1. Anti - Markownikoffs addition of HBr is not observed in:
a) Propene
b) But-1-ene
c) But-2-ene
d) Pent-2-ene

2. The compound that will not give iodoform on treatment with alkali and iodine is:
a) Acetone
b) Ethanol
c) Diethyl ketone
d) Isopropyl alcohol

3. The best indicator for detection of end point in the titration of a weak acid and a strong base is:
a) Methyl orange
b) Methyl red
c) Bromothymol blue
d) Phenolphthalein

4. The molecule with zero bond order is:
a) HCl
b) Be_2
c) N_2
d) O_2

5. The weakest acid is:
a) HF
b) HCl
c) HBr
d) HI

6. The molecular formula of hypo is:
a) $Na_2SO_4 10H_2O$
b) $CuSO_4 5H_2O$
c) Na_2SO_3
d) $Na_2S_2O_3$

7. Syn gas is a mixture of:
a) Carbon monoxide and Nitrogen
b) Carbon dioxide and Hydrogen
c) Hydrogen and Water
d) Carbon monoxide and Hydrogen

8. Iodine crystals are:
a) Ionic
b) Molecular
c) Metallic
d) Covalent
9. The alkali metals are:
a) Strong reducing agents
b) Strong oxidising agents
c) Strong dehydrating agents
d) Strong hydrating agents
10. The number of chain isomers possible for an alkane having molecular formula C_5H_{12} is:
a) 5
b) 4
c) 3
d) 2
11. Halogen in an organic compound is estimated by:
a) Middleton method
b) Victor Mayers method
c) Carius method
d) Leibigs method
12. Brass is an alloy of:
a) Cu & Zn
b) Cu & Sn
c) Cu & Pb
d) Cu & Fe
13. Calcination is:
a) Complexation of the ore
b) Reduction of ore with CO
c) Oxidation of ore by air
d) The heating of ore in absence of air
14. Ozonolysis determines the:
a) The position of double bond
b) The number of double bonds
c) The number of active hydrogen
d) None of the above
15. A Compound of Xe and F found to have 53.5% Xe. The oxidation number of Xe in this compound is: (At.wt. of Xe = 131, F = 19):
a) -4 b) +4
c) -6 d) +6
16. Which of the following compounds does not contain acidic Hydrogen?
a) Butyne-2 b) Butyne-1
c) Ethyne d) Propyne
17. Which of the following metals cannot liberate hydrogen from dilute hydrochloric acid?
a) Zn b) Mg
c) Cu. d) Fe
18. The dehydrohalogenation of neopentylbromide with alcoholic KOH gives mainly:
a) But-2-ene
b) 2-methyl-but-2-ene
c) 2,2 dimethyl but-1-ene

d) 2-methyl but-1-ene

19. Picric acid contains which of the following groups:
a) Carboxylic
b) Sulphonic
c) Amino
d) Phenolic

20. Which one of the following is called Raney Nickel?
a) Ni-Al alloy
b) Ni-Cr alloy
c) Ni in fine state of division
d) Ni-Fe alloy

21. The experiment which resulted in the discovery of nucleus is:
a) Discharge tube experiment
b) Alpha ray scattering experiment
c) X ray diffraction experiment
d) Millicken's oil drop experiment

22. Molecular mass of a volatile substance may be determined by:
a) Dumas method
b) Leibigs method
c) Kjeldhal's method
d) Victor Mayer's method

23. Which enzyme catalyses the conversion of glucose to alcohol?
a) Carboxy Peptidase
b) Zymase
c) Maltase
d) Invertase

24. In which of the compound does the oxidising state of hydrogen becomes (-1)?
a) CH_4
b) NH_3
c) HCl
d) CaH_2

25. The shape of the orbital with $l = 1$ and $m_l = 0$:
a) Spherical
b) Dumb-bell
c) Clover leaf
d) Doughnut

26. Structure of H_2O_2 is:
a) Open book like
b) Linear
c) Closed Book like
d) Pyramidal

27. Which of the following set of atomic number refers to that of alkali metal?
a) 1, 12, 30, 4, 62
b) 37, 19, 3, 55
c) 9, 17, 35, 53
d) 3, 12, 56, 88

