disk, rotating cylinder
  - D) Reciprocating holder
98. Absence of Duffy antigen (CD234) on red cells protects against:
- A) Plasmodium vivax
  - B) Plasmodium ovale
  - C) Plasmodium falciparum
  - D) Plasmodium malariae
99. The oil with counter-irritant property is:
- A) Thyme
  - B) Turpentine oil
  - C) Peppermint
  - D) Orange oil
100. The anti-depressant which selectively inhibits reuptake of both 5HT and NE is:
- A) Bupropion
  - B) Fluoxetine
  - C) Venlafaxin
  - D) Sertraline
101. Active site of all serine proteases consists of:
- A) Ser-Glu-Asp
  - B) Ser-Glu-Met
  - C) Ser-His-Asp
  - D) Ala-Glu-Met
102. Which of the following is a non-professional antigen-presenting cell?
- A) Dendritic cells
  - B) Macrophages

- C) Fibroblasts
- D) B cells

103. India's First New Drug, Synriam<sup>TM</sup>, was launched by Ranbaxy on 2013, April 25 (World Malaria Day) for treatment of Plasmodium falciparum malaria. It is a combination of:

- A) Artemolane and Piperaquine
- B) Sulfadoxine and Pyrimethamine
- C) Atovaquone and Proguanil
- D) Artemether and Lumefantrine

104. Which of the following tests is not used to identify aldehydes?

- A) Brady's test
- B) Benedict solution test
- C) Fehling solution test
- D) Ammonia test

105. Which of the following swellable and hydrophilic nonionic polymers is used as release retardant?

- A) Ethyl cellulose
- B) Alginate
- C) Polyvinyl acetate
- D) HPMC

106. 5'-Phosphate group is removed from the DNA end by enzyme:

- A) Alkaline phosphatase
- B) Acidic phosphatase
- C) Alkaline phosphorylase
- D) Methyl transferase

107. The correct sequence of the amino acids in the given tripeptide given below is:

- A) Val-Ser-Thr
- B) Val-Thr-Ser
- C) Leu-Ser-Thr
- D) Leu-Thr-Ser

108. Among the following compounds, identify the one that exhibits a sharp band at around 3300  $\text{cm}^{-1}$  in the IR spectrum.

- A) 1,2-butadiene
- B) 1,3-butadiene
- C) 1-butyne
- D) 2-butyne

109. Blood cells that increase in number during allergic conditions like asthma are:

- A) Neutrophils
- B) Basophils
- C) Eosinophils
- D) Lymphocytes

110. Centre of DNA Fingerprinting and Diagnostics (CDFD) is located at:

- A) Delhi
- B) Chennai
- C) Kolkata
- D) Hyderabad

111. Dendrimers are molecules that are:

- A) Composed of metals
- B) Large polymeric material
- C) Highly branched but small molecules
- D) Varied molecules with many types of groups

112. Lawsone is obtained from:

- A) Gymnema
- B) Liquorice
- C) Dioscorea
- D) Henna

113. The value of stretching frequency of a bond can be calculated by:

- A) Hooke's law
- B) Stroke's law
- C) Lambert-Beer's law
- D) None

114. The dengue fever virus is:

- A) Arbo virus
- B) Echo virus
- C) Enterovirus
- D) Orthomyxovirus

115. What is aragatoban?

- A) Thrombin inhibitor
- B) Plasmin inhibitor
- C) Kinin inhibitor
- D) Rennin inhibitor

116. Carbonyl group of aldehydes and ketones can be identified by \_\_\_\_\_ test/reagent.

- A) Tollens reagent
- B) Chromic acid test
- C) Jones test
- D) DNP test

117. Sanofi-Synthelabo merged with Aventis and formed Sanofi-Aventis. It is renamed in 2011 as:

- A) Sanofi
- B) Aventis
- C) Sanofi Pasteur
- D) Medley

118. Ligand-gated ion channels which allow passage of cations is:

- A) Nicotinic receptors
- B) GABA<sub>A</sub> receptors
- C) GABA<sub>B</sub> receptors

