

**ONE MARK TEST-II****SUBJECT : CHEMISTRY****TIME : 45 MINTS****STD : XI****(BOOK BACK FULL PORTION)****MARKS : 50****CHOOSE THE CORRECT ANSWER****50 X 1 = 50**

1. When 6.3 g of sodium bicarbonate is added to 30 g of acetic acid solution, the residual solution is found to weigh 33 g. The number of moles of carbon dioxide released in the reaction is  
 a) 3                      b) 0.75                      c) 0.075                      d) 0.3
2. The equivalent mass of ferrous oxalate is  
 (a)  $\frac{\text{molar mass of ferrous oxalate}}{1}$                       (b)  $\frac{\text{molar mass of ferrous oxalate}}{2}$   
 (c)  $\frac{\text{molar mass of ferrous oxalate}}{3}$                       (a) none of these
3. What is the maximum numbers of electrons that can be associated with the following set of quantum numbers ?  $n = 3, l = 1$  and  $m = -1$   
 a) 4                      b) 6                      c) 2                      d) 10
4. The total number of orbitals associated with the principal quantum number  $n = 3$  is  
 a) 9                      b) 8                      c) 5                      d) 7
5. How many electrons in an atom with atomic number 105 can have  $(n + l) = 8$  ?  
 a) 30                      b) 17                      c) 15                      d) unpredictable
6. Which one of the following is the least electronegative element?  
 a) Bromine                      b) Chlorine                      c) Iodine                      d) Hydrogen
7. The element with positive electron gain enthalpy is  
 a) Hydrogen                      b) Sodium                      c) Argon                      d) Fluorine
8. Which of the following is second most electronegative element?  
 a) Chlorine                      b) Fluorine                      c) Oxygen                      d) Sulphur
9. Which of the following pairs of elements exhibit diagonal relationship?  
 a) Be and Mg                      b) Li and Mg                      c) Be and B                      d) Be and Al
10. Heavy water is used as  
 a) modulator in nuclear reactions                      b) coolant in nuclear reactions  
 c) both (a) and (b)                      d) none of these
11. In solid ice, oxygen atom is surrounded  
 a) tetrahedrally by 4 hydrogen atoms                      b) octahedrally by 2 oxygen and 4 hydrogen atoms  
 c) tetrahedrally by 2 hydrogen and 2 oxygen atoms                      d) octahedrally by 6 hydrogen atoms
12. Zeolite used to soften hardness of water is, hydrated  
 a) Sodium aluminium silicate                      b) Calcium aluminium silicate  
 c) Zinc aluminium borate                      d) Lithium aluminium hydride

13. Formula of Gypsum is  
a)  $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$     b)  $\text{CaSO}_4 \cdot \frac{1}{2}\text{H}_2\text{O}$     c)  $3\text{CaSO}_4 \cdot \text{H}_2\text{O}$     d)  $2\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$
14. The name 'Blue John' is given to which of the following compounds ?  
a)  $\text{CaH}_2$     b)  $\text{CaF}_2$     c)  $\text{Ca}_3(\text{PO}_4)_2$     d)  $\text{CaO}$
15. The suspension of slaked lime in water is known as  
a) lime water    b) quick lime    c) milk of lime    d) aqueous solution of slaked lime
16. The value of universal gas constant depends upon  
a) Temperature of the gas    b) Volume of the gas  
c) Number of moles of the gas    d) units of Pressure and volume.
17. Use of hot air balloon in sports at meteorological observation is an application of  
a) Boyle's law    b) Newton's law    c) Kelvin's law    d) Brown's law
18. Consider the following statements  
i) Atmospheric pressure is less at the top of a mountain than at sea level  
ii) Gases are much more compressible than solids or liquids  
iii) When the atmospheric pressure increases the height of the mercury column rises  
Select the correct statement  
a) I and II    b) II and III    c) I and III    d) I, II and III
19. In an adiabatic process, which of the following is true ?  
a)  $q = w$     b)  $q = 0$     c)  $\Delta E = q$     d)  $P \Delta V = 0$
20. Which of the following is not a thermodynamic function ?  
a) internal energy    b) enthalpy    c) entropy    d) frictional energy
21. The temperature of the system, decreases in an \_\_\_\_\_  
a) Isothermal expansion    b) Isothermal Compression  
c) adiabatic expansion    d) adiabatic compression
22. Consider the following reversible reaction at equilibrium,  $\text{A} + \text{B} \rightleftharpoons \text{C}$ , If the concentration of the reactants A and B are doubled, then the equilibrium constant will  
a) be doubled    b) become one fourth    c) be halved    d) remain the same
23. Equimolar concentrations of  $\text{H}_2$  and  $\text{I}_2$  are heated to equilibrium in a 1 litre flask. What percentage of initial concentration of  $\text{H}_2$  has reacted at equilibrium if rate constant for both forward and reverse reactions are equal  
a) 33%    b) 66%    c)  $(33)^2\%$     d) 16.5 %
24. Which one of the following is incorrect statement ?  
a) for a system at equilibrium,  $Q$  is always less than the equilibrium constant  
b) equilibrium can be attained from either side of the reaction  
c) presence of catalyst affects both the forward reaction and reverse reaction to the same extent  
d) Equilibrium constant varied with temperature
25. Which one of the following gases has the lowest value of Henry's law constant ?  
a)  $\text{N}_2$     b) He    c)  $\text{CO}_2$     d)  $\text{H}_2$
26. Osmotic pressure ( $\pi$ ) of a solution is given by the relation  
a)  $\pi = nRT$     b)  $\pi V = nRT$     c)  $\pi RT = n$     d) none of these

