1. The phrase “Stranger gas” refers to _____
A. Nitrous Oxide
B. Xenon$
C. Argon
D. None of these

2. Which of the following alcohols is generally used as fuel?
A. Methyl alcohol
B. Propylene
C. Ethyl alcohol$
D. Glycolic alcohol

3. Which of the following is used in photography?
A. Sodium thiosulphate$
B. Potassium sulphate
C. Aluminum sulphate
D. None of these

4. Which is the solvent used in nail polish remover?
A. Benzene
B. Iodine
C. Acetone$
D. None of these

5. Which of the following four elements is heaviest?
A. Iron
B. Nitrogen
C. Carbon
D. Mercury$

6. Which of the following is used in manufacturing glass?
A. Silica$
B. Potassium Chloride
C. Aluminum nitrate
D. None of these

7. Which of the following elements is abundant in the earth’s crust?
A. Aluminum
B. Uranium
C. Plutonium
D. Silicon$

8. Which of the following is homonuclear?
A. Hydrogen
B. Oxygen
C. Both A and B$
D. None of the above

9. Which of the following gasses is heteronuclear?
A. Carbon dioxide$
B. Oxygen
C. Hydrogen
D. None of these

10. What is PVC?
A. Polyvinyl Carbide$
B. Polyvinyl Chloride
C. Polyvinyl Carbonate
D. Phosphoric Vinyl Chloride

11. Which of the following is used for cloud seeding?
A. Silver iodide$
B. Potassium Chloride
C. Manganese bromide
D. None of these

12. How many isotopes does Polonium have?
A. 33$
B. 40
C. 12
D. None of these

13. Which of the following is the SI unit of radioactivity?
A. Radiances
B. Becquerel$
C. Henri
D. None of the above

14. Which of the following is the cause for acid rain?
A. Carbon monoxide
B. Nitrous oxide
C. Sulphur dioxide
D. Both B and C$

15. Which of the following properties of water is responsible for water drops being spherical in shape?
A. Surface tension$
B. Neutral in acidity
C. High viscosity
D. None of these

16. What is a Pascal equal to?
A. On Newton per square meter$
B. On Newton per meter
C. On Newton per cubic meter
D. None of these

17. Which of the following statements is true with respect to the Antoine equation?
A. It is a mathematical expression of the relation between the volume and the temperature of pure liquid or solid substances
B. It is a mathematical expression of the relation between the vapor pressure and the density of pure liquid or solid substances
C. It is a mathematical expression of the relation between the vapor pressure and the temperature of pure liquid or solid substances$
D. None of the above

18. Which of the following statements is true?
A. Only half of the isotopes of polonium are radioactive
B. All the isotopes of polonium are radioactive$
C. Only one of the isotopes of polonium is radioactive
D. None of the isotopes of polonium are radio active

19. Which of the following is a Relatively more stable entities with unpaired electrons?
A. CO
B. NO$
C. O2
D. None of the above

20. Atoms bond in order to____
A. Increase their potential energy and gain stability
B. Reduce their potential energy and gain stability$
C. Reduce their potential energy and lose stability
D. None of the above

21. What is a polar bond?
A. It is a type of bond between two atoms in which electrons are shared unequally$
B. It is a type of bond between two atoms in which electrons are shared equally
C. It is a type of bond between two atoms in which electrons are not shared at all
D. None of the above

22. What is a hydrogen bond**?**
A. it is the electrostatic attraction between polar molecules that occurs when a hydrogen (H) atom bound to any other atom
B. it is the electrostatic attraction between polar molecules that occurs when a hydrogen (H) atom bound to a highly electronegative atom$
C. it is the electrostatic attraction between polar molecules that occurs when any atom bound to a highly electronegative atom such as hydrogen
D. none of the above

23. which of the following is a hydrocarbon in which all the four valencies of carbon atoms are fully utilized?
A. Alkynes
B. Alkenes
C. Alkanes$
D. Alkalies

24. Which of the following is used as a common industrial catalyst in the Hydrogenation of alkenes?
A. platinum,
B. nickel or
C. palladium
D. All the above$

25. Alkenes are also known as
A. Paraffins
B. Olefins$
C. Alkalis
D. None of these

26. Who among the following discovered Benzene?
A. Madam Curie
B. Michael Faraday$
C. Reginald Cooper
D. None of the above

27. Which of the following is a major component of natural gas?
A. Ethane
B. Methane$
C. Butane
D. Ketene

28. Which of the following is produced when Calcium Carbide reacts with water?
A. Ethane
B. Methane
C. Acetylene$
D. None of the above

29. The acylation of benzene is called
A. Friedel-Crafts reaction$
B. Friedel Castro Reaction
C. Frederic-Crafts reaction
D. None of these