D) Glycine receptors

119. The active form of vitamin D is:

- A) Ergocalciferol
- B) Cholecalciferol
- C) Calcitriol
- D) Calcidiol

120. Select the pair that best expresses a relationship similar to that expressed in the pair: water: pipe:

- A) cart: road
- B) electricity: wire
- C) sea: beach
- D) music: instrument

121. The double bond in cholesterol is located in ring:

- A) A
- B) B
- C) C
- D) D

122. Which eicosanoid causes activation of platelets?

- A) Prostaglandin G
- B) Thromboxane A
- C) Thromboxane B
- D) Prostacyclin

123. Which of the following is a zymogen?

- A) Trypsin
- B) Plasmin
- C) Thrombin
- D) Factor X

124. Camptothecin is a therapeutic drug that directly inhibits:

- A) Telomerase
- B) DNA polymerase
- C) Type I topoisomerases
- D) Type II topoisomerases

125. 10-11 epoxide is a metabolic product of:

- A) Phenytoin
- B) Carbamazepine
- C) Valproic acid
- D) Ethosuximide

126. The cobalamin (vitamin B12) and one-carbon metabolism are interrelated because cobalamin is required for:

- A) regenerating methionine from homocysteine using methyl-THF
- B) oxidation of odd-numbered chain-length fatty acids
- C) reduction of lipid peroxides that cause hemolysis
- D) reduction of dihydrofolate to tetrahydrofolate

127. Which of the following second messengers functions at the membrane without diffusing into the cytosol?

- A)  $\text{Ca}^{2+}$
- B) cyclic AMP/GMP
- C) IP3
- D) diacylglycerol

128. Apoptosis is triggered by:

- A) Nitric oxide
- B) Superoxide dismutase
- C) BCL2
- D) p53

129. Which of the following does not inhibit 50S ribosome?

- A) Chloramphenicol



- B) Tetracycline
- C) Oxazolidinones
- D) Clindamycin

130. The conversion of acetophenone to acetanilide is best accomplished by using:

- A) Beckmann rearrangement
- B) Curtius rearrangement
- C) Lossen rearrangement
- D) Hofmann rearrangement

131. Crystalline anionic microporous aluminosilicates are:

- A) Calixarenes
- B) Zeolites
- C) Amberlites
- D) Bauxite

132. C4 plants are more productive than C3 plants because they:

- A) are efficient in photosynthesis
- B) have less photorespiration
- C) can utilize more nutrients from soil
- D) have fewer stomata

133. Which of the following reaction does not produce pyrrole?

- A) Pall Knorr synthesis
- B) Hantzsch synthesis
- C) Knorr synthesis
- D) Skraup synthesis

134. To identify API or pharmaceutical substance, a globally recognized system is:

- A) USAN
- B) INN
- C) WHO
- D) BAN

135. Match the following:

- | Medicinal gas      | Stored in cylinders with |
|--------------------|--------------------------|
| 1. CO <sub>2</sub> | — P. red shoulder        |
| 2. Hydrogen        | — Q. green shoulder      |
| 3. Helium          | — R. white shoulder      |
| 4. Oxygen          | — S. grey shoulder       |
- A) 1-S, 2-R, 3-Q, 4-P  
B) 1-R, 2-S, 3-P, 4-Q  
C) 1-S, 2-P, 3-Q, 4-R  
D) 1-Q, 2-P, 3-S, 4-R

136. Rifaximin is approved as orphan drug for the treatment of:

- A) Traveller's diarrhea  
B) Hepatic encephalopathy  
C) Irritable bowel syndrome  
D) None of the above

137. The wound exhibited signs of copious drainage requiring medical intervention. Copious means:

- A) Minimal  
B) Clear  
C) Maximal  
D) Foul

138. Electron-withdrawing but ortho, para directing group is:

- A) -NO<sub>2</sub>  
B) -COR  
C) -CN  
D) Halide

139. Spanish foxglove is:

- A) Digitalis purpurea

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

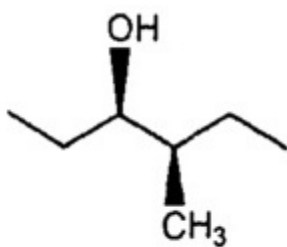
140. As per DPCO 2013, new drug/formulation/processes developed by domestic research and development and patented is exempted from price control for a period of:

- A) 2 years
- B) 5 years
- C) 10 years
- D) 15 years

141. Which of the following is an immunosuppressant?

- A) Cyclophosphamide
- B) Cyclosporine
- C) Cyclobenzaprime
- D) Tranexamic acid

