

Sl. No. :

DJPC/19

Register
Number

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2019

PHARMACEUTICAL CHEMISTRY
(PG Degree Std.)

Time Allowed : 3 Hours]

[Maximum Marks : 300

Read the following instructions carefully before you begin to answer the questions.

IMPORTANT INSTRUCTIONS

1. The applicant will be supplied with Question Booklet 15 minutes before commencement of the examination.
2. This Question Booklet contains 200 questions. Prior to attempting to answer, the candidates are requested to check whether all the questions are there in series and ensure there are no blank pages in the question booklet. **In case any defect in the Question Paper is noticed, it shall be reported to the Invigilator within first 10 minutes and get it replaced with a complete Question Booklet. If any defect is noticed in the Question Booklet after the commencement of examination, it will not be replaced.**
3. Answer all questions. All questions carry equal marks.
4. You must write your Register Number in the space provided on the top right side of this page. Do not write anything else on the Question Booklet.
5. An answer sheet will be supplied to you, separately by the Room Invigilator to mark the answers.
6. You will also encode your Question Booklet Number with Blue or Black ink Ball point pen in the space provided on the side 2 of the Answer Sheet. If you do not encode properly or fail to encode the above information, action will be taken as per Commission's notification.
7. Each question comprises four responses (A), (B), (C) and (D). You are to select ONLY ONE correct response and mark in your Answer Sheet. In case you feel that there are more than one correct response, mark the response which you consider the best. In any case, choose ONLY ONE response for each question. Your total marks will depend on the number of correct responses marked by you in the Answer Sheet.
8. In the Answer Sheet there are four circles (A), (B), (C) and (D) against each question. To answer the questions you are to mark with Blue or Black ink Ball point pen ONLY ONE circle of your choice for each question. Select one response for each question in the Question Booklet and mark in the Answer Sheet. If you mark more than one answer for one question, the answer will be treated as wrong. e.g. If for any item, (B) is the correct answer, you have to mark as follows :

(A) ● (C) (D)
9. You should not remove or tear off any sheet from this Question Booklet. You are not allowed to take this Question Booklet and the Answer Sheet out of the Examination Hall during the time of examination. After the examination is concluded, you must hand over your Answer Sheet to the Invigilator. You are allowed to take the Question Booklet with you only after the Examination is over.
10. **Do not make any marking in the question booklet except in the sheet before the last page of the question booklet, which can be used for rough work. This should be strictly adhered.**
11. Applicants have to write and shade the total number of answer fields left blank on the boxes provided at side 2 of OMR Answer Sheet. An extra time of 5 minutes will be given to specify the number of answer fields left blank.
12. Failure to comply with any of the above instructions will render you liable to such action or penalty as the Commission may decide at their discretion.



1. Calamine contains _____ and zinc oxide
- (A) Ferric oxide (B) Ferrous sulphate
(C) Ferrous fumarate (D) Titanium dioxide
2. The limit test for arsenic is standardized test by using special type of apparatus. The basic principle of this test is a modification of the
- (A) Sulphur test (B) Gutzeit test
(C) Lead test (D) Heavy metals test
3. Units of radioactivity is
- (A) Curie (B) Kg
(C) Jules (D) Mg
4. Volumetric analysis is also called as
- (A) Titrimetric analysis (B) Qualitative analysis
(C) Gravimetric analysis (D) Semi quantitative analysis
5. Quantitative or semi quantitative test designed to identify and control small quantity of impurity which is likely to be present is defined as
- (A) Quality control test
 (B) Limit test
(C) Quantitative test
(D) Identification test
6. Zinc sulphate is assayed by
- (A) Non-aqueous titration
(B) Gravimetry method
(C) Precipitation titration
 (D) Complexometric titration

7. Which of the following is used to relieve dental hypersensitivity?
- (A) Calcium phosphate
 - (B) Stannous fluoride
 - (C) Strontium chloride
 - (D) Sodium fluoride
8. Dibasic calcium phosphate is used _____
- (A) to treat dental caries
 - (B) to relieve dental hypersensitivity
 - (C) as dentifrice
 - (D) to fill cavities
9. The number of ligand donor atoms to which the metal is directly bonded is defined as
- (A) Co ordination sphere
 - (B) Co ordination polyhedron
 - (C) Co ordination number
 - (D) Counter ion
10. Ethylene diamine tetra acetic acid ionises in _____ stages
- (A) 1
 - (B) 2
 - (C) 3
 - (D) 4
11. _____ is prepared by double decomposition reaction of hot ferrous sulphate and sodium fumarate
- (A) Ferrous Fumarate
 - (B) Ferrous fluoride
 - (C) Ferrous glyconate
 - (D) Calcium Fumarate

12. Ferric Ammonium citrate is assayed by _____.
- (A) Iodometry titration (B) Precipitation titration
(C) Non-aqueous titration (D) Gravimetry method
13. Which one of the following used as acid base regulator
- (A) Sodium carbonate (B) Sodium bi carbonate
 (C) Sodium citrate tablets (D) Sodium hydroxide
14. Calcium disodium edetate is used in the _____.
- (A) treatment of lead poisoning (B) treatment of rheumatoid arthritis
(C) treatment of hyper acidity (D) treatment of constipation
15. Sodium chloride infusion is used as
- (A) Antacid (B) Electrolyte replenisher
(C) Laxative (D) Antidote
16. Sodium thio sulphate is used as
- (A) Haematinic (B) Antidote for cyanide poisoning
(C) Emetic (D) Expectorant
17. Ammonium carbonate is used as _____.
- (A) Hematinic
(B) Emetic
 (C) Expectorant
(D) Antidote
18. Which one is the chelating agent among the options given below?
- (A) Barium chloride
(B) Silver Nitrate
 (C) Ethylene diamine tetra acetic acid
(D) Potassium dichromate