30. Which of the following is not true with gases?
A. They have mass
B. They do not mix well$
C. They defuse easily
D. They can be compressed

31. Which of the following is true with Boyle's law?
A. Boyle's law states that *at constant temperature* for a fixed mass, the absolute pressure and the volume of a gas are inversely proportional$
B. Boyle's law states that *at constant temperature* for a fixed mass, the absolute pressure and the volume of a gas are directly proportional
C. Boyle's law states that *at constant temperature* for a fixed mass, the absolute pressure and the volume of a gas are completely uncorrelated
D. None of the above

32. What does Graham's state?
A. the rate of effusion of a gas is inversely proportional to the square root of the mass of its particles$
B. the rate of effusion of a gas is directly proportional to the square root of the mass of its particles
C. the rate of effusion of a gas is inversely proportional to the square of the mass of its particles
D. the rate of effusion of a gas is directly proportional to the square of the mass of its particles

33. in general, how many different scales of temperature do we use in chemistry?
A. One
B. Two
C. Three$
D. Eight

34. Which of the following represents a graph plotted by Boyle's law (between pressure and volume)?
A. A straight line passing through the origin
B. A parabolic curve$
C. A curve convex to the X-Axis, with a pre defined maximum
D. None of these

35. What will happen to the volume of the gas, if the pressure is doubled while maintaining constant temperature?
A. The volume will double
B. The volume will be reduced to one-fourth
C. The volume will be reduced by half$
D. None of these

36. What are the units of gas constant?
A. Same as that of the energy
B. Energy per mole
C. Energy per constant temperature and volume
D. energy per temperature increment per mole$

37. What is "Poises"?
A. it is an amphibious Mediterranean fish from which many alkynes can be extracted
B. it is the unit of dynamic viscosity in CGS system$
C. it is the ratio of the atomic weights of phosphorus and iodine
D. none of these

38. Evaporation results in lower temperature because _____
A. molecules with high kinetic energy escape$
B. molecules with high kinetic energy accumulate in the liquid and solidify
C. molecules with low kinetic energy escape
D. none of the above

39. What is effusion?
A. It is a process in which a solid converts to gaseous state
B. It is a process in which a gas converts to liquid state
C. it is the process in which a gas escapes through a small hole$
D. It is a process in which molecules of a solid evaporate under very low temperature

40. Which of the following describes conversion of solid state directly into a gaseous state without going through liquid state?
A. Condensation
B. Evaporation
C. Effusion
D. Sublimation$

41. What is anisotropy?
A. It is the property of being directionally dependent$
B. It is another name for isotropy
C. It is an alloy made by fusing isotopes from different radioactive elements
D. None of the above

42. To which of the following crystalline forms does diamond belong to?
A. Metallic crystal
B. Molecular crystal
C. Covalent crystal$
D. None of the above

43. Which of the following temperatures is referred to as absolute zero?
A. 0 K$
B. 273 K
C. -32 F
D. 0 C

44. Which of the following statements is true?
A. Sulphur Dioxide diffuses 4 times faster than Helium
B. Helium diffuses 4 times faster than Sulphur Dioxide$
C. Helium and Sulphur Dioxide diffuse at the same rate
D. None of the above

45. Which of the following has the lowest Prandtl number?
A. Mercury$
B. Water
C. Engine oil
D. Refrigerant

46. Which of the following is true with respect to Prantl number?
A. It is always an integer
B. It is a dimensionless number$
C. It is same as the atomic number of the elements
D. All the above

47. In Fourier's law, the general which of the following is treated as a constant?
A. Heat flux density
B. Temperature gradient
C. Thermal conductivity$
D. None of the above

48. The reciprocal of resistance is known as
A. Conductance$
B. Negative resistance
C. Residual resistance
D. Lubricance

49. What is Biot number?
A. It is heat transfer coefficient
B. it is a dimensionless quantity used in heat transfer calculations$
C. it is the thermal conductivity coefficient of a conducting metal
D. none of these

50. Which of the following statements is true?
A. The heat transfer co-efficient in film type condensation is less than that for dropwise condensation$
B. The heat transfer co-efficient in film type condensation is four times more than that for dropwise condensation
C. The heat transfer co-efficient in film type condensation is same as that for dropwise condensation
D. None of the above

51. In a particular instance, the rate of a chemical reaction doubles for every 10°C rise of temperature. What is the rate of increases in the reaction If the temperature is raised by 40°C?
A. 32 times
B. 16 times$
C. 8 times
D. 4 times

52. What is an endothermic process?
A. It is a process or reaction in which the system releases or gives out energy to its surroundings in the form of heat
B. It is a process or reaction in which the system gives out electro magnetic energy to its surroundings
C. It is a process or reaction in which the system absorbs energy from its surroundings in the form of heat$
D. None of these