28. Bhopal gas tragedy of 1984 was caused by:
a) Methyl isocyanate
b) Carbon monoxide
c) Methyl Cyanate
d) Phosgene

29. The radius of an atomic nucleus is generally expressed in units of:
a) Debye
b) Coulomb
c) fermi
d) Tesla
30. E.D.T.A. is generally:
a) Mono dentate ligand
b) Bidentate ligand
c) Tetradentate ligand
d) Hexadentate ligand
31. The compound $[Co(NO_2)(NH_3)_5]Cl_2$ and $[Co(ONO)(NH_3)_5]Cl_2$ are examples of:
a) Linkage isomerism
b) Geometrical isomerism
c) Ligand isomerism
d) Ionisation isomerism
32. An Octahedral complex is formed when hybrid orbital's of the following type are involved:
a) sp^3
b) dsp^2
c) sp^3d^2
d) sp^3d
33. Saponification of an ester is:
a) Hydrolysis of an ester by an acid
b) Hydrolysis of an ester by alkali
c) Thermal decomposition of esters
d) Trans-esterification
34. $K_4[Fe(CN)_6]$ is called:
a) Potassium hexacyanoferrate (II)
b) Potassium ferricyanide
c) Potassium hexacyanoferrate (III)
d) Prussian Blue
35. Refining of petroleum involves the process of:
a) Simple distillation
b) Fractional distillation
c) Distillation under reduced pressure
d) Destructive distillation
36. The order of stability of rotamers of ethane is:
a) Eclipsed > Skew > Staggered
b) Eclipsed > Staggered > Skew
c) Staggered > Skew > Eclipsed
d) Staggered > Eclipsed > Skew
37. Zig Zag motion of colloidal particles was first time observed by:
a) Zsigmonty
b) Ostwald
c) Robert Brown
d) John Tyndall
38. Which of the following Compounds can be used as antifreeze in automobile radiators?
a) nitrophenol
b) Ethylalcohol
c) Glycol
d) Glycerol
39. The oxidation number of carbon in $C_{12}H_{22}O_{11}$ is:
a) +22
b) Zero
c) +6
d) +4
40. Isobars have same number of:

a) Protons b) Electrons
c) Neutrons d) Nucleons

41. Photochemical halogenation of alkane is an example of:
a) Electrophilic substitution
b) Electrophilic Addition
c) Nucleophillic substitution
d) Free radical substitution

42. 1°, 2°, & 3° alcohols can be distinguished by:
a) Borches test b) Lucas test
c) Hinsberg test d) Tollens test

43. Intra molecular hydrogen bond exists in:
a) Ortho nitrophenol b) Ethyl Alcohol
c) Water d) p-chlorophenol

44. Which of the following is not a condensation polymer?
a) Nylon 6,6 b) Bakelite
c) Dacron d) Buna S

45. Zeisel method is used to estimate:
A) Alcoholic Group b) Amino Group
c) Methoxy Group d) Halo Group

46. How many moles are there in 40 L of Co_2 at STP?
a) 178.6 mol b) 17.86 mol
c) 1.786 mol d) 27.8 mol

47. Baeyers reagent is:
a) Alkaline permanganate solution
b) Acidified permanganate solution
c) Neutral permanganate solution
d) Aqueous bromine solution

48. Which organic compound Friedrich Wohler synthesised?
a) Benzene b) Uric Acid
c) Uracil d) Urea

49. Reduction of Ketones with zinc amalgam and concentrated HCL is known as:
a) Stephens reduction
b) Clemmensen Reduction
c) Rosenmund reduction
d) Mendius reduction

