

NIPER JEE 2017

1) Which of the following compounds containing chiral carbons is optically inactive?

- A) (R)-Lactic acid
- B) (R,R)-Tartaric acid
- C) (R,S)-Tartaric acid
- D) Glycine

2) An important intermediate in the biosynthetic pathway to aromatic amino acids is:

- A) α -Ketoglutarate
- B) Lactate
- C) Orotate
- D) Shikimate

3) The number of isomers of glucose:

- A) 4
- B) 8
- C) 12
- D) 16

4) Identify a uterine relaxant:

- A) Dinoprostone
- B) Oxytocin

C) Magnesium sulfate

D) Ergotamine

5) Ethylene oxide sterilized products require _____ hours of aeration at 140°F:

A) 12

B) 10

C) 8

D) Cannot be aerated at 140°F

6) When did the Right to Information Act come into force?

A) 2003

B) 2005

C) 2009

D) 2014

7) Acetylenic protons are shielded due to _____ effect:

A) Inductive

B) Hybridisation

C) Resonance

D) Diamagnetic anisotropy

8) The base peak in EIMS of acetophenone is:

A) 120

B) 105

C) 77

D) 65

9) The reference compound used in ESR spectroscopy is:

A) Diphenylpicrylhydrazyl radical

B) Diphenylpicrylhydrazine

C) Diphenylpicrylhydrazine dehydrate

D) Diphenylpicrylhydrazinium iodine

10) Short sequence of DNA used for identification of complementary sequence is called:

A) Probe

B) Marker

C) Aptamer

D) Expressed sequence tag

11) *Agrobacterium tumefaciens* can bring about horizontal transfer of genes into plants via:

A) Transposons

B) Chromosomes

C) Plasmids

D) Cosmids

12) Sarcoma is cancer of:

A) Skin

- B) Blood
- C) Connective Tissue/Organ
- D) Epithelial cells

13) Honey contains the hydrolytic product of:

- A) Lactose
- B) Maltose
- C) Inulin
- D) Starch

14) Polyunsaturated could be used to describe which fatty acid?

- A) Palmitic
- B) Stearic
- C) Oleic
- D) Arachidonic

15) Cofactor associated with the enzyme glutathione peroxidase is:

- A) Zinc
- B) Cadmium
- C) Molybdenum
- D) Selenium

16) In hemoglobin, iron is bound to:

- A) Histidine

- B) Leucine
- C) Isoleucine
- D) Valine

17) Which of the following is a polar aprotic solvent?

- A) Toluene
- B) CCl_4
- C) DMF
- D) Acetic acid

18) The injectable protein drug which is incretin mimetic antidiabetic is:

- A) Exenatide
- B) Repaglinide
- C) Vidagliptin
- D) Pegylated insulin

19) Acetylneuraminic acid is an example of:

- A) Sialic acid
- B) Mucic acid
- C) Glucuronic acid
- D) Hippuric acid

20) Which of the following modifications leads to protein degradation?

- A) Methylation

- B) Acetylation
- C) Acylation
- D) Ubiquitination

21) The color of a gold nanoparticle is determined by its:

- A) Size
- B) Age
- C) Density
- D) Mass

22) Substrate combines more firmly with enzyme, when:

- A) K_m is high
- B) K_i is high
- C) K_i is low
- D) K_m is low

23) Which method detects the smallest particles?

- A) Scanning Tunneling Microscopy
- B) Atomic Force Microscopy
- C) Scanning Electron Microscopy
- D) Microfluidics

24) Phenanthrene is more stable than its linear isomer anthracene. This is explained on basis of:

- A) Clar's rule

- B) Huckel's rule
- C) Bredt's rule
- D) Duckworth rule

25) Water-soluble flavonoid polymers are:

- A) Flavanols
- B) Isoflavonoids
- C) Tannins
- D) Anthocyanins

26) Zica virus is _____ transmitted by _____.

- A) Flavivirus, mosquito
- B) Hepacivirus, sandfly
- C) Pegivirus, aphid
- D) Pestivirus, housefly

27) Which drugs are metabolized to products that irreversibly inhibit the metabolizing?