19. The SI unit of co-efficient of viscosity is _____
- (A) $\text{kg m}^2 \text{S}$
 - (B) $\text{kg m}^{-1} \text{S}$
 - (C) $\text{kg m}^{-1} \text{S}^{-1}$
 - (D) kg mS^{-}
20. A liquid rises in a capillary tube. It is due to its _____
- (A) Viscosity
 - (B) Vapour Pressure
 - (C) Density
 - (D) Surface tension
21. Viscosity of a liquid is a measure of _____
- (A) Repulsive forces between the liquid molecules
 - (B) Frictional resistance
 - (C) Intermolecular force between the molecules
 - (D) Hydrogen bonding
22. Association of molecule in water is due to _____
- (A) Surface tension
 - (B) Viscosity
 - (C) Hydrogen bonding
 - (D) Optical activity
23. The greater the surface tension of the liquid, the higher is its capillary rise. This statement is not suitable for _____
- (A) Water
 - (B) Mercury
 - (C) Glycerin
 - (D) Acetic acid

24. Perchloric acid is standardised using _____
- (A) Sodium carbonate
(B) Potassium permanganate
(C) Oxalic acid
 (D) Potassium hydrogen phthalate
25. _____ is Aprotic solvent
- (A) Sulphuric acid
(B) Chloroform
(C) Water
(D) Acetic acid
26. _____ show deviations from Raoult's Law
- (A) Real solution
(B) Ideal solution
(C) Super critical solution
(D) Unsaturated solution
27. _____ states that, at constant temperature, the volume of a fixed mass of gas is inversely proportional to its pressure.
- (A) Charles's law
 (B) Boyle's law
(C) Raoult's law
(D) Beer's law
28. Duma's method is used to determine _____
- (A) halogens
(B) sulphur
(C) phosphorous
 (D) Nitrogen
29. Which one of the following methods is used to quantitatively determine the amount of nitrogen?
- (A) Rast method
 (B) Kjeldahl method
(C) Zeisel's method
(D) Herzig – Meyer method

30. Optical isomers that rotate the plane of polarisation by equal and opposite amounts are called as
- (A) Diastereo isomers
 - (B) Enantiomers
 - (C) Geometrical isomers
 - (D) Cis-Trans isomers
31. Chemical change can be made to take place two or more different ways whether in one step or two or more steps the amount of total heat change is same no matter by which method the change is brought about
- (A) Hess law
 - (B) Gibb's law
 - (C) Law of mass action
 - (D) Vant Hoff rules
32. Isomers that have the same structural formula but differ in arrangement of atoms in space are called
- (A) Stereoisomers
 - (B) Optical isomers
 - (C) Structural isomers
 - (D) Chiral
33. The heat of combustion can be determined experimentally in a
- (A) Polarimeter
 - (B) Colorimeter
 - (C) Calorimeter
 - (D) Refractrometer
34. The Brach of chemistry which deals with the heat changes caused by chemical reaction is called
- (A) Phyto chemistry
 - (B) Thermo chemistry
 - (C) Photo chemistry
 - (D) Electrochemical chemistry

35. The product of Molar Mass and specific refraction is called
- (A) Refractive Index
 (B) Molar Refraction
(C) Reflective Index
(D) Molar Reflection
36. The square of Refractive Index is used to detect
- (A) Carbon bonds
(B) Nitrogen bonds
(C) Sulphur bonds
 (D) Hydrogen – bond complexes
37. Refractive Index of water at room temperature is
- (A) 1.55 (B) 1.44
 (C) 1.33 (D) 1.22
38. The absorption co-efficients for dextro and levo circularly polarised light are different, this difference is known as
- (A) Circular dichroism (B) Circular Polarity
(C) Circular Absorptivity (D) Circular mobility
39. A mathematical relation, connecting total molar energy of fluid (gas or liquid) with its volume and temperature is called as
- (A) Caloric Equations of state (B) Overlap repulsion force
(C) Random packing modal (D) Cybotactic group model
40. The average amount of energy required to dissociate one mole is called as
- (A) endothermic compound (B) bond energy
(C) exothermic compound (D) heat of reaction

41. The number of unpaired electrons in the outermost orbit is called as
- (A) positive ions (B) negative ions
(C) valence electrons (D) free radicals
42. Which one of the following reagent is used widely in the preparation of alcohols?
- (A) Volhard Reagent
(B) Grignard Reagent
(C) Benedict Reagent
(D) Kolbes Reagent
43. Diazonium salts are used for preparations of _____
- (A) Dye stuffs (B) Aldehydes
(C) Ketones (D) Carboxylic acids
44. *m*-BromoToluene isomer is best synthesised from
- (A) Bromination of toluene
(B) Methylation of Bromobenzene
(C) Diazotisation reaction with Toluene
(D) From Nitro benzene
45. The reaction of carboxylic esters with Grignard reagent is an excellent method for preparing
- (A) 1° OH – (Primary alcohols)
(B) 2° OH – (Secondary alcohols)
(C) 3° OH – (Tertiary alcohols)
(D) Rectified spirit
46. Grignard Reagent reacts with Water to give
- (A) Alkane (B) Alkene
(C) Alkyne (D) Acetylene

