

NIPER JEE PYQ 2015

1. Levetiracetam is used to treat:
 - a) Psychosis
 - b) Epilepsy
 - c) Amnesia
 - d) Parkinson's disease
2. Amphotericin exhibits a serious side effect as:
 - a) Nephrotoxicity
 - b) Neurotoxicity
 - c) Ototoxicity
 - d) GI toxicity
3. Umbelliferone is:
 - a) 4-hydroxycoumarin
 - b) 5-hydroxycoumarin
 - c) 6-hydroxycoumarin
 - d) 7-hydroxycoumarin
4. A strong signal at 3400 cm^{-1} in an IR spectrum indicates the presence of a(n):
 - a) -OH alcohol
 - b) -O-
 - c) C=O
 - d) -NH₂
5. The only blood cells that are not considered to be part of the immune system are:
 - a) The red blood cells
 - b) Fat cells
 - c) Glial cells
 - d) The osteocytes
6. People who cannot produce a complete ____ protein resist HIV infection:
 - a) CD₄
 - b) CCR₅
 - c) Cytotoxin
 - d) AIDS
7. Which statins are inactive lactone prodrugs that must be hydrolyzed to the active beta-hydroxy derivatives?

- a) Atorvastatin and Fluvastatin
 - b) Lovastatin and Simvastatin
 - c) Pravastatin and Simvastatin
 - d) Fluvastatin and Rosuvastatin
8. As per the nomenclature of prostaglandins, in the name PGE₂, E indicates solubility in:
- a) Ethanol
 - b) Ethylacetate
 - c) Ether
 - d) All of the above
9. Pure narcotic antagonists:
- a) Levallorphan
 - b) Pentazocine
 - c) Levarphanol
 - d) Naltrexone
10. Which of the following does not belong to the class of phenothiazines?
- a) Promazine
 - b) Clozapine
 - c) Thioridazine
 - d) Thiopropazate
11. Most recently, in 2015, Ranbaxy was taken over by:
- a) Daiichi
 - b) Sun Pharma
 - c) Piramal
 - d) Pfizer
12. Cisapride and fluconazole are not given together because of the probability of:
- a) Ventricular arrhythmia
 - b) Congestive heart disease
 - c) Blood dyscrasias
 - d) Neurotoxicity
13. Which of the following acts on the motilin receptors?
- a) Cisapride
 - b) Domperidone

- c) Metoclopramide
 - d) Erythromycin
14. Which of the following species is the most nucleophilic?
- a) NH_3
 - b) H_3P
 - c) H_2S
 - d) H_2O
15. Vijay Mallya has been appointed controversially as a board member or chairman of:
- a) Hoechst Pharmaceuticals Ltd
 - b) IDPL
 - c) Sun Pharma
 - d) Sanofi India Ltd
16. Reaction of a strong base with a tertiary alkyl halide is most likely to result in:
- a) No reaction
 - b) $\text{S}_{\text{N}}1$ substitution
 - c) E_2 elimination
 - d) E_1 elimination
17. In the electromagnetic spectrum, ____ frequencies, ____ wavenumbers, and ____ wavelengths are associated with high energy:
- a) High, Small, Long
 - b) Low, Large, Short
 - c) Low, Small, Short
 - d) High, Large, Short
18. Conversion of one of the conformations to another involves:
- a) Breaking σ bonds
 - b) Breaking π bonds
 - c) Rotation around σ bonds
 - d) Rotation around π bonds
19. Which of the following best describes the predicted ^1H NMR of tetrahydrofuran, the compound shown on the right?



- a) Doublet (4H), 1.5 ppm, triplet (4H), 3.8 ppm.
 - b) Triplet (4H), 1.5 ppm, triplet (4H), 3.8 ppm.
 - c) Triplet (4H), 1.5 ppm, doublet (4H), 3.8 ppm.
 - d) Either a or c could be correct.
20. Identify ω -3 acid:
- a) Linolenic acid
 - b) Linoleic acid
 - c) Eicosanoic acid
 - d) Arachidonic acid
21. Which of the following is not a true statement?
- a) Dioxanes are 6-membered ring ethers
 - b) Furans are 5-membered ring ethers
 - c) Oxiranes are 3-membered ring ethers
 - d) Oxetanes are 5-membered ring ethers
22. Esters and amides are most easily made by nucleophilic acyl substitution reactions on:
- a) Alcohols
 - b) Acid chlorides
 - c) Carboxylates
 - d) Carboxylic acid
23. Nifedipine belongs to which chemical class?
- a) 1,2-Dihydropyridine
 - b) 1,4-Dihydropyrimidine
 - c) 1,4-Dihydropyridine
 - d) 1,4-Dihydropyridine-4-one
24. The acronym CDSCO stands for:
- a) Control Drugs' Society Central Office
 - b) Central Drugs Standard Control Organization
 - c) Community Disease Spread Control Organization
 - d) None of the above