- A) CYP3A4 inhibitor
- B) Slow acetylators
- C) Suicide inhibitors
- D) Pgp inhibitors

28) Optical fibers used in communication system works on the principle of:

- A) Refraction
- B) Total internal reflectance
- C) Diffraction
- D) Polarization

29) Under what circumstances Raoult's law becomes Henry's law:

- A) When $K_p = p_o$
- B) When $K_p \gg p_o$
- C) When $K_p \ll p_o$
- D) None of the above

30) Acidic functional group in picric acid:

- A) $-\text{COOH}$
- B) $-\text{OH}$
- C) $-\text{SO}_3\text{H}$
- D) $-\text{NO}_2$

31) The difference in molecular weight of sucrose and that of the sum of molecular weight of glucose and fructose, its components is:

- A) 0
- B) 1
- C) 16
- D) 18

32) pH 2 is more acidic than pH 4 by:

- A) 2 fold
- B) 10 fold
- C) 20 fold
- D) 100 fold

33) DNA without introns is:

- A) B DNA
- B) Z DNA
- C) Mitochondrial DNA
- D) C DNA

34) Ribosome has the following enzymatic activity:

- A) Peptidyl Transferase
- B) Amino acyl t-RNA synthetase
- C) Peptidase
- D) GTPase

35) The compound added to disrupt the disulfide bonds present in the proteins is:

- A) TEMED
- B) β -mercaptoethanol
- C) APS
- D) SDS

36) Which of the following is NOT a benefit of carrying inventories:

- A) Reduction in ordering cost
- B) Avoiding lost sales
- C) Avoiding production cost
- D) Reducing carrying cost

37) Margaret Dayhoff developed the first protein sequence database called:

- A) SWISS PORT
- B) PDB
- C) Atlas of protein and structure
- D) Protein sequence databank

38) Which of the speculators expects the price of securities and shares to rise in the near future?

- A) Bull
- B) Bear
- C) Stag
- D) Lane duck

39) For a generic drug to be bioequivalent to an innovator drug (per FDA), it must be measured in _____ of subjects to fall within _____ of the mean of the test population bioavailability:

- A) 50; 50
- B) 80; 20
- C) 20; 80
- D) 95; 5

40) The 5-Hydroxy tryptamine antagonist which has the anti-hypertensive effects is:

- A) Methysergide
- B) Ondansetron
- C) Ketanserin
- D) Cyproheptadine

41) The famous book 'The Philosophy of Management' was written by: <https://www.pyqonline.com>

- A) Henry Fayol
- B) Oliver Sheldon
- C) F. W. Taylor
- D) Sheldon Cooper

42) Superantigens can bind to:

- A) MHC I
- B) MHC II
- C) TCR and MHC II together
- D) BCR and MHC I together

43) The enzyme nomenclature '1.1.1.1' refers to which of the following enzymes:

- A) Catalase
- B) Glutamate dehydrogenase

- C) Phosphorylase
- D) Alcohol dehydrogenase

44) The Stobbe condensation is treatment of ketone or aldehyde in presence of base with:

- A) Anhydride
- B) Diester
- C) Aldehyde
- D) Ketone

45) Indian Medicine Pharmaceutical Corporation Limited (IMPCL), a public sector undertaking by AYUSH is located in:

- A) New Delhi
- B) Nagpur, MH
- C) Meerut, UP
- D) Mohan, Uttarakhand

46) Which of the following is NOT a drug exhibiting zero-order elimination kinetics?

- A) Ethanol
- B) Aspirin
- C) Morphine
- D) Phenytoin

47) In absorption spectrometry, high values of absorbance values (greater than 1 or 2) tend to give poorer precision because:

- A) Too much light saturates the detector
- B) Little light reaches the detector
- C) Beer's law deviations are worse
- D) Monochromators work poorly under intense light

48) Which of the following molecules can serve as endotoxin?

- A) Peptidoglycan
- B) Porin proteins
- C) Bacterial lipopolysaccharide
- D) Plasma membrane lipids

49) On the surface of Pd, hydrogen exists as:

- A) H^+
- B) H^-
- C) H
- D) H_2

50) Plagiarism refers to which of the following?

- A) Copying verbatim and without citing the source
- B) Stealing the intellectual property of someone else without citing the source
- C) Using the examples from another paper but mixing up the order so it is unrecognizable
- D) All of the above

51) The Declaration of Helsinki is a document of:

- A) American Medical Association
- B) Helsinki Health Institution
- C) World Health Organization
- D) World Medical Association

52) Meta-analysis:

- A) More detailed study
- B) Analysis of the results of ALL trials
- C) More data referenced
- D) Pooled analysis of other study results

53) Bragg's equation $2d \sin\theta = n\lambda$ will have no solution if:

- A) $\lambda < 2d$
- B) $\lambda > 2d$
- C) $\lambda < d$
- D) $\lambda > d$

54) Which one of the following is an indication of the quality of a research journal?

