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DEPARTMENT OF CHEMISTRY
QUESTION PAPER -2

- How many carbon atoms are present in 0.35 ml of $C_6H_{12}O_6$?
 - 6.023×10^{23} carbon atoms
 - 1.26×10^{23} carbon atoms
 - 1.26×10^{24} carbon atoms**
 - 6.023×10^{24} carbon atoms
- A gas absorbs a photon of 355 nm and emits two wavelength, if one of the emission is at 680 nm, the other is at
 - 518 nm
 - 1035 nm
 - 325 nm
 - 743 nm**
- According to periodic law of elements, the variation in properties of elements is related to their
 - Atomic number**
 - Atomic mass
 - Nuclear mass
 - Neutron- proton ratio
- Which of the following elements has maximum atomic volume?
 - K**
 - Ca
 - Fe
 - Br
- In XeF_2 , XeF_4 & XeF_6 , the number lone pair of electrons on Xe are respectively
 - 2, 3, 1
 - 1, 2, 3
 - 4, 1, 2**
 - 3, 2, 1
- Calculate the amount of heat evolved when 500 cm^3 of 0.1 M HCl is mixed with 200 cm^3 of 0.2 M NaOH.
 - 57.3 kJ
 - 2.865 KJ
 - 2.292 KJ**
 - 0.573 KJ
- The oxidation of Sulphur dioxide by oxygen to Sulphur trioxide is an exothermic reaction. The yield of Sulphur trioxide will be maximum if
 - Temperature is increased and pressure is kept constant
 - Temperature is reduced and pressure is increased**
 - Both Temperature pressure are increased
 - Both Temperature pressure are reduced

8. Oxidation number of S in $\text{H}_2\text{S}_2\text{O}_8$ is
- a) +2
 - b) +4
 - c) +6
 - d) +7
9. Hydrogen acts as a reducing agent and thus resembles
- a) Halogen
 - b) Noble gas
 - c) Radioactive elements
 - d) Alkali metals
10. Which is distilled first?
- a) Liquid carbon dioxide
 - b) Liquid Nitrogen
 - c) Liquid oxygen
 - d) Liquid hydrogen
11. Which of the following is not correct about the solution when moderate amount of sodium metal is dissolved in liquid ammonia at low temperature?
- a) Sodium ions are produced in solution
 - b) We get a blue colored solution
 - c) The solution act as a good conductor of electricity
 - d) Liquid ammonia remains diamagnetic
12. In which of the following the inert pair effect is most prominent
- a) C
 - b) Si
 - c) Ge
 - d) Pb
13. Which of the following exist as a covalent crystal in the solid state?
- a) Iodine
 - b) Silicon
 - c) Sulphur
 - d) Phosphorus
14. The compound which has one isopropyl group is
- a) 2, 2 3, 3-tetramethylpentane
 - b) 2, 2-dimethylpentane
 - c) 2, 2, 3-trimethylpentane
 - d) 2-methylpentane
15. Iodoethane reacts with sodium in presence of ether. The product is
- a) Pentane
 - b) Propane
 - c) Butene
 - d) Butane

16. Suitable for preparation of higher alkanes from a lower alkyl halide is subjected to
- Reduction
 - Hoffmann Bromamide reaction
 - Hunsdiecker reaction
 - Wurtz reaction**
17. Benzene reacts with fuming sulphuric acid to give
- Sodium benzene sulphotane
 - Benzene sulphonic acid**
 - Sodium benzoate
 - All of these
18. Oxides of nitrogen
- Are toxic to living tissues
 - Cause respiratory diseases in children
 - Retard the rate of photosynthesis
 - Causes all of these**
19. Atmospheric gases are found to trap the sun's heat near the earth's surface and keep it warm. This effect is called
- Green house effect**
 - Joules effect
 - Thermal effect
 - None of these
20. Soil pollution is due to
- Insecticides
 - Pesticides
 - Herbicides
 - All of these**
21. Graphite is an example of
- Ionic solid
 - Covalent solid**
 - Molecular solid
 - Metallic crystal
22. Which is amorphous solid
- Rubber
 - Plastic
 - Glass
 - All**
23. Calculate the vapor pressure of the solution at 100°C containing 3 grams of cane sugar in 33 grams of water. (At. Wt. C= 12, H=1, O=16)
- 760 mm
 - 756.90 mm**
 - 758.30 mm
 - None of these
24. Vapor pressure of a solution is
- Directly proportional to the mole fraction of the solvent**
 - Inversely proportional to the mole fraction of the solute
 - Inversely proportional to the mole fraction of the solvent