25. Urea cycle occurs in:
- a) Mitochondria
 - b) Cytoplasm
 - c) Mitochondria and cytosol
 - d) Kidney cells
26. The statin drugs are given at night:
- a) To decrease stomach upset
 - b) Because cholesterol synthesis increases at night
 - c) To increase absorption
 - d) Because food intake decreases absorption
27. The mode of action of ethylene oxide as a sterilization agent is by:
- a) Oxidation
 - b) Reduction
 - c) Alkylation
 - d) Protein precipitation
28. Blood and blood products are governed by which Schedule of the Drugs & Cosmetics Act 1940?
- a) Schedule B
 - b) Schedule C and C1
 - c) Schedule G
 - d) Schedule W
29. Indian Patent Controller General gave a compulsory license to NATCO to manufacture Bayer Pharma's anti-cancer drug 'Nexavar' because Bayer Pharma _____.
- a) Was 'evergreening' the patent of the drug molecule
 - b) Had forged clinical trial records to obtain the patent
 - c) Had obtained the patent only for Germany and not for India
 - d) Was selling the patented drug at an unaffordable price to Indian patients
30. MRT is defined as the ratio of:
- a) AUC to AUMC
 - b) AUMC to AUC
 - c) AUC to Vd
 - d) AUMC to Vd

31. Which of the following techniques would be most useful to identify and quantify the presence of a known impurity in a drug substance?
- a) NMR
 - b) MS
 - c) IR
 - d) HPLC
32. The ring system in lidocaine is:
- a) Xylenol
 - b) Cresol
 - c) Xylidine
 - d) Xylene
33. APS (Ammonium persulphate) is used in SDS-PAGE for:
- a) Preventing oxidation
 - b) Cross-linking
 - c) Its role as a catalyst
 - d) Free radical formation
34. In drug development, racemic switch is introduced for the synthesis of:
- a) Meso compounds
 - b) Racemic mixture
 - c) Eutomer
 - d) Distomer
35. Which of the following organisms is widely used as a biocontrol in organic farming?
- a) *Rhizobium tropicii*
 - b) *Trichoderma viridis*
 - c) *Fusarium oxysporum*
 - d) *Nostoc muscorum*
36. Instantaneous distribution to most body tissues and fluids is assumed in which of the following models?
- a) One-compartment model
 - b) Two-compartment model
 - c) Multi-compartment model
 - d) None of the above

37. Aspirin is not used in:
- a) Inflammation
 - b) Pain
 - c) Heart stroke
 - d) Peptic ulcer
38. Atropine, found in *Atropa belladonna*, is sometimes used in dilating pupils during an eye exam. Which of the following functional groups is NOT in atropine?
- a) Ketone
 - b) Ester
 - c) Alcohol
 - d) Benzene Ring
39. Which of the following effects would a kappa-selective agonist cause?
- a) Pinpoint pupils
 - b) Respiratory depression
 - c) Constipation
 - d) Urinary retention
40. Inhibition of arabinosyltransferase activity results from the administration of:
- a) Terbinafine
 - b) Pyrazinamide
 - c) Isoniazid
 - d) Ethambutol
41. Which is associated with vaginal carcinoma in female offspring?
- a) Diethylstilbestrol
 - b) Phenytoin
 - c) ACE inhibitors
 - d) Indomethacin
42. Which one of the following antimalignancy drugs is most nephrotoxic?
- a) Vincristine
 - b) Cisplatin
 - c) Cyclophosphamide
 - d) Methotrexate
43. Which one of the following microscopic techniques can be used to study the contour of proteins?

- a) Confocal microscopy
 - b) TEM
 - c) AFM
 - d) SEM
44. The action of insulin is potentiated by:
- a) Sulphonylureas
 - b) Glucagon
 - c) Biguanides
 - d) None of the above
45. Cyproheptadine has all of the following actions EXCEPT:
- a) Antimuscarinic actions
 - b) Antihistaminic actions
 - c) Antiserotonergic actions
 - d) Antiadrenergic actions
46. Which one is the correct order of drug release?
- a) Disintegration, Disaggregation, Dissolution, Dissociation
 - b) Disaggregation, Disintegration, Dissolution, Dissociation
 - c) Disintegration, Disaggregation, Dissociation, Dissolution
 - d) Disaggregation, Disintegration, Dissociation, Dissolution
47. Chirality of DNA is due to:
- a) The bases
 - b) Base stacking
 - c) Hydrogen bonds between bases
 - d) Deoxyribose
48. Design of experiments implies:
- a) Good instruments used in the lab
 - b) Team meetings in product trials
 - c) A method to find factor effects
 - d) Aesthetic quality of products
49. The half-life of the first-order reaction is independent of:
- a) Square of final substrate
 - b) Initial substrate concentration