47. Which one of the following has higher energies than the combining Atomic Orbitals (AOs)?
- (A) Bonding Molecular Orbitals (BMOs)
 - (B) Anti Bonding Molecular Orbitals (ABMOs)
 - (C) Atomic Molecular Orbitals (AMOs)
 - (D) Linear Combination of Atomic Orbitals (LCAOs)
48. Digoxin is inhibitor of
- (A) Na^+/K^+ ATP-ase located in cardiac multle
 - (B) FADP Inhibtion in cell
 - (C) Ca^+ ATP-ase located in cardiac cells
 - (D) Na^+ ATP-ase located in cardiac cells
49. In case of Digitalis purpurea, the cardiac activity is maximum with
- (A) Odoro side – H
 - (B) Digoxin
 - (C) Digitoxin
 - (D) Purpureo side – A
50. Which one of the following is 4-Quinolone 3-Carboxylic acid derivative?
- (A) Nalidixic acid
 - (B) Enoxacin
 - (C) Cinoxacin
 - (D) Norfloxacin
51. Piperazine citrate is used in the treatment of
- (A) Expectorant
 - (B) Anti Tussive
 - (C) Anthelmintics
 - (D) Anti Emetics
52. Pyrimidine nucleus is present in which of the following
- (A) Pyrantel
 - (B) Niclosamide
 - (C) Thio bendazole
 - (D) Pyrazi Quantel
53. Diethyl carbamazine citrate comes under which class of Antholmintics
- (A) Benzimidazole
 - (B) Nitro derivatives
 - (C) Amides
 - (D) Piperazines

54. S-Enantiomer of ofloxacin is called as _____.

- (A) Spar floxacin Levo floxacin
 (C) Lome-floxacin (D) Balo floxacin

55. Which one of the following is an azole antifungal agent?

- (A) Sordarin (B) Butenafine
 (C) Ketoconazole (D) Griseofulvin

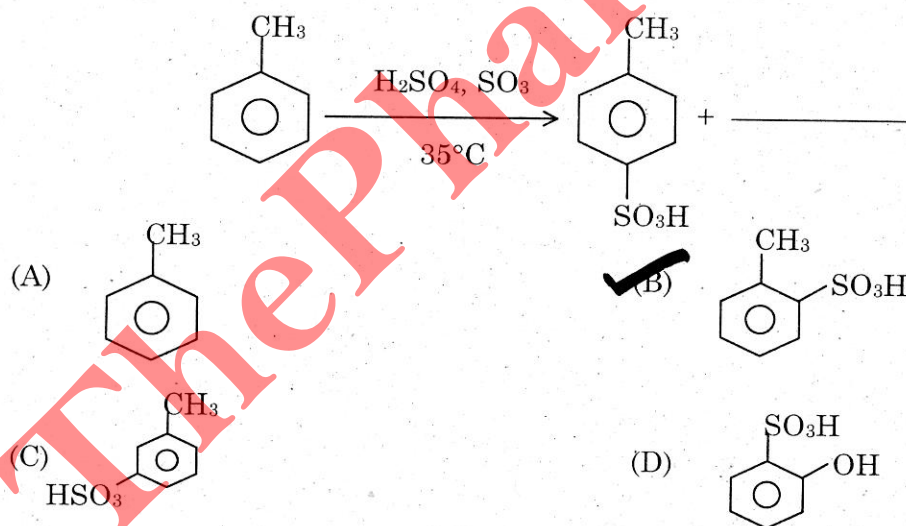
56. The mechanism of action of Trimethoprim.

- (A) Blocks dihydrofolate reductase (B) Blocks t-RNA binding to m-RNA
 (C) Blocks electron transport of bacteria (D) Blocks synthesis of dihydroptericoic acid

57. The first marketed anti bacterial drugs were

- (A) Cephalo sporins (B) Pencillins
 (C) Amoxy cillins (D) Sulfanilamide

58. Fill the Electrophilic aromatic substitution reaction :



59. Which of the following antifungal should not be used during pregnancy?

- (A) Isavuconazonium sulfate (B) Nafti fine
 (C) Butena fine (D) Terbena fine

60. Which of the following is a pyrimidine derivative?

- (A) Proguanil HCl
- (B) Pyrimethamine
- (C) Cycloguanil Pamoate
- (D) Chlorophenyl guanidine

61. What could be the starting material for the synthesis of Phenobarbital?

- (A) Benzyl chloride
- (B) Ethyl Methyl Ketone
- (C) Phenyl Acetamide
- (D) Phenyl Acetyl Chloride

62. Trimethoprim exhibits _____ which activity?

- (A) Antihistaminic
- (B) Anthelmintics
- (C) Anti bacterial
- (D) Anti depressant

63. Which one of the following is osmotic diuretic used in treatment of hypertension?

- (A) Mannitol
- (B) Sorbitol
- (C) Acetazolamide
- (D) Chlorthiazide

64. Metazocine is unsuitable for usage because of its

- (A) Psychomimetic side effects
- (B) Neurologic side effects
- (C) Nephrologic side effects
- (D) Hepatic side effects