142. What are the absolute configurations of the chiral carbons in the given compound?



- A) R, R
- B) S, S
- C) R, S
- D) S, R

143. Friedrich type I hyperlipidemia is due to excess of:

- A) HDL
- B) LDL
- C) IDL
- D) Chylomicrons

144. FMC Corporation has developed patented aqueous enteric coating called as:

- A) Aquateric
- B) Aquateric and Eudgrit
- C) HPMC 50
- D) Aquateric, Eudgrit and HP55

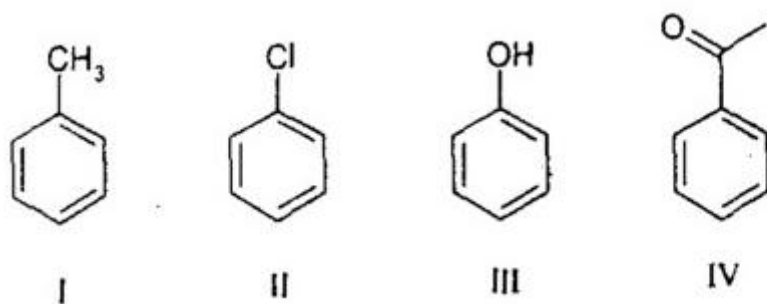
145. Antiemetic drugs used to treat vomiting due to cytotoxic drug treatment act at all the receptors EXCEPT:

- A) 5HT<sub>1</sub>, D<sub>1</sub> antagonist
- B) 5HT<sub>2</sub>, D<sub>2</sub> antagonist
- C) 5HT<sub>3</sub>, D<sub>2</sub>, NK<sub>1</sub> antagonist
- D) H<sub>1</sub> antagonist

146. When logP value of a drug is -1, what will be the conclusion about its solubility?

- A) Solubility of drug is 2 times in water than octanol
- B) Solubility of drug is 2 times in octanol than water
- C) Solubility of drug is 10 times in octanol than water
- D) Solubility of drug is 10 times in water than octanol

147. Arrange the compounds in order of increasing reactivity toward electrophilic aromatic substitution (lowest first).



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

148. The function of ubiquitin is:

- A) To assist attachment of RNA polymerase to the promoter
- B) To aid in the removal of introns from mRNA
- C) To attach to proteins to signal they are to be disassembled by a proteosome
- D) To prevent attachment of mRNA to the ribosome

149. \_\_\_\_\_ & \_\_\_\_\_ are closely interrelated functions.

- A) Planning & Controlling
- B) Planning & Organizing
- C) Organizing & Controlling
- D) Staffing & Controlling

150. Prolonged use of steroids may cause antihistamine?

- A) Hypoglycemia
- B) Hypotension
- C) Decrease in bone matrix protein
- D) Early healing of wound

151. The pharmacokinetic 'half-life' of which one of the following resembles to its pharmacodynamic 'half-life'?

- A) Morphine
- B) Terfenadine
- C) Isoprenaline
- D) Suxamethonium

152. The renal clearance of inulin is used as a measurement of:

- A) Effective renal blood flow
- B) Active renal secretion
- C) Glomerular filtration rate
- D) Intrinsic enzyme activity

153. Euphoria is associated with \_\_\_\_\_ receptors, while dysphoria is associated with \_\_\_\_\_ receptors.

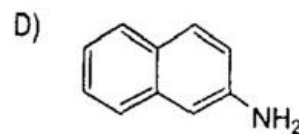
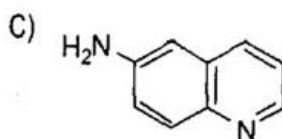
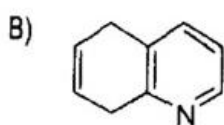
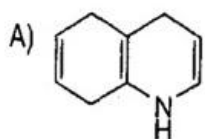
- A) mu; kappa
- B) kappa; mu

- C)  $\mu$ ;  $\delta$
- D)  $\kappa$ ;  $\delta$

154. Enzyme action can be influenced by the presence of inhibitors. Which of the following statements correctly matches the type of inhibitor with its effect on an enzyme?