50. Adsorbed hydrogen by Palladium is known as:
a) Atomic b) Nascent
c) Occluded d) molecular

51. Which of the following is an extensive property of the system?
a) Refractive index b) Viscosity
c) Temperature d) Volume
52. Which of the following element does not belong to the family indicated?
a) Mn-Alkaline earth metal b) Rb-Alakli metal
c) Ni-transition metal d) Xe-Noble gas
53. The maximum magnetic moment is shown by the ion with electronic configuration of:
a) $3d^8$ b) $3d^5$ c) $3d^7$ d) $3D^6$
54. Which ion gives coloured solution?
a) CU^+ b) Zn^{2+} c) Ag^+ d) Fe^{2+}
55. A mordant dye among the following is:
a) Indigo b) Alizarin
c) Methyl orange d) Orange I
56. A compound formed by element A and B crystallises in the cubic structure where A atoms are at the corners and B atom at the face centre. The formula of the compound is:
a) AB_3 b) A_2B
c) AB_2 d) A_2B_3
57. The example liquid as dispersed medium in colloidal system is:
a) Milk b) Fog
c) Cheese d) Smoke
58. Aniline is separated from aniline - water mixture by:
a) Crystallisation b) Steam Distillation
c) Solvent Extraction d) Sublimation
59. The organic halogen compound used as refrigerant in refrigeration and air conditioner is:
a) DDT b) Freon
c) BHC d) CCl_4
60. Glucose on oxidation with bromine water gives:
a) Gluconic acid b) Tartaric acid
c) Sacharic acid d) Tartonic acid
61. Which one of the following binary liquid system shows positive deviation from Raoults law:
a) $CHCl_3$ Ether b) CS_2-Acetone
c) Aniline - Acetone d) $CHCL_3$-Acetone
62. The correct formula of Plaster of Paris is:
a) $CaSO_4 2H_2O$ b) $CaSO_4 H_2O$
c) $Ca_2SiO_4 2H_2O$ d) $CaSO_4 1/2H_2O$
63. The spectral region of Lyman series is
a) IR
b) UV
c) Visible
d) Radiowave
64. Aspirin is known as
a) Phenyl Salicylate
b) Acetyl Salicylate

d) Methyl Salicylic Acid
d) Acetyl Salicylic Acid

65. The compressibility factor for a real gas at high pressure is
a) 1 b) 1+pb/RT
c) 1-pb/RT d) 1+RT/pb

66. Lassaignes test for the detection of nitrogen will fail in the case of
a) NH_2CONH_2 b) $NH_2CONHNH_2HCl$
c) NH_2NH_2HCl d) $C_6H_5NHNH_2HCl$

67. The e.m.f of the cell
$Zn/Zn^{2+}(1M)||Cu^{2+}(1M)/Cu$ will be
(Given $E^{\circ}_{Zn^{2+}/Zn} = -0.76V$ and $E^{\circ}_{Cu^{2+}/Cu} = +0.34V$)
a) +0.42 V b) -0.42V
c) +1.10 V d) -1.10 V

68. Bohr model of hydrogen atom was unable to explain
a) Rydberg formula of atomic spectra
b) Heisenbergs uncertainty principle
c) Plancks law of energy quantisation
d) Rutherford's model of atomic structure

69. The molecule of NO is
a) paramagnetic
b) Diamagnetic
c) Ferromagnetic
d) An even electron molecule

70. Energy of a photon having wavenumber 1.00 cm^{-1}
a) 6.62×10^{-34} J b) 6.62×10^{-36} J
c) 1.99×10^{-23} J d) 6.62×10^{-32} J

71. Among the following compounds the one that is most reactive towards electrophilic nitration is
a) Benzoic acid b) Nitro benzene
c) Toluene d) Benzene

72. Which of the following acids does not exhibit optical isomerism?
a) Maleic acid b) α-amino acids
c) Lactic acid d) Tartaric acid