65. Paraldehyde is used as
- (A) Anti depressants
 - (B) Sedative
 - (C) Anti convulsant
 - (D) Anti histamine
66. Thiopental sodium is administered through _____ route.
- (A) INTRALATCON
 - (B) INTRA VENOUS
 - (C) ORAL
 - (D) TOPICAL
67. Codeine is derived from morphine by displacement of the hydrogen atom of the phenolic-OH group by the _____
- (A) $-NH_2$
 - (B) $-C_2H_5$
 - (C) $-CHO$
 - (D) $-CH_3$
68. Sulphonamids are generally used to produce _____ effect
- (A) Antibacterial
 - (B) Antibiotics
 - (C) Anti malarial
 - (D) Antihistamine
69. In the Phenobarbital assay with N/10N NaOH Phenobarbital acts as
- (A) Weak Mono basic acid
 - (B) Weak dibasic acid
 - (C) Strong acid
 - (D) ester
70. Mafenide belongs to the category of which nucleus?
- (A) Sulphonamide
 - (B) STEROID
 - (C) PHRIDINE
 - (D) PHENANTHARENE

71. Which one of the following is a CNS stimulant alkaloid
- (A) Guinine (B) CINCHONINE
 (C) STRYCHNINE (D) Ephedrine
72. _____ refers to the specific type of instrumentation where in the molar ellipticity of an optically active substance is measured
- (A) Optical rotary dispersion (B) IR Spectrometer
 (C) Circular dichroism (D) Mass spectrum
73. TCA cycle is commonly known as _____
- (A) Ko Warburg-Lipman Pathway (B) .Kreb's cycle
(C) EMP Pathway (D) Cori cycle
74. A solution of cholesterol in chloroform when treated sulphuric acid and acetic anhydride gives a green colour. This reaction is called _____
- (A) Salkowski reaction (B) Mayer's reaction
 (C) Libermann-Burchard reaction (D) Hager's reaction
75. Oestrone may be reduced to _____ by catalytic hydrogenation, by LiAlH_4
- (A) Oestrogen (B) androgen
(C) Oestrotriol (D) Oestrodiol
76. Cortisone is used in the treatment of _____
- (A) Rheumatoid arthritis (B) Goitre
(C) Heart disease (D) Diabetis mellitus

77. Quinine on controlled oxidation with chromic acid gives
 (A) Quininic acid and meroquinene
(B) Laiponic acid and quinine acids
(C) Quinine acids and 4-methyl-6-methoxy quinoline
(D) Mosoquinene and laiponic acid
78. The nature of carbon skeleton in a Nitrogenous heterocyclic ring is determined by
(A) Zerehinoff's method
(B) Zeisol's method
(C) Clarke's method
 (D) Hofmann's exhaustive methylation method
79. The number of asymmetric carbon counters in Ephedrine is
 (A) 2 (B) 4
(C) 8 (D) 16
80. Tropine and pseudotropine are optically _____ because of _____
(A) inactive, absence of chiral centres
(B) active, two chiral centres
(C) active, internal compensation
 (D) inactive, internal compensation
81. Nicotine when oxidised with dichromate-sulphuric acid, it forms
 (A) Nicotinic acid (B) Pyridine - 2 - carboxylic acid
(C) Pyridine - 4 - carboxylic acid (D) Benzoic acid
82. The presence of N-methyl group and their numbers may be determined by means of
(A) Hofmann's exhaustive methylation method
(B) Van Braun's method
 (C) Herzig-meyer method
(D) Emde degradation method

83. The blue shift means

- (A) A shift of λ_{\max} to shorter wavelength
- (B) Increase in the intensity of an absorption
- (C) A shift of λ_{\max} to longer wavelength
- (D) Decrease in the intensity of an absorption

84. In a prism monochromator the working principle is

- (A) Reflection
- (B) Scattering
- (C) Re-inforcement
- (D) Dispersion

85. Absorption of light in the ultraviolet regions of the spectrum is due to the presence of a/an

- (A) σ -electrons
- (B) chromophore
- (C) auxochromes
- (D) electrolytes

86. _____ law is defined as the intensity of a beam monochromatic radiation decreases exponentially with the number of absorbing molecules.

- (A) Beer's
- (B) Lambert's
- (C) Bragg's
- (D) Hess

87. Quinine is highly fluorescent in 0.05 M sulphuric acid but not in 0.1 M hydrochloric acid because of

- (A) Collisional quenching
- (B) Static quenching
- (C) Tyndall scatter
- (D) Rayleigh scatter

88. The efficiency of a chromatography column is measured by its number of
- (A) Elution (B) Theoretical plates
- (C) Mobile phase (D) Compounds in mixture
89. The upper surface of a column should be protected by using _____ in gel filtration.
- (A) Adsorbents (B) Charcoal
- (C) Filter paper (D) Absorbents
90. Mechanism of separation in TLC of paraffin oil or silicon oil coated on silica is
- (A) Reversed phase partition (B) Adsorbition
- (C) Reversed phase absorbance (D) Ion exchange
91. Which of the following developing reagent is used for visualization of amino acid in thin layer chromatography?
- (A) Iodine vapour (B) Bratton-Marshall reagent
- (C) Ninhydrin reagent (D) Dragendroff's reagent
92. _____ can be made visible through exposure of the TLC plate to iodine vapor.
- (A) electrolytes (B) organometallic compounds
- (C) organic analytes (D) inorganic analytes
93. The most common iodine isotope used for biological arrays
- (A) ^{131}I (B) ^{125}I
- (C) ^{124}I (D) ^{136}I