53. What is a Zero-order reaction?
A. It has a a constant rate of reaction
B. It is a reaction where the radioactivity of the reactants is reduced to zero
C. It has a rate that is independent of the concentration of the reactant$
D. None of these

54. What happens when a catalyst is used in a chemical reaction?
A. The rate of a chemical reaction increases due to the participation of an additional substance called a catalyst$
B. The quantum of a thermal release increases due to the participation of an additional substance called a catalyst
C. The radio activity of atoms in a chemical reaction increases due to the participation of an additional substance called a catalyst

D. None of these

55. What is the SI unit of catalytic activity?
A. Katal$
B. Catalina
C. Catelenses
D. None of these

56. Which of the following can never occur in a chemical reaction involving two different reactants?
A. First order reaction
B. Pseudo second order reaction
C. Second order reaction
D. Unimolecular reaction$

57. Consider the reaction $NO_2 + CO \rightarrow NO + CO_2$ which is second-order in the reactant NO_2 and zero order in the reactant CO. The observed rate is given by
A. $r=k[CO.NO_2]^2$
B. $r=k[NO_2]^2$$
C. $r=k[CO.2NO_2]$
D. None of the above

58. Which of the following is the main reason why the reaction rates increase with increase in temperature?
A. The rate constant increases$
B. The rate constant decreases
C. In general, substances tend to expand with the increase in temperature
D. The temperature acts as a catalyst

59. Consider a certain first order reaction. It is found that it takes 64 seconds for the concentration of reactant to fall from 0.20 M to 0.10 M. How much time will it take for the concentration of reactant to fall from 0.10 M to 0.05 M?
A. 32 seconds
B. 16 seconds
C. 64 seconds$
D. 128 seconds

60. what is the order of the reaction H2 O2 + 2HI = I2 + 2H2O?
A. kinetically of the zero order
B. kinetically of the second order$
C. kinetically of the first order
D. none of the above

61. which of the following processes is used to produce hydrogen from hydrocarbons in the process of synthesis of ammonia from natural gas?
A. Steam reforming$
B. Fractional distillation
C. Oxidation
D. None of these

62. Which of the following processes can be used to convert Red phosphorous into white phosphorous?
A. Steam reforming
B. Fractional distillation
C. Vaporization and condensation$
D. None of these

63. Which of the following plant nutrients is supplied by urea?
A. Potash
B. Phosphorous
C. Nitrogen$
D. All the above

64. Fertilizers such as urea are often supplied in prilled form. Which of the following best describes the prilling process?
A. Prills are formed by melting prill substance and casting it in earthen moulds in a large shed usually referred to as prilling tower
B. Prills are formed by squeezing the substance under high pressure in a special compressor located inside a tall prilling tower
C. Prills are formed by allowing drops of the melted substance to freeze in mid-air after being dripped from the top of a tall prilling tower$
D. None of the above

65. How do you produce sodium tripolyphosphate?
A. $Na_5P_5O_{10}$
B. $Na_5P_3O_{10}$$
C. $Na_3P_3O_{10}$
D. $Na_3P_3O_5$

66. Which of the following are the properties of orthophosporic acid?
A. It is a polar molecule.
B. It is infinitely soluble in water
C. It is a solid at room temperature and pressure, when pure
D. All the above$

67. Which of the following is used in the Haber Process?
A. Iron based catalyst$
B. Nitrogen based catalyst
C. Alloy of gold and silver
D. None of these

68. What is the principle used in a jet pump?
A. temperature of one fluid is used for moving another fluid
B. momentum of one fluid is used for moving another fluid$
C. momentum of one fluid is used for reducing the temperature of another fluid
D. None of these

69. Why are Thiols (organosulfur compounds) are often referred to as mercaptans?
A. Because thiolate group bonds strongly with mercury compounds$
B. Because thiolate group come originally from Martian soil
C. Because mercury is the main element found in the thiolate group
D. None of these

70. What is the pour point of a liquid?
A. The pour point of a liquid is the pressure at which it becomes a gas flows into the atmosphere
B. The pour point of a liquid is the temperature at which it becomes a gas and reaches evaporates
C. The pour point of a liquid is the temperature at which it becomes semi solid and loses its flow characteristics$
D. None of these

71. What is Viscosity Index?
A. It is an arbitrary measure for the change of viscosity with variations in temperature$
B. It is an arbitrary measure for the change of temperature with variations in viscosity
C. It is an arbitrary measure for the change of viscosity with variations in pressure
D. It is an arbitrary measure for the change of viscosity with variations in light

72. What is the refinery process for extracting asphaltenes and resins from heavy vacuum gas oil is called?
A. Vacuum extraction
B. Solvent deasphalting$
C. Asphaltene gasification
D. None of these

73. Which of the following processes is used to convert hydrocarbons to aromatics?
A. Aromation
B. Aro-conversion
C. Catalytic reforming$
D. Hydrocarbonation