- c) Final substrate concentration
 - d) Cube root of final substrate concentration
50. Which of the following effects can be explained by Franck-Condon Principle?
- a) Overtone in IR spectrum
 - b) Combination mode in vibrational spectrum
 - c) Largest intensity of fundamental
 - d) Largest intensity of overtone
51. When 1-pentanol is heated with HCl/ZnCl₂, 1-chloropentane is the major organic product. The reaction proceeds through an ____ mechanism, and ____ is produced as a by-product:
- a) S_N1, H₂
 - b) S_N2, H₂O
 - c) S_N1, H₂O
 - d) S_N2, H₂
52. Which of the following m/z values is the base peak for benzyl alcohol (PhCH₂OH)?
- a) 77
 - b) 108
 - c) 91
 - d) 17
53. Prodrugs cannot have different modes of:
- a) Absorption
 - b) Excretion
 - c) Metabolism
 - d) Mode of action
54. An amendment was introduced in the Drugs & Cosmetics Act 1940 to prohibit advertisement of drugs specified in Schedule H, Schedule H1, or Schedule X. When was this amendment introduced?
- a) April 2015
 - b) March 2013
 - c) May 2012
 - d) April 2008
55. Bilobalide, a chemical constituent of *Ginkgo biloba*, is:
- a) Monoterpenoid
 - b) Sesquiterpenoid

- c) Diterpenoid
 - d) Triterpenoid
56. Domperidone is:
- a) Antimotility
 - b) Promotility
 - c) D₂ agonist
 - d) Muscarinic antagonist
57. *Convolvulus pluricaulis* L. (Fam. *Convolvulaceae*) is commonly known as:
- a) Shatavari
 - b) Gurmar
 - c) Ashwagandha
 - d) Shankhpushpi
58. What is the maximum shelf life in months permissible under the Drugs and Cosmetics Act?
- a) 24 months
 - b) 36 months
 - c) 48 months
 - d) 60 months
59. Which of the following words does not appear in the official definition of 'drug' in India?
- a) Prevention
 - b) Cure
 - c) Diagnosis
 - d) Mitigation
60. An inanimate object that transmits infectious agents between hosts is most appropriately called:
- a) Fomite
 - b) Carrier
 - c) Vector
 - d) Reservoir
61. NMR spectrum of diethyl ether shows:
- a) One signal as singlet
 - b) Two signals, each as singlet
 - c) Two signals, each as doublet
 - d) Two signals, one as quartet and one as triplet

62. The enzyme needed to produce cDNA from an mRNA transcript is:
- a) Restriction endonuclease
 - b) Reverse transcriptase
 - c) Ligase
 - d) RNA polymerase
63. Coumarin is:
- a) 2H-Chromen-2-one
 - b) 4H-Chromen-4-one
 - c) 2H-Chromene
 - d) 2H-1-Benzopyran
64. The potassium channel opener is:
- a) Retigabine
 - b) Lesinurad
 - c) Edoxaban
 - d) Ivabradine
65. Conversion of tryptophan to serotonin involves which set of reactions?
- a) Hydroxylation and amination
 - b) Hydroxylation and decarboxylation
 - c) Decarboxylation and amination
 - d) Decarboxylation and β -hydroxylation
66. The red color of red chili is because of:
- a) Capsanthin
 - b) Capsaicin
 - c) Camptothecin
 - d) Crocin
67. Identify the (-)ssRNA filovirus that was in the news recently:
- a) Swine flu
 - b) Ebola
 - c) Dengue
 - d) Zika
68. Which of the following are "concerted" reactions?
- a) S_N1 and S_N2
 - b) E_1 and E_2

- c) S_N1 and E₁
 - d) S_N2 and E₂
69. For OTC oral products intended for children under 6 years of age, the recommended alcohol content limit is:
- a) 0.20%
 - b) 0.50%
 - c) 0.80%
 - d) 1.00%
70. The requirement and guidelines for contract research come in which Schedule?
- a) Sch M
 - b) Sch Y-1
 - c) Sch C
 - d) Sch X
71. Which of the following alpha-glucosidase inhibitors is a polysaccharide?
- a) Miglitol
 - b) Viglibiose
 - c) Acarbose
 - d) Glucagon
72. Which receptor has a heptahelical structure?
- a) Metabotropic
 - b) Tyrosine kinase
 - c) Ionotropic
 - d) Nuclear
73. Which of the parenchymal cells have the deposition of lignin?
- a) Chlorenchyma
 - b) Collenchyma
 - c) Sclerenchyma
 - d) Epidermis
74. Choose the lettered pair that expresses a relationship most similar to the capitalized pair:
LACHRYMOSE: TEARS
- a) Effusive: Requests
 - b) Ironic: Jests

- c) Morose: Speeches
 - d) Verbose: Words
75. Which gas is used in the determination of true density in a pycnometer?
- a) Argon
 - b) Helium
 - c) Oxygen
 - d) CFC
76. Weak bands at 2750 and 2850 cm^{-1} seen in the IR spectrum of aldehydes are because of:
- a) Fundamental vibrations
 - b) Conjugation
 - c) Overtone
 - d) Fermi resonance
77. Bt cotton is:
- a) A cotton variety obtained by crossing two different cotton plants
 - b) A cotton variety brought from South America
 - c) An insecticide sprayed on a cotton plant
 - d) A transgenic cotton variety
78. RNA interference works on the principle:
- a) RNA interference
 - b) Silencing of a specific mRNA
 - c) Prevents translation of RNA
 - d) RNA destruction
79. The enzyme used in PCR is:
- a) Taq polymerase
 - b) PRPP synthetase
 - c) Reverse transcriptase
 - d) Primase
80. DNA Fingerprinting was developed by:
- a) Alec Jeffreys
 - b) Werner Arber
 - c) Hamilton Smith
 - d) Daniel Nathans