94. IR absorption spectra are due to changes in _____ energy accompanied by change in rotational energy.
- (A) electronic
 (B) vibrational
(C) nuclear spin
(D) molecular charge
95. In IR, two atoms (non bonded) connected to a central atom move up and move down below the plane is called _____ vibration.
- (A) Twisting
 (C) Wagging
(B) Scissoring
(D) Rocking
96. A common detector employed to detect IR radiation is the
- (A) Photovoltaic cell
(B) Photomultiplier
(C) Crystal
 (D) Thermocouple
97. Deformation vibrations in IR spectroscopy is called as
- (A) bending vibrations
(B) symmetric vibrations
(C) asymmetric vibrations
(D) stretching vibrations
98. In NMR, the inter action between different hydrogens in a molecule is
- (A) chemical shift
 (C) spin-spin coupling
(B) coupling constant
(D) deshielding

99. Sodium carbonate added to hot solution of phosphoric acid gives
- (A) Disodium hydrogen phosphate (B) Sodium phosphoric acid
(C) Sodium bicarbonate (D) Sodium acid phosphate
100. _____ is dimethyl polysiloxane of grade 200
- (A) Sulphurated potash (B) Dimethicone
(C) Potash (D) Kaolin
101. _____ are used for removing toxic substances from GIT, caused due to poisoning or in diarrhoea
- (A) Acidifiers (B) Adsorbents
(C) Antacids (D) Laxatives
102. From the following identify the chemical formula for magaldrate
- (A) $\text{mg}_6 \text{Al}_2 (\text{OH})_{16} \text{CO}_3 \cdot 4\text{H}_2\text{O}$ (B) $\text{Al}_5 \text{mg}_{10} (\text{OH})_{31} (\text{SO}_4)_2$
(C) $\text{Al}_2 \text{mg}_6 (\text{CO}_3)_2 (\text{OH})_{14} \cdot 4\text{H}_2\text{O}$ (D) CaCO_3
103. _____ is obtained when magnesium chloride reacts with sodium hydroxide
- (A) Magnesium phosphate (B) Manganese oxide
(C) Aluminium hydroxide (D) Magnesium hydroxide
104. Epsom salt is known as
- (A) Calcium carbonate (B) Calcium hydroxide
(C) Magnesium sulphate (D) Magnesium carbonate
105. Rochelle salt is known as
- (A) Sodium sulphate (B) Sodium potassium tartrate
(C) Sodium phosphate (D) Bismuth sub carbonate

106. Which of the following is used to prevent the precipitation of Iron as ferric hydroxide in the limit test for Iron?
- (A) Fumaric acid (B) Acetic acid
 (C) Citric acid (D) Tartaric acid
107. Magnesium sulphate is used as
- (A) Antacid (B) Saline purgative
(C) Electrolyte replemishes (D) Dental product
108. Which of the following injections is used for the diagnosis of hematological disorders?
- (A) Gold (^{198}Au) injection
(B) Cyanocobalamin (^{60}Co)
 (C) Ferric citrate (^{59}Fe) injection
(D) Sodium iodide (^{131}I) injection
109. Sodium orthophosphate solution is used in the _____
- (A) Study of sodium exchange
 (B) Extra cellular water measurement
 (C) Treatment of polycythemia
(D) Determination of myocardial blood flow
110. Rubidium chloride injection is used in the _____
- (A) determination of myocardial blood flow
(B) study of thyroid uptake
(C) treatment of polycythemia
(D) study of potassium exchange
111. _____ is a material used for cleaning of teeth and adjacent gums
- (A) Dental caries
(B) Oral Antiseptic
 (C) Dentifrice
(D) Dental hypersensitivity

112. _____ can be obtained by careful neutralization of hydrochloric acid with lime.
- (A) Calcium gluconate (B) Calcium chloride
(C) Potassium chloride (D) Sodium chloride
113. Assay of Ammonium chloride is by
- (A) Complexometry (B) Non-aqueous titration
(C) Acidimetry (D) Modified Volmard's method
114. Calcium hydroxide is assayed by
- (A) Acidimetry (B) Alkalimetry
 (C) Complexometric titration (D) Non-aqueous titration
115. In the assay of aluminium hydroxide gel IP _____ is added to maintain an alkaline pH, in which conditions only the complex formation is complete.
- (A) Disodium edetate
(B) Ammonia ammonium chloride
 (C) Hexamine
(D) Magnesium oxide
116. In compound sodium chloride solution, sodium is determined by _____.
- (A) Spectro photometry
 (B) Flame photometry
(C) Fluorimetry
(D) Turbidometry
117. Calcium gluconate is assayed by _____.
- (A) Precipitation titration
(B) Non-aqueous titration
(C) Gravimetry method
 (D) Complexometric titration

118. Which of the following is used as oral antiseptic?

- (A) Sodium perborate
- (B) Sodium Thio Sulphate
- (C) Sodium Sulphite
- (D) Sodium Methoxide

119. _____ has been the traditional cleaning-polishing agent for most tooth pastes and tooth powders

- (A) Sodium Carbonate
- (B) Calcium Carbonate
- (C) Calcium Sulphate
- (D) Sodium bi carbonate

120. Calcium chloro hypochlorite is known as _____

- (A) Epsom salt
- (B) Precipitated chalk
- (C) Bleaching powder
- (D) Lime salt

121. British anti lewisite (B.A.L) is

- (A) Leucovarin calcium
- (B) D. Penicillamine
- (C) Dimencaprol
- (D) Editic acid