- A) Impact factor
- B) h-index
- C) g-index
- D) 10-index

55) NMR signal mainly depends on:

- A) Electronegativity of nearby atoms
- B) Hydrogen bonds of the molecules
- C) Charge of the atoms
- D) Mass of the molecules

56) A competitive inhibitor of an enzyme will lead to:

- A) A change in V_{max} and K_m value
- B) An increase in V_{max} but no change in K_m
- C) A decrease in V_{max} but no change in K_m
- D) An increase in K_m and a decrease in V_{max}

57) In a 200 MHz NMR spectrometer, a molecule shows two doublets separated by 2 ppm. The observed coupling constant is 10 Hz. The separation between these two signals and the coupling constant in a 600 MHz spectrometer will be, respectively:

- A) 1200 Hz and 10 Hz
- B) 1200 Hz and 30 Hz
- C) 600 Hz and 10 Hz
- D) 600 Hz and 30 Hz

58) *Convolvulus pluricaulis* L (Convolvulaceae) is commonly known as:

- A) Shatavari
- B) Gurmar
- C) Ashwagandha
- D) Shankhapushpi

59) Satellite viruses are:

- A) Also called viroids
- B) Dependent on other viruses for replication
- C) Cause of spongiform encephalopathies
- D) Significant pathogens of plants

60) If a cell were unable to synthesize or obtain tetrahydrofolic acid (H₄ folate), it would probably be deficient in the biosynthesis of:

- A) Isoleucine
- B) Leucine
- C) Methionine
- D) Serine

61) pH of 0.005M HCl is:

- A) 2.3
- B) 2.5
- C) 3.2
- D) 5.2

62) A chelating agent used in therapy of Alzheimer's disease is:

- A) Clioquinol
- B) EDTA
- C) Clioquinol
- D) Trientine

63) The vaginal pH of a healthy woman in age 25-30 years is _____ presence of *Lactobacillus gasseri*: <https://www.pyqonline.com>

- A) 1.8-2.8
- B) 3.8-4.5
- C) 6.5-7.0
- D) 7.4-7.9

64) A dual PPAR agonist approved by DCGI India is:

- A) Saroglitazar
- B) Sodelglitazar
- C) Pioglitazone
- D) Dapagliflozin

65) Magnetron is used to generate:

- A) Radiowaves
- B) Microwaves
- C) Matter waves
- D) X-rays

66) Sugar in protein preparation acts as:

- A) Cryoprotectant
- B) Tonicity adjuster
- C) Buffer
- D) Preservative

67) Vancomycin is associated with _____ syndrome:

- A) Gray baby
- B) Red man
- C) Fanconi
- D) Sjogren's

68) Mercapto benzothiazole in rubber chemistry helps the process of:

- A) Depolymerization
- B) Polymerization
- C) Crosslinking
- D) Oxidation

69) Which is an example of steroidal antibiotic?

- A) Lincomycin
- B) Cycloserine
- C) Fusidic acid
- D) Griseofulvin

70) 'Change for better' is the philosophy related to:

- A) 5S
- B) Six sigma
- C) Kaizen
- D) CANDO

71) What law of thermodynamics asserts that energy is a thermodynamic property?

- A) First law
- B) Second law
- C) Third law
- D) Zeroth law

72) Chilsonator produces:

- A) Pellets
- B) Sheet or ribbon of materials
- C) Fine particles
- D) Different shape materials depending upon feed

73) Deamination of 5-methyl cytosine produces:

- A) Uracil
- B) Cytosine
- C) Thymine
- D) Adenine

74) The azide ion is isoelectronic with which of the following:

- A) NO_2
- B) CO_2
- C) NO_3^-
- D) O_3

75) Bromhexine produces its effects by:

- A) Blocking the cough center
- B) Reflexly increase the bronchial secretion and by irritating the gastric mucosal surface
- C) Depolymerization of the mucopolysaccharides
- D) Desensitizing the lung's stretch receptors

76) Chalcone is prepared by:

- A) Claisen condensation
- B) Knoevenagel condensation
- C) Dieckman condensation
- D) Scotten Bauman reaction

77) Mipomersen, approved by USFDA, for homozygous familial hypercholesterolemia treatment is:

- A) Organic molecule
- B) Biosimilar
- C) Apolipoprotein molecule
- D) Antisense oligonucleotide

78) Which sugar does not cause mutarotation?