81. ACE inhibitors:
- a) Increase secretion of aldosterone
 - b) Decrease secretion of aldosterone
 - c) Increase secretion of vasopressin
 - d) Decrease secretion of ANP
82. Starting material for the synthesis of propranolol:
- a) α -Naphthol
 - b) β -Naphthol
 - c) Naphthalene
 - d) α -Naphthylamine
83. USP Type V dissolution apparatus is used for testing of:
- a) Sustained-release tablets
 - b) Suppositories
 - c) Topical and transdermal products
 - d) Capsules filled with pellets
84. Drug prices in India are decided by which regulatory agency?
- a) NPPA
 - b) CDSCO
 - c) DCGI
 - d) OPPI
85. Which word is the opposite of "hypothesize"?
- a) Posit
 - b) Speculate
 - c) Conjecture
 - d) Refute
86. 0.1 M NaCl is ____ ppm:
- a) 58000
 - b) 5800
 - c) 580
 - d) 58
87. Karl Fischer reagent is standardized with:
- a) Sodium iodide
 - b) Copper sulfate pentahydrate

- c) Sodium tartrate dihydrate
- d) Sodium thiosulfate

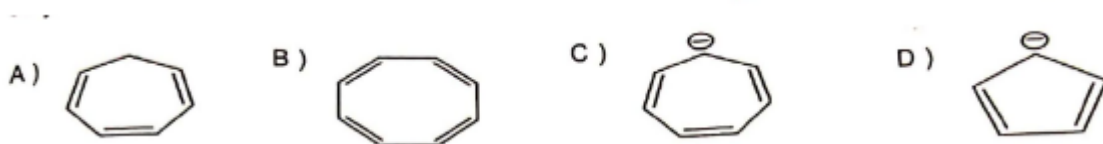
88. Which is the common intermediate for glucose metabolism and TCA cycle?

- a) Isocitrate
- b) Citrate
- c) Acetyl CoA
- d) β -Hydroxybutyrate

89. Drug approved by USFDA in 2015 for stroke is:

- a) Ivabradine
- b) Sacubitril
- c) Edoxaban
- d) Selexipag

90. Only one of the following compounds is aromatic. Which one?



91. DEPT experiment in NMR is used to distinguish between:

- a) Primary, secondary, and tertiary carbon atoms in a molecule
- b) Near and distant coupling in ^{13}C atoms in a molecule
- c) NMR-active and NMR-inactive carbon atoms in a molecule
- d) All of the above

92. Eucalyptus oil is isolated from leaves by process of:

- a) Solvent extraction
- b) Azeotropic distillation
- c) Steam distillation
- d) Leaching

93. Which organism is known as the natural genetic engineer of plants?

- a) *Agrobacterium radiobacter*
- b) *Escherichia coli*
- c) *Agrobacterium tumefaciens*
- d) *Streptomyces* sp.

94. Which of the following is a derived property?

- a) Solubility

- b) pKa
 - c) Particle size
 - d) Bulk density
95. A drug has $pK_a = 7.5$. Comment on its absorption pattern:
- a) Poorly absorbed from stomach
 - b) Poorly absorbed from intestine
 - c) Poorly absorbed throughout GIT
 - d) Absorbed only in rectum
96. Drug of choice for treatment of mild hypoglycemia in obese patients is:
- a) Insulin
 - b) Metformin
 - c) Repaglinide
 - d) Glibenclamide
97. Tamoxifen is used in the treatment of breast cancer. It acts as:
- a) Agonist of ER
 - b) Antagonist of ER
 - c) Aromatase inhibitor
 - d) 5α -reductase inhibitor
98. Which of the following is an antagonist of both α and β receptors?
- a) Propranolol
 - b) Prazosin
 - c) Labetalol
 - d) Metoprolol
99. Following are the symptoms of which poisoning: pinpoint pupils, photophobia, blurred vision?
- a) Mushroom
 - b) Morphine
 - c) Belladonna
 - d) Organophosphorus
100. Drug of choice for treating organophosphorus poisoning is:
- a) Pralidoxime + Atropine
 - b) Acetylcholine