122. The SI unit of surface tension is _____

- (A) dyne cm
- (B) dyne⁻¹ cm
- (C) Nm
- (D) Nm⁻¹

123. Glycerol has an unusually high viscosity mainly because of its high capacity to form
- (A) Free radicals (B) Ionic bonds
 (C) Hydrogen bonds (D) Binary compounds
124. As the temperature of a liquid increases, its viscosity _____
- (A) increases (B) increases or decreases
 (C) remains same (D) decreases
125. Osmotic pressure of a solution is a/an _____
- (A) Colloidal property (B) electrochemical property
 (C) colligative property (D) catalytic property
126. In acetone – chloroform system the deviation from Raoult's law is _____
- (A) positive (B) negative
(C) zero (D) positive and negative
127. In mass spectra the most intense peak is known as
- (A) Base peak (B) Hydrocarbon peak
(C) Fragment ion peak (D) Rearrangement peak
128. People stranded in lifeboats on the ocean cannot drink the seawater. The reason is its
- (A) Surface tension is too low (B) Osmotic pressure is too high
(C) Viscosity is too high (D) Freezing temperature is too high
129. Which one is a colligative property
- (A) Osmotic pressure (B) Molecular weight
(C) Surface tension (D) Atomic volume

130. Nitrous oxide is manufactured by the action of heat on
- (A) Sodium nitrate
 - (B) Potassium nitrate
 - (C) Ammonium nitrate
 - (D) Ammonium carbonate
131. In testing oxygen for carbon di-oxide, the gas is passed slowly through a 3% solution of
- (A) Calcium chloride
 - (B) Magnesium chloride
 - (C) Barium hydroxide
 - (D) Ammonium hydroxide
132. The change in enthalpy that take place when one mole of the compound is formed from its elements. It is usually represented by
- (A) ΔH_f
 - (B) ΔH
 - (C) $\Delta^{\circ}H^{\circ}$
 - (D) $\Sigma \Delta^{\circ}H^{\circ}$
133. The separation of racemic modification into enantiomers is called
- (A) Revolution
 - (B) Regression
 - (C) Resolution
 - (D) Recession
134. _____ equation gives variation of partial vapour pressure of the constituents of a liquid mixture with the variation of the composition in the liquid phase
- (A) Nernst
 - (B) Gibb's
 - (C) Duhem-Margules
 - (D) Raoult's

135. A carbon atom which is bonded to four different group is called as
- (A) Asymmetric carbon atom
 - (B) Symmetric carbon atom
 - (C) Optical isomerism
 - (D) Geoisomerism
136. Which equation is the basis for the relationship between voltage generated and relevant concentration at each electrode?
- (A) Polynomial equation
 - (B) Simultaneous equation
 - (C) Nernst equation
 - (D) Brag's equation
137. A special type of functional isomerism in which the isomers are in dynamic equilibrium with each other
- (A) Metamerism
 - (B) Tautomerism
 - (C) Enantiomers
 - (D) Optical isomers
138. The phenomenon in which one of the products itself acts as a catalyst is known as
- (A) Positive Catalysis
 - (B) Negative Catalysis
 - (C) Auto - Catalysis
 - (D) Promoter
139. The angle of rotation of the plane polarized light produced by a liquid with a solution of volume 1 ml and 1 gm of substance with 1 dm length is called as
- (A) Optical activity
 - (B) Specific rotation
 - (C) Rotatory action
 - (D) Specific absorbance

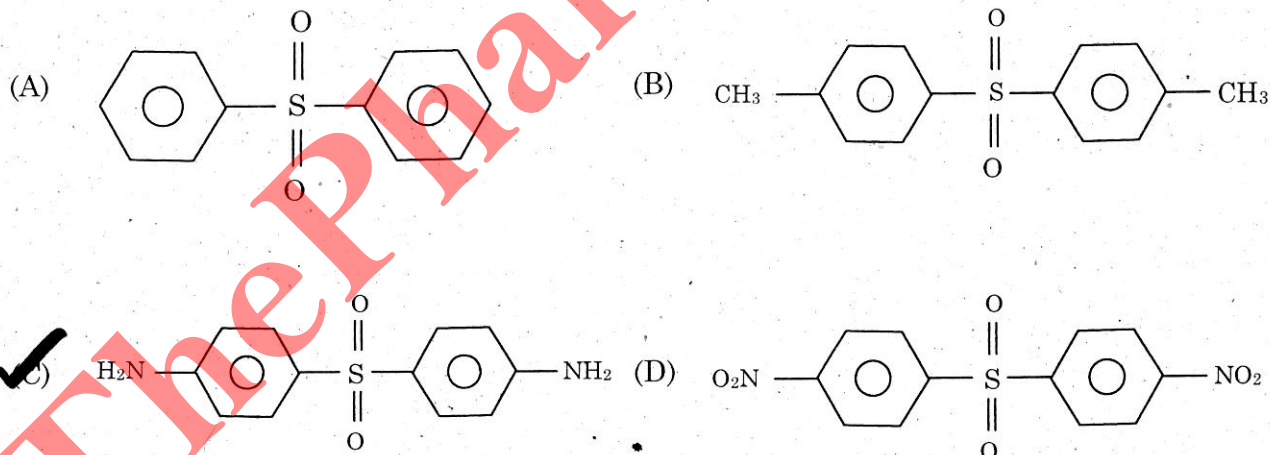
140. The change in enthalpy that takes place when one mole of the compound is formed from its element is defined as
- (A) Heat of formation (B) Heat of solution
(C) Heat of combustion (D) Heat of neutralisation
141. The temperature at which the two conjugate solution merge into one another to form one Layer is called as
- (A) conjugate system (B) critical minimum temperature
 (C) tie line (D) critical solution temperature
142. When a _____ aromatic amine is dissolved in cold aqueous mineral acid and treated with sodium nitrite, Diazonium salts are formed.
- (A) Primary (B) Secondary
(C) Tertiary (D) Quarternary
143. Vitamin-A in chloroform when treated with antimony trichloride gives Blue colour. This is called _____.
- (A) Carr-Price test (B) Wagners test
(C) Fehling test (D) Borntegers test
144. The unit for dipole moment is
- (A) amu (B) esu
 (C) debye, D (D) centipoise, CP
145. 'LCAO' stands for _____.
- (A) Least Combination of Atomic Orbitals
(B) Last Combination of Atomic Orbitals
 (C) Linear Combination of Atomic Orbitals
(D) Largest Combination of Atomic Orbitals
146. The unit 'amu' means
- (A) Average mass unit (B) Average molecule unit
 (C) Atomic mass unit (D) Atomic molecule unit