73. Which of the following is most basic?
a) $(CH_3)_2NH$ (b) $(CH_3)_2N$
(c) CH_3NH_2 d) $C_2H_5NH_2$

74. The IUPAC name for Isobutyl group is
a) 1-methyl propyl b) 2-methyl propyl
c) Isopropyl methyl d) 1,1-dimethyl ethyl
75. Eletrolysis of water with one faraday of electricity gives
a) 1 gm equivalent of oxygen
b) 1 mole of oxygen
c) 1 molecule of oxygen
d) 1 atom of oxygen
76. A carbonyl group can be converted into $-CH_2-$ group by
a) NH_2NH_2/HCl (b) Zn-Hg/Conc.HCl
(c) H_2/Ni d) $LiAlH_4$
77. Most abundant actinoid is
a) Uranium b) Osmium
c) Neptunium d) Thorium
78. Which one of the following contains Ionic, Covalent and co-ordinate bonds?
a) NaOH (b) NaCl
(c) NaCN (d) NaNC
79. Which of these has no unit?
a) Electro negativity
b) electron-Affinity
c) Ionisation energy
d) Excitation Potential
80. Which one of the following is an oxide ore?
a) Malachite b) Copper glance
c) Haematite d) Zinc blende
81. The number of Bravais lattices in a cubic crystal is
a) 1 b) 4
c) 14 d) 32
82. Photoelectric effect is maximum in
a) Cs b) Na
c) K d) Li
83. Sangers reagent is used for the identification of
a) N-terminal of a peptide chain
b) C-terminal of a peptide chain
c) Side chain of amino acid
d) Molecular weight of peptide chain
84. Among the following the one having longest chain is
a) Neopentane
b) Isopentane
c) 2 Methyl pentane
d) 2,2-Dimethyl butane
85. Hydrogen peroxide is used as an antiseptic under the name
a) Bleaching powder b) catechol
c) Nesslers reagent d) Perhydrol
86. Which of the following is not aromatic?
a) cyclooctatetraene
b) cyclopentadienyl anion

c) Thiophene
d) cycloheptatrien cation

87. The weakest bond is
a) Hydrogen
b) Metallic
c) Covalent
d) Vander walls

88. The unit of rate constant for a zero order reaction is
a) S^{-1}
b) $mol.LS^{-1}$
c) $molL^{-1}S^{-1}$
d) No unit

89. In a volmetric experiment it was found that a solution of $KMnO_4$ is reduced to $MnSO_4$. If the normality of the solution is 1.0N, then molarity of the solution will be:
a) 0.5 M
b) 0.2 M
c) 1.0 M
d) 0.4M

90. The first fraction obtained during the fractionation of petroleum is
a) Hydrocarbon gases
b) Kerosene oil
c) Gasoline
d) Diesel oil

91. Identify the gas which is readily adsorbed by activated charcoal
a) N_2
b) SO_2
c) H_2
d) O_2

92. Benzoin is
a) Compound containing an aldehyde and a ketonic group
b) α,β-Unsaturated acid
c) α-hydroxy aldehyde
d) α-hydroxy ketone

93. The compound used as a fire extinguisher under the name "pyrene":
(a) $CHCl_3$
b) CCl_2F_2
(c) CH_2Cl_2
(d) CCl_4

94. Pick out the Unsaturated fatty acid from the following
a) Stearic acid
b) Lauric acid
c) Oleic acid
d) Palmitic acid

95. In galvanic cell, the electrons flow from
a) Anode to cathode through the solution
b) Cathode to anode through the solution
c) Anode to cathode through the external circuit
d) Cathode to anode through the external circuit

96. The hybridisation of Sulphur in sulpur dioxide is

a) sp b) sp^3
c) sp^2 d) dsp^2

97. Chemical equation is balanced according to the law

a) Multiple proportion
b) Reciprocal proportion
c) Definite proportion
d) Conservation of mass

98. A molal solution is one that contains, one mole of a solute in

a) 1000 g of solvent
b) 1000 g of solution
c) One litre of the solution
d) One litre of the solvent

99. Propyne on polymerization gives

a) Benzene
b) Mesitylene
c) Propyl benzene
d) Ethyl benzene

100. The compound which is not a Lewis acid

a) BF_3 b) $AlCl_3$
c) $BeCl_2$ d) $SnCl_4$