- c) Neostigmine + Pralidoxime
 - d) Acetyl CoA
101. Which of the following is not a use of metronidazole?
- a) *Helicobacter pylori* infection
 - b) Gingival hyperplasia
 - c) Streptococcal infection
 - d) Pseudomembranous colitis
102. Which of the following is not one of the 4P's of marketing?
- a) Product and price
 - b) Philosophy
 - c) Place
 - d) Promotion
103. Secondary hyperlipidemia is an adverse effect of:
- a) Glucocorticoid
 - b) β -blocker
 - c) Thiazide
 - d) All of the above
104. Which disorder shows excessive daytime sleepiness as a symptom?
- a) Narcolepsy
 - b) Sleep apnea
 - c) Both A and B
 - d) Neither A nor B
105. Which of the following is a part of the mitochondrial complex?
- a) Enzyme
 - b) DNA
 - c) Ribosome
 - d) All of the above
106. Which of the following will NOT show a positive iodoform reaction?
- a) 2-Butanone
 - b) 3-Hexanone
 - c) 2-Pentanol
 - d) Acetaldehyde

107. What is the mechanism of action of infliximab?
- a) Programmed cell death receptor antagonist
 - b) TNF- α antagonist
 - c) Interleukin antagonist
 - d) Anti-CD20
108. MDI propellants show which property?
- a) Boiling point more than 30°C - 60°C
 - b) Vapor pressure of 40 to 80 psig
 - c) Density $\sim 0.05 \text{ g/cm}^3$
 - d) Soluble with drug
109. Weight variation limit for uncoated tablets with an average weight of 130-324 mg is:
- a) 15%
 - b) 10%
 - c) 7.5%
 - d) 5%
110. Which of the following is not used in the determination of moisture content?
- a) IR balance
 - b) KF titration
 - c) TGA
 - d) HPLC
111. The reason for the display of Gray baby syndrome in neonates on chloramphenicol therapy is:
- a) Excess expression of glucuronyl transferase
 - b) Limited expression of glucuronyl transferase
 - c) Hypersecretion of bilirubin
 - d) Degradation of gray matter
112. Carbocation stability increases in the order $3^\circ > 2^\circ > 1^\circ > -\text{CH}_3$. What is the reason?
- a) Only positive inductive effect
 - b) Only hyperconjugation
 - c) Positive inductive effect and hyperconjugation
 - d) Negative mesomeric effect and inductive effect
113. Which of the following is the closest derivative of dopamine?
- a) Mescaline

- b) Ricinine
 - c) Ephedrine
 - d) Galantamine
114. Warfarin is a derivative of:
- a) 2-Hydroxy coumarin
 - b) 4-Hydroxy coumarin
 - c) Vitamin K analogue
 - d) Calmodulin
115. Which of the following is not an enzyme-linked receptor?
- a) Growth factor
 - b) Glucocorticoid
 - c) Thyroid
 - d) Acetylcholine
116. Plasticizers are used in tablet coating materials to:
- a) Help atomization
 - b) Increase gloss
 - c) Increase Tg
 - d) Decrease Tg
117. Neural tube defects are the adverse effect of all EXCEPT:
- a) Phenytoin
 - b) Valproic acid
 - c) Folic acid
 - d) Carbamazepine
118. Which defect of the tablet coating can be prevented by replacing a low-melting polymer with a high-melting polymer?
- a) Blistering
 - b) Picking
 - c) Blooming
 - d) Orange peel effect
119. Which of the following is prescribed with isoniazid?
- a) Vitamin A
 - b) Vitamin B

- c) Vitamin C
 - d) Vitamin D
120. Which of the following is NOT a short-acting benzodiazepine?
- a) Diazepam
 - b) Alprazolam
 - c) Midazolam
 - d) Lorazepam
121. A car travels 8 km in the first quarter of an hour, 6 km in the second quarter, and 16 km in the third quarter.
- The average speed of the car in km per hour over the entire journey is:
- a) 30
 - b) 36
 - c) 40
 - d) 24
122. Soft gelatin capsules are dried by which method?
- a) Sun drying
 - b) Microwave drying
 - c) Vacuum drying
 - d) Fluid bed drying
123. Which statement about gelatin is CORRECT?
- a) Type A gelatin has 78-80 mmoles of free carboxyl gr./100 g of protein & pI of 4.7-5.2
 - b) Type A gelatin has 100-115 mmoles of free carboxyl gr./100 g of protein & pI of 7.0-9.0
 - c) Type B gelatin has 78-80 mmoles of free carboxyl gr./100 g of protein & pI of 7.0-9.0
 - d) Type B gelatin has 100-115 mmoles of free carboxyl gr./100 g of protein & pI of 4.7-5.2
124. Mixing of the consistency upon application of stress is the behavior shown by:
- a) Plastic
 - b) Pseudoplastic
 - c) Dilatant
 - d) Newtonian
125. Which of the following is a water-insoluble cellulose derivative?
- a) Methyl cellulose
 - b) Ethyl cellulose

c) HPMC

d) CMC

126. Match the technique with the inventor/discoverer:

1. PCR technique - P. Milstein & Köhler
 2. Hybridoma technology - Q. Fire & Mello
 3. DNA technology - R. Kary Mullis
 4. Interference RNA - S. Cohen & Boyer
- a) 1-S, 2-R, 3-P, 4-Q
b) 1-S, 2-R, 3-Q, 4-P
c) 1-R, 2-P, 3-S, 4-Q
d) 1-S, 2-P, 3-Q, 4-R