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

79) Measles, Mumps, Rubella-MMR combined vaccine represents:

- A) Inactivated/killed
- B) Live, attenuated
- C) Subunit
- D) Toxoid (inactivated toxin)

80) Abzyme is:

- A) Zymogens
- B) Inactive proteinases
- C) Antibody with catalytic activity
- D) RNA with catalytic activity

81) Polyoxyethylene (20) sorbitan monooleate is:

- A) TWEEN 20
- B) TWEEN 40
- C) TWEEN 60
- D) TWEEN 80

82) Which of the following plant contains lignans?

- A) *Hyoscyamus niger*
- B) *Linum usitatissimum*
- C) *Limonia acidissima*
- D) *Aegle marmelos*

83) FALSE about Metoclopropamide is:

- A) Is a dopamine receptor antagonist
- B) Increases gastric motility, emptying and increases the lower esophageal sphincter tone
- C) Is associated with extrapyramidal side effects
- D) May stimulate lactation

84) Which of the following is NOT a source used in Mid Infrared Spectrophotometer?

- A) Nernst glower
- B) Globalar
- C) High-pressure mercury arc lamp
- D) Nichrome wire

85) Lignin is:

- A) Aromatic carbohydrate polymer
- B) Aromatic non-carbohydrate polymer
- C) Protein
- D) Type of cutin

86) Inulin on complete hydrolysis gives:

- A) Fructose
- B) Fructose with small quantity of glucose
- C) Glucose
- D) Glucose with small quantity of fructose

87) Camptothecin inhibits:

- A) DNA ligase
- B) Topoisomerase I
- C) Topoisomerase II
- D) Microtubule assembly formation

88) Bacteria can acquire antibiotic resistance by:

- A) Conjugation and transformation
- B) Mutation
- C) Insertion of transposons
- D) All of the above

89) Which of the following anti-infective compound has disulfiram like action?

- A) Metronidazole
- B) Tinidazole
- C) Ornidazole
- D) Emetine

90) Which of the following can cause visual damage?

- A) Linezolid
- B) Chloroquine
- C) Tetracycline
- D) Chloramphenicol

91) Which elimination reaction mechanism involves formation of carbanion?

- A) E1
- B) E2
- C) E1cb
- D) Ei

92) The nucleophilic aromatic substitution will be most favoured in:

- A) o-chloronitrobenzene
- B) o-chloro-1,3-dinitrobenzene
- C) o-fluoro-1,3-dinitrobenzene
- D) Chlorobenzene

93) Which of the following are the properties of pharmacons belonging in Class III of BCS?

- A) Good solubility & poor permeability
- B) Poor solubility & good permeability
- C) Good solubility & good permeability
- D) Poor solubility & poor permeability

94) The N-O stretching vibrations in nitroalkanes occur near cm^{-1} :

- A) 650-850
- B) 1000-1200
- C) 1350-1550
- D) 3400-3600

95) As per Arrhenius theory, pseudo base is a substance that _____ concentration of the solution: <https://www.pyqonline.com>

- A) Decreases H^+ ion
- B) Decreases OH^- ion
- C) Increases OH^- ion
- D) Increases H_3O^+ ion

96) Which phytohormone induces seed dormancy?

- A) Gibberellin
- B) Abscissic acid
- C) Ethylene
- D) Auxin

97) Deflocculated suspension shows _____ flow properties:

- A) Plastic
- B) Dilatant
- C) Thixotropic
- D) Pseudoplastic

98) A characteristic property of stem cell is:

- A) Metastasis
- B) Terminal differentiation
- C) Self-renewal
- D) Senescence

99) Which one of the following properties of the myeloma cells is used in the hybridoma technology to generate monoclonal antibody?

- A) Lack of thymidylate synthase
- B) Over-expression of hypoxanthine-guanine phosphoribosyl transferase
- C) Over-expression of inosine 5'-monophosphate cyclohydrolase
- D) Lack of hypoxanthine-guanine phosphoribosyl transferase

100) Binomial nomenclature has NOT yet been adopted for:

- A) Bacteria
- B) Fungi
- C) Viruses
- D) Protozoa

NIPER JEE 2017 ANSWER KEY

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