- A) Irreversible: renders the enzyme permanently inactive
- B) Competitive: inhibitor binds only to ES complex, only important when  $[S]$  high,  $V_{max}$  lower,  $K_m$  lower
- C) Noncompetitive: can be overcome with high  $[S]$ ;  $V_{max}$  unchanged,  $K_m$  higher
- D) Uncompetitive: cannot be overcome with high  $[S]$ ;  $V_{max}$  lower, but  $K_m$  unchanged

155. The major product formed in the reaction of quinoline with potassium amide ( $\text{KNH}_2$ ) in liquid ammonia is:



- A) (structure missing)
- B) (structure missing)
- C) (structure missing)
- D) (structure missing)

156. Neoprene is:

- A) Polyurethane
- B) Polychloroprene
- C) Acrylonitrile-butadiene-styrene
- D) Polyisoprene

157. Rochelle salt is:

- A) Potassium sodium tartrate
- B) Ferrous ammonium sulfate
- C) Aluminium potassium sulfate
- D) Copper sulfate

158. Which of the given conclusions is logically valid and is inferred from the above arguments:

All professors are researchers

Some scientists are professors

A) All scientists are researchers

B) All professors are scientists

C) Some researchers are scientists

D) No conclusion follows

159. K-band is the absorption band arising from  $\pi \rightarrow \pi^*$  transitions of:

A) Conjugated polyenes

B) Alkenes, alkynes, nonconjugated polyenes and polyynes

C) Benzene at 184 nm, 204 nm

D) Benzene at 256 nm

160. Lidocaine is given either intravenously or intramuscularly because:

A) The drug undergoes 90% first-pass hepatic metabolism

B) The drug causes severe gastric irritation

C) The drug is inactivated by gastric acid

D) The drug causes severe nausea and vomiting

161. The drug of choice to treat torsades de pointes is:

A) Lignocaine

B) Procainamide

C) Bretylium

D) Magnesium sulphate

162. In a drug trial, one group showed 40% response and the group with the test drug showed 60% response. The two results can be statistically compared for significance by:

A) Chi-square test

B) Paired test

C) t-test with different measures

D) Fischer test

163. Declaration of Helsinki is related to:

- A) Qualitative research
- B) Ethical standards in research
- C) Genetics research
- D) Statistical methods in research

164. Lewis acid is a catalyst for all of the reactions EXCEPT:

- A) Friedel Craft's reaction
- B) Diel's Alder reaction
- C) Fries rearrangement
- D) Wittig reaction

165. The ART drug, which should be avoided in case of pregnancy is:

- A) Efavirenz
- B) Indinavir
- C) Lamivudine
- D) Zidovudine

166. Which of the following listed drugs is a protease inhibitors group of ARVs?

- A) Zidovudine (AZT)
- B) Efavirenz (EFZ)
- C) Nevirapine (NVP)
- D) Indinavir (IDV)

167. Severe lead poisoning is treated with:

- A) Succimer
- B) Naloxone
- C) Pyridoxine
- D) Atropine

168. Among the listed drugs, which has the shortest biological half-life:

<https://www.pyqonline.com>

- A) Adenosine



- B) Dobutamine
- C) Benzylpenicillin
- D) Amoxicillin

169. The cells that produce myelin in the central nervous system are called as \_\_\_\_.

- A) Neurocytes
- B) Astrocytes
- C) Oligodendrocytes
- D) Schwann cells

170. Retinol:

- A) Can be formed from retinoic acid
- B) Is transported from the intestine to the liver in chylomicrons
- C) Is the light-absorbing portion of rhodopsin
- D) Is phosphorylated and dephosphorylated during the visual cycle

171. A thermodynamically-controlled reaction will yield predominantly:

- A) The more/most stable product
- B) The product whose formation requires the smallest free energy of activation
- C) The product that can be formed in the fewest steps
- D) The product that is formed at the fastest rate

172. Arrange the following five events in the order they occur as erythrocytes are broken down:

1. Bilirubin is conjugated to glucuronic acid and excreted in bile
2. Biliverdin is produced
3. Free bilirubin is produced
4. Hemoglobin is broken down to heme groups and globin molecules

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

173. Phosphatidyl inositol (PIP<sub>2</sub>) breaks down to IP<sub>3</sub> and DAG by which enzyme?

- A) Phospholipase A
- B) Phospholipase B
- C) Phospholipase C
- D) Phospholipase D