147. Heterocyclic compounds are mainly synthesised from
- (A) Dimethyl Sulfoxide (DMSO)
 - (B) Tri Fluoro Acetic acid (TFA)
 - (C) Poly Ethylene Glycol (PEG)
 - (D) Ethyl Aceto Acetate (EAA)
148. Vitamin-K₃ is called as
- (A) Farnoquinone
 - (B) Menadione
 - (C) Menaquinone
 - (D) Phylloquinone
149. Ethyl aceto acetate can be synthesised by
- (A) Aldol condensation
 - (B) Claisen condensation
 - (C) Clemmenon reduction
 - (D) Birch Reduction
150. Alkylated derivatives of acetic acid are obtained from _____ by acid hydrolysis.
- (A) Malonic Esters
 - (B) Succinic Esters
 - (C) Diethyl Esters
 - (D) Aceto Acetic Esters
151. $\text{CH}_3 - \text{CO} - \text{CH}_2 - \text{COOC}_2\text{H}_5$ is called as
- (A) Diethyl Malonate (DEM)
 - (B) Ethyl Aceto Acetate (EAA)
 - (C) Tri Ethyl Amine (TEA)
 - (D) Diethyl Amine (DEA)
152. Molecules like H₂, O₂, N₂, Cl₂ and Br₂ have _____ Dipole moments.
- (A) Very high
 - (B) Very low
 - (C) Zero
 - (D) High

153. In an E1 reaction involving an alkyl halide and a base, the rate of the reaction is
- (A) linearly depends on the concentration of the alkyl halide only
 - (B) linearly depends on the concentration of both reactants
 - (C) independent of the concentration of the alkyl halide
 - (D) is independent of the concentration of both reactants
154. The major product of E2 reaction of alkyl fluorides is the _____ alkene.
- (A) Terminal
 - (B) More stable
 - (C) Less stable
 - (D) Symmetric
155. 2-Bromo butane heated with alcoholic KOH gives
- (A) Cyclobutane
 - (B) 1 Butanol
 - (C) 1-Butene and 2-butene
 - (D) Tri substituted butene
156. Which reaction takes place with inversion of configuration?
- (A) SN¹ reaction
 - (B) SN² reaction
 - (C) Asymmetric synthesis
 - (D) Stereo selective reaction
157. Electrophiles are
- (A) Electron rich species
 - (B) Electron deficient species
 - (C) Neutrons rich species
 - (D) Proton deficient species

158. Tri methoprim and sulfonamide combination give
- (A) Synergistic action
 - (B) Reversible Antagonist
 - (C) Antagonistic action
 - (D) Irreversible Antagonist
159. The most serious adverse effect associated with pyrazinamides is
- (A) Cyto toxicity
 - (B) Hepato toxicity
 - (C) Nephro toxicity
 - (D) Neuro toxicity
160. Which of the following is Amides containing Anthelmintics?
- (A) Furoesimide
 - (B) Niclosamide
 - (C) Actimide
 - (D) Benzamide
161. Albendazole contains which of the following nucleus?
- (A) Pyrazole
 - (B) Benzimidazole
 - (C) Indole
 - (D) Quinoline
162. Resonance in Benzene is due to
- (A) Delocalisation of π -electrons
 - (B) Stable π -electrons
 - (C) Stable σ -electrons
 - (D) Unstable σ -electrons
163. Which one of the following is a Benzimidazole Anthelminthic?
- (A) Piperazine Citrate
 - (B) Mebendazole
 - (C) Prazi Quantel
 - (D) Avermectin

164. Barbiturate and Benzodiazepines (Sedative and Hypnotics) are
 (A) GABA receptor Agonist (B) GABA receptor Antagonist
 (C) DURA receptor Agonist (D) DURA receptor Antagonist
165. Which one of the following does not have asymmetric carbon?
 (A) Halothane (B) Isoflurane
 (C) Desflurane (D) Methoxyflurane
166. Which one of the following Antidepressant is selective Nor epinephrine Receptor Inhibitor?
 (A) Citalopram (B) Sertraline
 (C) Desipramine (D) Fluoxetine
167. Which form of Triprolidine is pharmacologically active?
 (A) CIS-form (B) Trans-form
 (C) R-form (D) S-form
168. Choose the correct chemical structure of Dapsone