27. Which one of the following binary liquid mixtures exhibits positive deviation from Raoult's law ?  
 a) Acetone + chloroform    b) Water + nitric acid    c) HCl + water    d) ethanol + water
28. Shape of  $\text{ClF}_3$  is  
 a) Planar triangular    b) Pyramidal    c) 'T' Shaped    d) none of these
29. According to VSEPR theory, the repulsion between different parts of electrons obey the order.  
 a)  $l.p - l.p > b.p - b.p > l.p - b.p$     b)  $b.p - b.p > b.p - l.p > l.p - b.p$   
 c)  $l.p - l.p > b.p - l.p > b.p - b.p$     d)  $b.p - b.p > l.p - l.p > b.p - l.p$
30. Shape and hybridisation of  $\text{IF}_5$  are  
 a) Trigonal bipyramidal,  $\text{Sp}^3\text{d}^2$     b) Trigonal bipyramidal,  $\text{Sp}^3\text{d}$   
 c) Square pyramidal,  $\text{Sp}^3\text{d}^2$     d) Octahedral,  $\text{Sp}^3\text{d}^2$
31. Ortho and para-nitro phenol can be separated by  
 a) azeotropic distillation    b) destructive distillation  
 c) steam distillation    d) cannot be separated
32. The purity of an organic compound is determined by  
 a) Chromatography    b) Crystallisation    c) melting or boiling point    d) both (a) and (c)
33. The number of stereoisomers of 1, 2 - dihydroxy cyclopentane  
 a) 1    b) 2    c) 3    d) 4
34. Heterolytic fission of C-Br bond results in the formation of  
 (a) free radical    (b) Carbanion    (c) Carbocation    (d) Carbanion and Carbocation
35. Which of the following species is not electrophilic in nature?  
 (a)  $\text{Cl}^+$     (b)  $\text{BH}_3$     (c)  $\text{H}_3\text{O}^+$     (d)  $+\text{NO}_2$
36. -I effect is shown by  
 a)  $-\text{Cl}$     b)  $-\text{Br}$     c) both a and b    d)  $-\text{CH}_3$
37. Some meta-directing substituents in aromatic substitution are given. Which one is most deactivating ?  
 a)  $-\text{COOH}$     b)  $-\text{NO}_2$     c)  $-\text{C} \equiv \text{N}$     d)  $-\text{SO}_3\text{H}$
38. 2 - butyne on chlorination gives  
 a) 1 - chloro butane    b) 1, 2 - dichloro butane  
 c) 1, 1, 2, 2 - tetrachlorobutane    d) 2, 2, 3, 3 - tetra chloro butane
39. Which of the following can be used as the halide component for Friedel-Crafts reaction ?  
 a) Chloro benzene    b) Bromo benzene    c) chloro ethane    d) isopropyl chloride
40. Chloroform reacts with nitric acid to produce  
 a) nitro toluene    b) nitro glycerine    c) chloropicrin    d) chloropicric acid
41. The most easily hydrolysed molecule under  $\text{S}_{\text{N}}1$  condition is  
 a) allyl chloride    b) ethyl chloride    c) isopropyl chloride    d) benzyl chloride
42. The name of  $\text{C}_2\text{F}_4\text{Cl}_2$  is \_\_\_\_\_  
 a) Freon - 112    b) Freon - 113    c) Freon - 114    d) Freon - 115

43. Ozone depletion will cause  
 a) forest fires      b) eutrophication      c) bio magnification      d) global warming
44. Release of oxides of nitrogen and hydrocarbons into the atmosphere by motor vehicles is prevented by using \_\_\_\_\_  
 a) grit chamber      b) scrubbers      c) trickling filters      d) catalytic convertors
45. Biochemical oxygen Demand value less than 5 ppm indicates a water sample to be  
 a) highly polluted      b) poor in dissolved oxygen      c) rich in dissolved oxygen      d) low COD
46. **Assertion:** Oxygen molecule is paramagnetic  
**Reason :** It has two unpaired electron in its bonding molecular orbital  
 a) both assertion and reason are true and reason is the correct explanation of assertion  
 b) both assertion and reason are true but reason is not the correct explanation of assertion  
 c) assertion is true but reason is false  
 d) Both assertion and reason are false
47. In an isothermal reversible compression of an ideal gas the sign of  $q$ ,  $\Delta S$  and  $w$  are respectively  
 a) +, -, -      b) -, +, -      c) +, -, +      d) -, -, +
48. **Assertion :** Generally alkali and alkaline earth metals form superoxides  
**Reason :** There is a single bond between O and O in superoxides.  
 a) both assertion and reason are true and reason is the correct explanation of assertion  
 b) both assertion and reason are true but reason is not the correct explanation of assertion  
 c) assertion is true but reason is false  
 d) both assertion and reason are false
49. In which process, fused sodium hydroxide is electrolysed for extraction of sodium ?  
 a) Castner's process      b) Cyanide process      c) Down process      d) All of these
50. Non-stoichiometric hydrides are formed by  
 a) palladium, vanadium      b) carbon, nickel      c) manganese, lithium      d) nitrogen, chlorine

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