- d) Directly proportional to the mole fraction of the solute
25. In a hydrogen-oxygen fuel cell, combustion of hydrogen occurs to
- Produce high purity water
 - Create potential difference between the two electrodes
 - Generate heat
 - Remove absorbed oxygen from electrode surface
26. When a lead storage battery is discharged, then
- Sulphur dioxide is evolved
 - Lead sulphate is consumed
 - Lead is formed
 - Sulphuric acid is consumed
27. In adsorption of oxalic acid on activated char coal, the activated char coal is known as
- Adsorbent
 - Absorbate
 - Adsorber
 - Absorber
28. In a chemical adsorption, how many layers are adsorbed?
- One
 - Two
 - Multi
 - Zero
29. Adsorption is always
- Endothermic
 - Exothermic
 - Either (1) or (2)
 - None of these
30. The conversion of maltose to glucose is possible by the enzyme
- Zymase
 - Lactase
 - Maltase
 - Diastase
31. Which of the following is carbonate ore?
- Pyrolusite
 - Malachite
 - Diaspore
 - Cassiterite
32. Sulphide ore are generally concentrated by
- Froth Floatation process
 - Magnetic separation
 - Gravity separation
 - By hand picking
33. Black jack is an ore of
- Chromium
 - Tin
 - Zinc
 - Nickel
34. The number of P-O-P bonds in cyclic meta-phosphoric acid is
- Zero
 - Two

- c) Three
d) Four
35. Which is the most thermodynamically stable allotropic form of phosphorus.
a) Red
b) White
c) Black
d) Yellow
36. XeF_2 molecule is
a) Square planar
b) Trigonal bi-pyramidal
c) Trigonal planar
d) Linear
37. The coinage metals are
a) Iron, cobalt, nickel
b) Copper and zinc
c) Copper, silver and gold
d) Gold and platinum
38. Platinum, Palladium, Iridium etc., are called noble metals because
a) Alfred noble discovered them
b) They are inert towards many common reagents
c) They are shining lustrous and pleasing to look at
d) They are found in active state
39. The color of light adsorbed by an aqueous solution of Copper Sulfate is
a) Orange-red
b) Blue-green
c) Yellow
d) Violet
40. The coordination number of a metal in coordination compound is
a) Same as primary valency
b) Sum of primary and secondary valencies
c) Same as secondary valency
d) None of these
41. Potassium ferrocyanide is a
a) Normal salt
b) Mixed salt
c) Double salt
d) Complex salt
42. Alkyl halide reacts with dialkyl lithium cuprate to give
a) Alkenes
b) Alkyl copper halide
c) Alkanes
d) Alkenyl halide
43. Aryl halide is less active than alkyl halide towards nucleophilic substitution because
a) Less stable carbonium ion
b) Due to large C-Cl bond energy
c) Inductive effect
d) Resonance stabilization and SP^2 -hybridization of C attached to halide

44. Which of the following compound is oxidized to prepare methyl ethyl ketone
- 2-propanol
 - 1-butanol
 - 2-butanol**
 - Tert-butyl alcohol
45. Lucas test is used for
- Alcohols**
 - Amines
 - Diethylether
 - Glacial acetic acid
46. The most suitable method of the separation of a 1:1 mixture of ortho and para nitrophenols is
- Distillation**
 - Sublimation
 - Crystallization
 - Chromatography
47. Which of the following statement is correct regarding ease of dehydration in alcohols?
- Primary > secondary
 - Secondary > tertiary
 - Tertiary > Primary**
 - None of these
48. The reagent with which both acetaldehyde and acetone react easily is
- Fehling's reagent
 - Grignard reagent**
 - Schiff's reagent
 - Tollens's reagent
49. Hydrogenation of benzyl chloride in the presence of Pd on Barium Sulfate gives
- Benzyl alcohol
 - Benzaldehyde**
 - Benzoic acid
 - Phenol
50. Which one of the following is reduced with zinc and hydrochloric acid to give the corresponding hydrocarbon:
- Butan-2-one**
 - Acetic acid
 - Acetamide
 - Ethyl acetate
51. Which of the following compounds on reduction gives an amide?
- Alkyl cyanide
 - Aldoxime
 - Alkylisocyanide
 - All above**
52. N-ethyl phthalimide on hydrolysis gives
- Methyl alcohol
 - Ethyl amine**
 - Dimethylamine
 - Diethylamine

53. Vitamin C is:
- a) **Ascorbic acid**
 - b) Lactic acid
 - c) Citric acid
 - d) Paracetamol
54. Which of the following bases is not present in DNA
- a) Cytosine
 - b) Guanine
 - c) **Uracil**
 - d) Adenine
55. Which of the following is not a fat soluble vitamin?
- a) Vitamin A
 - b) Vitamin K
 - c) **Folic acid**
 - d) Vitamin C
56. Nylon-66 is a
- a) Natural polymer
 - b) **Condensation polymer**
 - c) Addition polymer
 - d) Substitution polymer
57. Which is not a polymer?
- a) **Sucrose**
 - b) Enzyme
 - c) Starch
 - d) Teflon
58. The antidepressant drugs are
- a) Cocaine
 - b) Valium
 - c) Methedrine
 - d) **All of the above**
59. Salol can be used as
- a) **Antiseptic**
 - b) Antipyretic
 - c) Analgesic
 - d) Disinfectant
60. Chloramphenicol is an
- a) Analgesic
 - b) Anaesthetic
 - c) **Antibiotic**
 - d) Antiseptic