174. What is the antonym for foster?

- A) Nourish
- B) Support
- C) Halt
- D) Cultivate

175. What will be the pH of 0.1 M solution of sodium acetate?

- A) Above 7
- B) 5.2
- C) Below 7
- D) 7

176. Dead cells in adult plants occur in:

- A) Xylem
- B) Cambium
- C) Leaf mesophyll
- D) Parenchyma

177. The unit of viscosity is:

- A) PA/sec
- B) Pa.sec
- C) kg.m/sec
- D) kg.m/s<sup>2</sup>

178. Chitin is polymer of:

- A) -GlcNAc b1,4 GlcNAc-
- B) -Gal b1,4 Gal-

C) -Gal a1,4 Gal-

D) -GlcNAc b1,3 GlcNAc-

179. Identify the amino acid with more than one chiral center.

A) Isoleucine

B) Valine

C) Arginine

D) Proline

180. Identify the tetrahedral carbon from the following.

A) The  $\alpha$ -carbon in amino acid

B) The carbon at carboxyl group of amino acid

C) Carbons in the phenyl alanine ring

D) Carbons in adenine ring

181. Piperidine alkaloid are biosynthesized from which amino acid?

A) Leucine

B) Isoleucine

C) Lysine

D) Tryptophan

182. Choose the right test for the following alkaloids:

1) Vitali — P. morphine

2) Murexide — Q. quinine

3) Thalleioquin — R. caffeine

4) Marquis — S. hyoscine

A) 1-S, 2-R, 3-Q, 4-P

B) 1-S, 2-P, 3-Q, 4-P

C) 1-R, 2-P, 3-S, 4-Q

D) 1-Q, 2-P, 3-S, 4-R

183. EPIGENESIS refers to:

- A) The detailed molecular mechanisms by which genes affect behavior
- B) A holistic perspective on genetic basis of behavior
- C) A level of scientific inquiry "above and beyond" traditional genetics
- D) The interaction of genes and their environment in causing behavior

184. Types of detectors in GC are:

- A) ECD
- B) UV
- C) RI
- D) FID

185. Match the cytotoxic drugs with the cytoprotective agents used to counter their toxicity.

- 1. Anthracyclines — P. Leucovorin
- 2. Cyclophosphamide — Q. Amifostine
- 3. Methotrexate — R. Dexrazoxan
- 4. Cisplatin — S. Mesna

- A) 1-S, 2-R, 3-Q, 4-P
- B) 1-R, 2-S, 3-P, 4-Q
- C) 1-R, 2-P, 3-S, 4-Q
- D) 1-Q, 2-P, 3-S, 4-R

186. Which of the following is an isomer of lawsone?

- A) 1,4-naphthoquinone
- B) Plumbagin
- C) Naphthazarin
- D) Juglone

187. Which of the following enjoys limited liability?

- A) A general partnership
- B) A corporation
- C) A sole proprietorship
- D) None of the above

188. Physostigmine and bethanechol in small doses have similar effects on all of the following EXCEPT:

- A) Neuromuscular junction (skeletal muscle)
- B) Salivary glands and gastric secretion
- C) Ureteral tone
- D) Sweat glands

189. What is synonym of impromptu?

- A) Significant
- B) Spontaneous
- C) Organized
- D) Imported

190. Find the odd one amongst the following.

- A) asibu
- B) oarse
- C) oinak
- D) zamol

191. Find ? in the sequence: 49, 343, 64, ?, 81, 729

- A) 1024
- B) 512
- C) 778
- D) 182

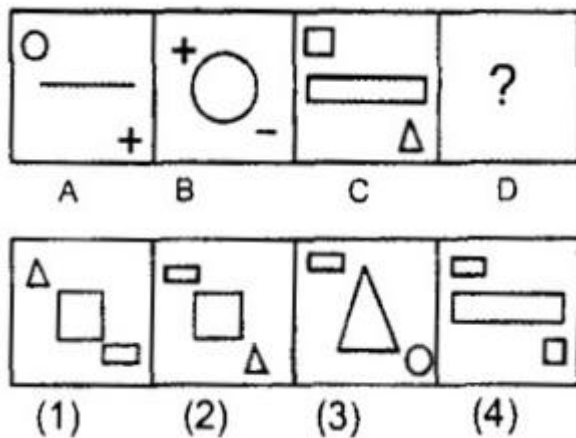
192. Two numbers are in the ratio 5:6 and if 4 is subtracted from each, they are reduced to 2:3, then the highest number is:

- A) 4
- B) 12
- C) 8
- D) 10

193. The first compulsory license is granted to NATCO for Nexavar. What is the active ingredient of it?

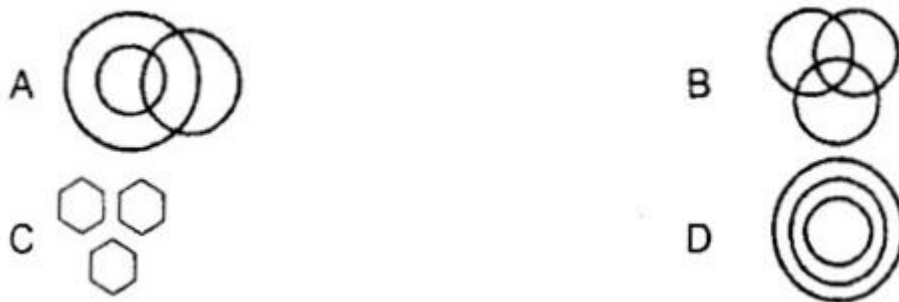
- A) Sorafenib tosylate
- B) Imatinib tosylate
- C) Sunitinib
- D) Rituximab

194. Find the figure at ?



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

195. Which of the following diagrams indicates the best relation between teacher, parents and guardians?



196. Drug Price Control Order 2013 imposes MRP restriction on \_\_\_\_\_ essential drugs.

- A) 28
- B) 78

C) 348

D) All except compendia drugs

197. Novartis lost patent right over its anti-cancer drug Glivec in India, because \_\_\_\_.

A) Novartis was selling imported drug at an unaffordable price to Indian patients.

B) Novartis had forged clinical trial records to obtain the patent.

C) Novartis had obtained patent only for Switzerland and not for India.

D) Novartis was "evergreening" the patent of the drug molecule.

198. What is antonym of ORNATE:

A) Spartan

B) Blemished

C) Sturdy

D) Temporary

199. The Intellectual Property Appellate Board, a statutory body under the Indian Patent Act:

A) Is above the High Court and below the Supreme Court

B) Is immune to a challenge in a High Court

C) Is a board where the controller has the right to appear before its legal proceedings

D) All of the above

200. PPIs work best if:

A) Taken before meal

B) Taken after meal

C) Taken with meal

D) Taken after meal before sleeping

### NIPER JEE 2014 ANSWER KEY

Que.	Ans.	Que.	Ans.	Que.	Ans.	Que.	Ans.	Que.	Ans.
1	C	41	A	81	D	121	B	161	D
2	C	42	B	82	A	122	B	162	A
3	A	43	B	83	C	123	D	163	B
4	D	44	C	84	B	124	C	164	D
5	A	45	A	85	A	125	B	165	A
6	B	46	A	86	D	126	A	166	D
7	A	47	B	87	C	127	D	167	A
8	B	48	C	88	D	128	D	168	A
9	C	49	D	89	A	129	B	169	C
10	C	50	B	90	D	130	A	170	B
11	A	51	A	91	B	131	B	171	A
12	B	52	B	92	B	132	A	172	D
13	D	53	B	93	C	133	D	173	C
14	B	54	A	94	C	134	B	174	C
15	C	55	A	95	B	135	C	175	A
16	B	56	B	96	B	136	B	176	A
17	A	57	A	97	B	137	C	177	B
18	A	58	C	98	A	138	D	178	A
19	B	59	B	99	B	139	D	179	A
20	A	60	D	100	C	140	B	180	A
21	B	61	D	101	C	141	B	181	C
22	C	62	A	102	C	142	A	182	A
23	D	63	A	103	A	143	D	183	D
24	B	64	C	104	D	144	A	184	D
25	D	65	D	105	D	145	C	185	B
26	D	66	A	106	A	146	C	186	D
27	C	67	D	107	A	147	B	187	B
28	A	68	B	108	C	148	C	188	A
29	A	69	D	109	C	149	B	189	B
30	D	70	A	110	D	150	C	190	D
31	A	71	B	111	B	151	D	191	B
32	D	72	C	112	D	152	C	192	C
33	A	73	A	113	A	153	A	193	A
34	D	74	D	114	A	154	A	194	A
35	B	75	A	115	A	155	D	195	B
36	B	76	C	116	D	156	B	196	C
37	A	77	C	117	A	157	A	197	D
38	C	78	C	118	A	158	C	198	A
39	A	79	A	119	C	159	A	199	C
40	C	80	D	120	B	160	A	200	A