127. TWEEN 80 is called as:

- a) Polyoxyethylenesorbitanmonooleate
- b) Polyoxyethylenesorbitanmonopalmitate
- c) Polyoxyethylenesorbitanmonostearate
- d) Polyoxyethylenesorbitanmonolaurate

128. Shanti Swaroop Bhatnagar Prize is named after the founder Director General of:

- a) IISc
- b) BARC
- c) CSIR
- d) ISI

129. Neoprene is composed of:

- a) Isoprene
- b) Chloroprene
- c) Butadiene
- d) Styrene

130. Bingham bodies show ____ flow:

- a) Linear plastic
- b) Plastic dilatant
- c) Pseudoplastic
- d) Viscoelastic

131. Kyoto Protocol is a treaty related to:
- a) Clinical trials of drugs
 - b) Greenhouse effect
 - c) International trade
 - d) Use of nuclear energy
132. The Ig Nobel Prizes are a parody of the Nobel Prizes and are given each year for ten unusual or trivial achievements in scientific research. They are awarded in:
- a) Sweden
 - b) Norway
 - c) Philippines
 - d) USA
133. The most important receptor involved in cytotoxic drug-induced vomiting is:
- a) Serotonin 5-HT₃ receptor
 - b) Histamine H₁ receptor
 - c) Opioid receptor
 - d) Dopamine D₂ receptor
134. Select among the given choices that is most nearly opposite to the word "AUTONOMY":
- a) Submissiveness
 - b) Dependence
 - c) Subordination
 - d) Slavery
135. All of the following are used in PCR EXCEPT:
- a) Taq polymerase
 - b) Restriction enzyme
 - c) Oligonucleotide primers
 - d) Deoxynucleoside triphosphate
136. Which of the following is a common enzyme for de novo as well as the salvage pathway of purine biosynthesis?
- a) Amidotransferase
 - b) PRPP synthetase
 - c) HGPRTase
 - d) Adenylsuccinatesynthetase

137. Which of the following is a Lewis base?
- a) AlF_3 , AlBr_3
 - b) SiF_4 , TiCl_4
 - c) H_2O , CH_3SCH_3
 - d) BH_3 , HF
138. Hemoglobin can bind to how many oxygen atoms?
- a) 4
 - b) 3
 - c) 2
 - d) 1
139. Tay-Sachs disease is the result of a genetic defect in the metabolism of:
- a) Triacylglycerols
 - b) Vitamin D
 - c) Sterols
 - d) Gangliosides
140. Cyclodextrin is used to increase the bioavailability of:
- a) BCS class I
 - b) BCS class II
 - c) BCS class III
 - d) BCS class IV
141. Coalescence in emulsion is prevented by:
- a) Phase inversion
 - b) Decreasing size of droplets
 - c) Decreasing viscosity of the continuous phase
 - d) All of the above
142. Formation of crystal along with entrapped solvent is called:
- a) Amorphous
 - b) Hydrate
 - c) Pseudopolymorphism
 - d) Solvate
143. Which of the following drugs inhibits peripheral COMT and is used to increase the bioavailability of L-dopa?
- a) Carbidopa

- b) Selegiline
 - c) Entacapone
 - d) Pramipexole
144. Gentamicin is obtained from:
- a) *Micromonospora purpurea*
 - b) *Streptomyces griseus*
 - c) *Bacillus subtilis*
 - d) *Streptomyces spheroids*
145. Allenes exhibit optical isomerism due to the presence of:
- a) Asymmetric carbon atom
 - b) Cumulated double bond
 - c) Conjugated double bond
 - d) Isolated double bond
146. Which of the following would react faster with N-bromosuccinimide?
- a) Benzene
 - b) Toluene
 - c) Methane
 - d) Pyridine
147. The nucleophilicity of different halide ions in polar aprotic solvent is:
- a) $F^- > Cl^- > Br^- > I^-$
 - b) $F^- < Cl^- < Br^- < I^-$
 - c) $F^- = Cl^- = Br^- > I^-$
 - d) $Cl^- > Br^- > I^- > F^-$
148. OsO₄ is used for the dihydroxylation of alkenes. The stereochemistry of the two hydroxyl groups is:
- a) Vicinal and syn
 - b) Geminal and syn
 - c) Vicinal and anti
 - d) None of the above
149. What should come in place of the question mark (?) in the following number series:
22, 66, 132, 792, ?
- a) 1584
 - b) 2376