74. What is the main byproduct of the dehydrogenation process used to produce high-octane aromatic hydrocarbons?
A. Hydrogen$
B. Carbon dioxide
C. Helium
D. Heavy water

75. What are asphaltenes?
A. Asphaltenes are molecular substances that are found in crude oil$
B. Asphaltenes are heavy substances that are found in asparagus oil
C. Asphaltenes are light substances that are created by decomposition of vegetative matter under high pressure.
D. None of these

76. What is Doctor Sweetening Process?
A. It is an industrial process through which large quantities of diabetic sugar molecules are produced
B. It is an industrial chemical process for converting gasoline into other higher order hydrocarbons
C. It is an industrial chemical process for converting mercaptans into disulfides$
D. None of these

77. Which of the following tests is used to find out the softening point of bitumen.
A. Ball and bat test
B. Ball and ring test$
C. Ball bearing test
D. All the above

78. Which of the following processes is used to converts n-paraffins to i-paraffins?
A. Isomerisation$
B. Iodinization
C. Paraffin polymerization
D. None of these

79. Which of the following is used as a catalyst in catalytic reforming?
A. Platinum
B. Rhenium
C. Both A and B$
D. None of these

80. Which of the following is an enantiomer? is the
A. sedative thalidomide
B. escitalopram
C. citalopram
D. all the above$

81. what are the units used to measure the standard enthalpy of formation?
A. KJ/ Mol$
B. KJ / meter
C. KJ / Cubic Meter
D. None of these

82. Which of the following is true with neutron?
A. It has negative charge and no mass
B. It has positive charge and no mass
C. It has no charge and no mass
D. It has no charge and mass$

83. Which of the following can be used to deflect cathode rays?
A. Electric field
B. Magnetic field
C. Both A and B$
D. None of the above

84. What is the mass of an electron?
A. $9.10938291 \times 10^{-31}$ kilograms$
B. $9.10938291 \times 10^{-21}$ kilograms
C. $9.10938291 \times 10^{-11}$ kilograms
D. None of these

85. What is an atomic orbital?
A. It is a mathematical function that describes the wave-like behavior of either one electron or a pair of electrons in an atom$
B. It is the orbit in which moving electrons collide with protons
C. It is a mathematical function that describes the wave-like behavior of neutrons within an atom
D. None of these

86. In a radioactive element, which of the following is the most penetrating radiation?
A. Alpha rays
B. Beta rays
C. Gamma rays$
D. Delta rays

87. What does Pauli Exclusion Principle state?
A. it is impossible for two electrons of a poly-electron atom to have the same values of the four quantum numbers$
B. Two electrons of a poly-electron atom can always have the same values of the four quantum numbers
C. it is impossible for any electron of a poly-electron atom to have four quantum numbers
D. none of these

88. which of the following is true with Grashof number?
A. It approximates the ratio of the buoyancy to viscous force acting on a fluid.
B. It involves situations of natural convection.
C. It is named after the German engineer Franz Grashof.
D. All the above$

89. Which of the following modes of heat transfer is used in the cooling of air cooled internal combustion engine?
A. Convection$
B. Conduction
C. Radiation
D. All the above

90. Which of the following has the lowest heat transfer coefficient?
A. Water
B. Mercury
C. Air$
D. Steam

91. What is emissivity of the surface of a material?
A. It is the effectiveness in emitting energy as thermal radiation$
B. It is the effectiveness in absorbing energy as thermal radiation
C. It is the effectiveness in reflecting energy thermal radiation into atmosphere
D. None of these

92. Which of the following is not suited for heat exchanger tubes?
A. Copper
B. Stainless steel
C. Lead$
D. All the above

93. Which of the following has the highest thermal conductivity?
A. Copper$
B. Coal
C. Iodine
D. Nitrogen

94. Which of the following flows lead to maximum heat transfer rate?
A. Turbulent$
B. Co-planar
C. Co-current
D. Laminar

95. Which of the following properties of a solution provides highest crystal growth during crystallization process?
A. Density
B. Super saturation$
C. Viscosity
D. Turbidity

96. What is one BTU equal to?
A. 105 joules
B. 1055 joules$
C. 10555 joules
D. None of these

97. What is Karrick process?
A. Low temperature carbonization$
B. High temperature carbonization
C. Decarburization
D. Carbon plating

98. Which of the following is a unit of measurement for calorific value?
A. KJ/kg$
B. KJ
C. KJ/sq.M.
D. KJ/meter

99. Which of the following describes the combustion reaction of gasoline?

A. Endothermic
B. Exothermic$
C. Catalytic
D. None of these

100. Which of the following fuels has the highest Wobbe Index?

A. Hydrogen
B. Methane
C. N-butane$
D. Ethane