169. A cardioselective β -adrenergic blockers is
 (A) Nitroglycerin (B) Propranolol
 (C) Verapamil (D) Bepridil

170. The drug ketamine is used as _____
- (A) Anaesthetic (B) Anti-tubercular agents
(C) Anti histamine (D) Anthelmintics
171. Which one of the following is a Thiophene derivative
- (A) methapyrilene hydrochloride
(B) meclizine hydrochloride
(C) Buclizine hydrochloride
(D) Chlorcyclizine hydrochloride
172. Which form of Atomoxetine is more active Anti depressant than other form?
- (A) R-Atomoxetine
(B) S-Atomoxetine
(C) RS-Atomoxetine
(D) Cis-Atomoxetine
173. Mart essentiaum consists of the grain of the cereal _____ belongs to the family Graminea
- (A) D-glucose (B) Barley
(C) O-galactose (D) melibiose
174. _____ is a pro-vitamin D₂ which is found both in plants, animals and yeast.
- (A) Lansesteral (B) Stigmasterol
 (C) Ergosterol (D) Bile acid

175. Which of the following is pyrrolidine alkaloid?

- (A) Ricinine
- (B) Coninine
- (C) Hygrine
- (D) Reserpine

176. Molisch test is used for the identification of

- (A) Proteins
- (B) Carbohydrates
- (C) Alkaloids
- (D) Steroids

177. Cholesterol contains _____ number of carbon atoms.

- (A) 27
- (B) 17
- (C) 24
- (D) 28

178. Which of the following amino acids has a phenolic ring?

- (A) Proline
- (B) Alanine
- (C) ~~Prytophan~~
- (D) Tyrosine

179. The number of chiral centres in Glucose is

- (A) 8
- (B) 4
- (C) 16
- (D) 10

180. Maltose on hydrolysis by dilute acids yields
- (A) two molecules of fructose
 - (B) two molecules of D-glucose
 - (C) one molecule of D-glucose and one molecule of fructose
 - (D) three molecules of D-glucose
181. Light source used for the measurement in the ultraviolet region is a
- (A) Tungsten filament lamp
 - (B) Deuterium discharge lamp
 - (C) Globar rod
 - (D) Nernst glowers
182. Which of the following reduces the fluorescence of riboflavin by static quenching?
- (A) EDTA
 - (B) Dimercaprol
 - (C) Penicillamine
 - (D) Caffeine
183. Grades of silica used in HPTLC has the particle size as _____ and _____.
- (A) large and uniform
 - (B) small and uniform
 - (C) large and irregular
 - (D) small and irregular
184. Which of the following is used for the determination of molecular weight?
- (A) Gas chromatography
 - (B) Paper chromatography
 - (C) Gel filtration
 - (D) Ion-exchange

185. Quantum yield of fluorescence would be equal to
- (A) number of photons emitted – number of photons absorbed
 - (B) photons absorbed – photons emitted
 - (C) number of photons emitted / number of photons absorbed
 - (D) number of photons absorbed / number of photons emitted
186. The quantum efficiency fluorescence decreases with increasing
- (A) viscosity
 - (B) temperature
 - (C) pH
 - (D) pressure
187. HPLC – state silica consists of porous microparticles with a _____ (or) _____ shape.
- (A) Spherical (or) Regular
 - (C) Spherical (or) Irregular
 - (B) Non spherical (or) Regular
 - (D) Non spherical (or) Irregular
188. The mobile phase in Reverse-Phase HPLC comprises _____ and _____.
- (A) water and petroleum ether
 - (B) water and methanol
 - (C) water and carbon tetrachloride
 - (D) water and cyclohexane
189. In HPLC, the stationary phase is polar and the mobile phase is non-polar, then it is called _____ chromatography.
- (A) Normal-phase partition
 - (B) Reversed-phase partition
 - (C) Ion-pair
 - (D) Ion-exchange
190. In HPLC, while supplying mobile phase by mechanical pump, a _____ device is required to smoothout the pulses.
- (A) Gauze
 - (B) Damping
 - (C) Temperature
 - (D) Injection

191. In an applied magnetic field in NMR study, the number of orientations of a nucleus with a spin number I , is given by the formula of
- (A) $2(I+1)$ (B) $I+1$
 (C) $2I+1$ (D) $I+2$
192. Standard used for NMR is
- (A) methyl silane (B) triethyl silane
 (C) trimethyl silane (D) tetramethyl silane
193. In NMR spectroscopy the difference between the resonance position of a nucleus and that of a standard reference compound is called as
- (A) spin spin interaction (B) proton magnetic resonance
 (C) spin spin coupling (D) chemical shift
194. In NMR spectroscopy the distance between the centres of the two adjacent peaks in a multiplet usually is constant and is called
- (A) Coupling constant (B) Spin rotation constant
(C) Shift constant (D) Peak constant
195. Which of the following equipment is required for conducting radio immuno array?
- (A) pH meter (B) Centrifuge
(C) Conductometer (D) Densitometer

196. In which of the following ways the capillary electrophoretic separations are performed?

- (A) Iso electric focussing
- (B) Fast atom bombardment
- (C) Double focussing spectrometers
- (D) Field ionization

197. Conductance is expressed as _____ units.

- (A) A°
- (B) ohms⁻¹
- (C) δ
- (D) MeV

198. Amperometric titrations are performed using _____ method.

- (A) dropping mercury electrode
- (B) glass electrode
- (C) polarographic
- (D) specific ion electrode

199. Stretching vibration in IR spectroscopy involves changes in the

- (A) bond angle
- (B) bond length
- (C) bond rotation
- (D) bond bending

200. Stronger bonds produce IR absorption at higher frequencies which of the following would be?

- (A) sp
- (B) sp²
- (C) sp³
- (D) sp⁴