- c) 1246
d) 2674
150. Supramolecular chemistry is:
a) Chemistry beyond the molecule
b) Involves non-covalent interactions
c) Both (A) and (B)
d) None of the above
151. Given below are words, three of which belong to the same category. Find the word which does not belong to that category:
a) Danger
b) Peril
c) Jeopardy
d) Innocuous
152. The number of bacteria in a test tube doubles every 3 minutes. If at the end of 1 hour there are N bacteria in the test tube, at the end of how many minutes were there exactly $N/4$ bacteria?
a) 51
b) 54
c) 56
d) 58
153. "There is plenty of room at the bottom." This was stated by:
a) Isaac Newton
b) Albert Einstein
c) Richard Feynman
d) Eric Drexler
154. α,β -unsaturated carbonyl compounds undergo a ring closure reaction with conjugated dienes. The reaction is called as:
a) Hofmann Reaction
b) Perkin Reaction
c) Diels-Alder Reaction
d) Cope Rearrangement
155. Which of the binary systems form an ideal solution?
a) Benzene and Toluene

- b) Acetic acid and water
 - c) Dichloromethane and water
 - d) Acetone and ethanol
156. The polydispersity index is:
- a) Ratio of mass average molar mass to number average molar mass
 - b) Ratio of number average molar mass to mass average molar mass
 - c) Sum of mass average molar mass to number average molar mass
 - d) Equal to mass average molar mass
157. The phosphorescence spectrum of the excited species is due to:
- a) Singlet to triplet transition
 - b) Triplet to singlet transition
 - c) Vibrational mode
 - d) Electron spin transition
158. The property which depends upon the number rather than the nature of the dissolved particles in a solution is called:
- a) General
 - b) Colligative
 - c) Isotonic
 - d) Isoelectronic
159. Filter aid is used:
- a) To increase the rate of filtration
 - b) To decrease the pressure drop
 - c) To increase the porosity of cake
 - d) As a support base for the system
160. What is the ratio of the actual mesh dimension of a Taylor series to that of the next smaller screen?
- a) 1
 - b) $\sqrt{2}$
 - c) 1.5
 - d) 3
161. The ideal solutions obey:
- a) Charles' Law
 - b) Boyle's Law

- c) Raoult's Law
 - d) Duhring Law
162. How many stages are there in the Product Life Cycle?
- a) 3
 - b) 5
 - c) 4
 - d) None of the above
163. The Consumer Protection Act was passed in the year:
- a) 1975
 - b) 1949
 - c) 1993
 - d) 1986
164. The technique used for classifying inventory according to value of usage is called:
- a) XYZ Analysis
 - b) VED Analysis
 - c) ABC Analysis
 - d) DCF Analysis
165. Design of experiments:
- a) Identifies which variables have the most influence on a quality outcome
 - b) Identifies which quality outcomes are most important
 - c) Determines what a quality outcome is
 - d) Is a method for research and development
166. The solubility of sodium phenobarbitone is greatest in:
- a) Aqueous buffer of pH 10
 - b) Aqueous buffer of pH
 - c) Dilute hydrochloric acid purified
 - d) Water
167. Which of the following is not an alkaloid?
- a) Cocaine
 - b) Mesitylene
 - c) Nicotine
 - d) Mescaline

168. Which of the following is non-patentable as per the latest Indian Patents Act 1970?
- a) A genetically modified microorganism
 - b) A novel machine for ECG
 - c) A new method of cardiac surgery
 - d) A novel method of active ingredient extraction from known plants
169. Clavulanic acid inhibits bacterial growth because it is:
- a) β -lactamase inhibitor
 - b) Non-progressive inhibitor
 - c) Extends the spectrum of penicillin
 - d) None of the above
170. Which effect is produced by 5-Hydroxytryptamine that is mediated by the 5-HT₃ receptor?
- a) Platelet aggregation
 - b) Bradycardia
 - c) Release EDRF
 - d) Vasoconstriction
171. Geraniol on oxidation gives:
- a) Nerol
 - b) Geranial
 - c) Citral
 - d) Linalool
172. Influenza virus binds to its host cells through which of the following carbohydrate moieties?
- a) N-acetyl glucosamine
 - b) N-acetyl muramic acid
 - c) N-acetyl neuraminic acid
 - d) Fucose
173. Which of the following chemotherapeutic drugs has neurotoxicity?
- a) Vincristine
 - b) Cyclophosphamide
 - c) Cisplatin
 - d) Adriamycin
174. Type II allergic/hypersensitivity reactions are also called:
- a) Immediate or anaphylactic type
 - b) Antibody-dependent cytotoxic type

- c) Immune complex-mediated type
 - d) Lymphocyte-mediated type
175. Following ACE inhibitors are prodrugs, EXCEPT:
- a) Ramipril
 - b) Lisinopril
 - c) Quinapril
 - d) Fosinopril
176. Which of the following is for Environment Management?
- a) ISO-31000
 - b) ISO-26000
 - c) ISO-14000
 - d) ISO-9000
177. When a solution of an organic compound absorbs light whose wavelength is 700 nm, the solution appears:
- a) Yellow
 - b) Red
 - c) Green
 - d) Purple
178. A bioinformatics tool used to find the sequence similarity in the subunit of hemoglobin is:
- a) BLAST
 - b) HUMMER
 - c) FASTA
 - d) PSI:PLOT
179. What does CoMFA stand for in 3D QSAR?
- a) Compound molecular formula assessment
 - b) Compound mass field analysis
 - c) Comparative molecular field analysis
 - d) Comparative modeling force field analysis
- A benzodiazepine that is converted into active form by gastric juice is:
- a) Alprazolam
 - b) Clorazepate
 - c) Midazolam
 - d) Chlordiazepoxide

180. What does a negative value of σ signify for a substituent?
- a) It is electron donating
 - b) It is electron withdrawing
 - c) It is neutral
 - d) It is hydrophobic
181. Mala-N contains:
- a) Estradiol
 - b) Norethisterone
 - c) D-norgestrel
 - d) Norepinephrine
182. In India, the Drugs Controller General of India (DCGI) can issue an order to ban a drug on the recommendation of:
- a) Indian Council of Medical Research
 - b) Pharmacy Council of India
 - c) Drug Technical Advisory Board
 - d) National Pharmaceutical Advisory Board
183. Agglomeration in aerosols can be reduced by including:
- a) Anionic surfactants with HLB greater than 10
 - b) Cationic surfactants with HLB less than 10
 - c) Non-ionic surfactants with HLB greater than 10
 - d) Non-ionic surfactants with HLB less than 10
184. Complexes of which of the following metals are used in the treatment of rheumatoid arthritis?
- a) Gold
 - b) Ruthenium
 - c) Iron
 - d) Copper
185. The K-lines in an atomic X-ray spectrum correspond to:
- a) Transitions from lower to higher energy levels
 - b) Electron-electron collisions
 - c) Absorption and emission of high-energy photons
 - d) Transitions from upper energy levels to the innermost shell of the atom

186. Standard addition techniques are used to:
- a) Compensate for the sample matrix
 - b) Obtain calibration curves
 - c) Measure the spectrum of mixtures
 - d) Calculate the average of a measurement
- 187) Which classes of compounds are found in the highly deshielded region of an NMR spectrum?
- a) sp^3 hybridized alkanes
 - b) Alkenes and sp^2 hybridized alkanes
 - c) TMS
 - d) Carboxylic acids, aromatics, aldehydes
- 188) Which of the following plants may be of use in Alzheimer's disease due to its ability to enhance concentration and short-term memory?
- a) Ephedra
 - b) Catharanthus
 - c) Hypericum
 - d) Ginkgo
- 189) The relationship between the size of a particle and its speed due to Brownian motion is defined by ____ equation:
- a) Stokes-Einstein
 - b) Navier Stokes
 - c) Bose-Einstein
 - d) Brown
- 190) If the number $517*324$ is completely divisible by 3, then the smallest whole number in the place of * will be:
- a) 0
 - b) 1
 - c) 2
 - d) None of these
- 191) Which is odd among the following numbers? 8, 27, 64, 100, 125, 216, 343
- a) 27

- b) 100
- c) 125
- d) 343

192) There is a certain pattern in the numbers given in the diagram & find out the pattern and select the right answer from amongst the options for the ?.

3 370 7
 2 224 6
 1 730 x

- a) 5
- b) 8
- c) 9
- d) 11

193) In the given number series, there is a specific relation in the numbers. Find out the correct answer from the options given 6, 11, 20, 37, _____.

- a) 51
- b) 59
- c) 70
- d) 73

194) If GROWTH = 579312, Then THROW = ?

- a) 12793
- b) 21793
- c) 21973
- d) 21379

195) Which of the following monoclonal antibodies is used against asthma?

- a) Rituximab
- b) Omalizumab
- c) Trastuzumab
- d) Etanercept

196. Match the following:

1. D-glucose and D-mannose → P. Galactose 1 α 4 glucose
 2. β -D-glucose and β -D-glucose → Q. Glucose 1 α 4 glucose
 3. Lactose → R. Epimeric pair
 4. Maltose → S. Anomeric pair
- a) 1-Q, 2-R, 3-P, 4-Q
 - b) 1-S, 2-R, 3-Q, 4-P
 - c) 1-R, 2-P, 3-S, 4-Q
 - d) 1-R, 2-S, 3-P, 4-Q

197. Prolactin inhibition is caused by:

- a) Dopamine
- b) Bromocriptine antagonist
- c) CRH
- d) Acetylcholine

198. Nephrogenic diabetes insipidus is treated by:

- a) Thiazides
- b) Carbamazepine
- c) Vasopressin
- d) Cyclophosphamide

199. Match the enzymes with their inhibitors:

1. Topoisomerase I inhibitor → P. Vincristine
 2. Topoisomerase II inhibitor → Q. Leutrozone
 3. Tubulin inhibitor → R. Etoposide
 4. Aromatase inhibitor → S. Irinotecan
- a) 1-S, 2-R, 3-P, 4-Q
 - b) 1-S, 2-Q, 3-P, 4-R
 - c) 1-R, 2-S, 3-Q, 4-P
 - d) 1-R, 2-S, 3-P, 4-Q

200. Which of the following is a cofactor but not a coenzyme?

- a) Cu^{++}
- b) NAD
- c) Biotin
- d) Thiamine pyrophosphate

NIPER JEE 2015 ANSWER KEY

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