

- For neutralisation of one mol of NaOH the mass of 70%  $\text{H}_2\text{SO}_4$  required is :  
(a) 48 g (b) 70 g  
(c) 49 g (d) 35 g
- Philosopher's wool on treatment with cobalt nitrate produce :  
(a) CoBaO (b) CoZnO  
(c) CoSrO (d) CoMgO
- The most stable carbonium ion is :  
(a)  $\text{CH}_3\overset{+}{\text{C}}\text{H}_2$  (b)  $\text{C}_6\text{H}_5\overset{+}{\text{C}}\text{H}_2$   
(c)  $\text{C}_6\text{H}_5\overset{+}{\text{C}}\text{HC}_6\text{H}_5$  (d)  $\text{C}_6\text{H}_5\text{CH}_2\overset{+}{\text{C}}\text{H}_2$
- The highest dipole moment is of :  
(a)  $\text{CF}_4$  (b)  $\text{CH}_3\text{OH}$   
(c)  $\text{CO}_2$  (d)  $\text{CH}_3\text{F}$
- The normality of mixture obtained by mixing 100 mL of 0.2 M  $\text{H}_2\text{SO}_4$  and 200 mL of 0.2 M HCl is :  
(a) 0.0267 (b) 0.2670  
(c) 1.0267 (d) 1.1670
- The green house effect is caused by :  
(a) NO (b)  $\text{NO}_2$   
(c) CO (d)  $\text{CO}_2$
- The density of air is 0.001293 g/cc. Its vapour density is :  
(a) 0.001293 (b) 8.2786  
(c) 14.48 (d) 6.2706
- The process of heating and suddenly cooling of steel is known as :  
(a) tempering (b) annealing  
(c) hardening (d) nitriding
- The bonding present between the carbon atoms of graphite :  
(a) metallic  
(b) ionic  
(c) covalent  
(d) van der Waals' forces

10. Compressibility factor for 1 mole of a van der Waals' gas at  $0^{\circ}\text{C}$  and 100 atmospheric pressure is found to be 0.5 the volume of gas molecules is :
- (a) 2.0224                      (b) 1.4666  
(c) 0.8542                      (d) 0.1119
11. An ideal gas is allowed to expand under adiabatic conditions. The zero value is of :
- (a)  $\Delta T = 0$                       (b)  $\Delta S = 0$   
(c)  $\Delta G = 0$                       (d) none of these
12. The maximum valency of an element having atomic number seven is :
- (a) 1                                      (b) 3  
(c) 5                                      (d) 7
13.  $\text{NH}_4\text{Cl}$  solution is :
- (a) neutral                              (b) acidic  
(c) basic                                      (d) amphoteric
14. For first order reaction, the unit of rate constant is :
- (a)  $\text{L mol}^{-1} \text{time}^{-1}$   
(b)  $\text{mol L}^{-1} \text{time}^2$   
(c)  $\text{time}^{-1}$   
(d) none of the above
15. Aniline chloroform and alcoholic KOH reacts to produce a bad smelling substance which is :
- (a) phenyl isocyanide  
(b) phenyl cyanide  
(c) chloro benzene  
(d) benzyl alcohol
16. In the titration of iodine against hypo the indicator used is :
- (a) starch  
(b) potassium ferricyanide  
(c) methyl orange  
(d) methyl red

17. Excess of ethanol and conc.  $\text{H}_2\text{SO}_4$  on heating up to  $140^\circ\text{C}$ . To produce :
- diethyl ether
  - diethyl sulphate
  - ethyl hydrogen sulphate
  - ethylene
18. The shape of  $\text{IF}_7$  molecule is :
- pentagonal bipyramidal
  - trigonal pyramidal
  - tetrahedral
  - square planar
19. The kinetic energy of 14 g of nitrogen gas at  $127^\circ\text{C}$  is [gas constant =  $8.31 \text{ J/K/mol}$ ]
- 4.4673 kJ
  - 3.857 kJ
  - 2.493 kJ
  - 1.857 kJ
20. Born-Haber cycle is used to determine :
- electron affinity
  - lattice energy
  - crystal energy
  - all of these
21. The oxidation number of phosphorus in  $\text{Ba}(\text{H}_2\text{PO}_2)_2$  is :
- +1
  - 1
  - +2
  - +3
22. A gas diffuses four times as quickly as oxygen. The molecular weight of gas is :
- 2
  - 4
  - 8
  - 16
23. Vitamin  $\text{B}_{12}$  contains the metal is :
- cobalt
  - manganese
  - magnesium
  - iron
24. The compound responds to Tollen's reagent is :
- $\text{CH}_3\text{COCH}_3$
  - $\text{CH}_3\text{CHO}$
  - $\text{CH}_3\text{CONH}_2$
  - $\text{CH}_3\text{COOH}$
25. When chloroform is exposed to air and sunlight the compound obtained is :
- chloral
  - acetyl chloride
  - phosgene
  - methyl chloride
26. The laughing gas is :
- nitrous oxide
  - dinitrogen trioxide
  - nitric oxide
  - nitrogen peroxide
27. Alkyl halide on heating with dry  $\text{Ag}_2\text{O}$  produce :
- ether
  - ester
  - ketone
  - hydrocarbon
28. Borazine is represented by the molecular formula :
- $\text{B}_6\text{H}_6$
  - $\text{B}_5\text{NH}_6$
  - $\text{B}_4\text{N}_2\text{H}_6$
  - $\text{B}_3\text{N}_3\text{H}_6$

29. The product is obtained by the reaction of an aldehyde and hydroxylamine is :  
(a) hydrazone (b) aldoxime  
(c) primary amine (d) alcohol
30. Which one of the following is not a chromophore ?  
(a)  $-\text{NO}$  (b)  $-\text{N}=\text{N}-$   
(c)  $-\text{NO}_2$  (d)  $-\text{NH}_2$
31. The isomer of ethyl alcohol is :  
(a) diethyl ether (b) dimethyl ether  
(c) acetaldehyde (d) acetone
32. Buffer solutions can be obtained by mixing aqueous solution of :  
(a)  $\text{NaOH}$  and  $\text{HCl}$   
(b)  $\text{CH}_3\text{COOH}$  and  $\text{NaOH}$   
(c)  $\text{CH}_3\text{COONa}$  and  $\text{CH}_3\text{COOH}$   
(d)  $\text{CH}_3\text{COONa}$  and  $\text{HCl}$
33. An element having atomic number 56 belongs to :  
(a) lanthanides  
(b) actinides  
(c) alkaline earth metals  
(d) none of the above
34. Dry ice is :  
(a) dry  $\text{CO}_2$  gas (b) solid  $\text{SO}_2$   
(c) solid  $\text{NH}_3$  (d) solid  $\text{CO}_2$
35. The alicyclic compound is :  
(a) cyclohexane (b) cyclohexene  
(c) pyrrole (d) hexane
36. Adsorbed hydrogen by palladium is known as :  
(a) nascent (b) atomic  
(c) heavy (d) occluded
- In benzylic acid rearrangement :
37. (a) benzoin is converted into benzylic acid  
(b) benzaldehyde is converted into benzoin  
(c) benzyl is converted into benzylic acid  
(d) benzylic acid is converted into benzyl
38. On heating  $\text{O}_3$ , its volume :  
(a) remains unchanged  
(b) becomes doubled  
(c) becomes half  
(d) becomes  $\frac{3}{2}$  times
39. Chloramphenicol is an :  
(a) analgesic (b) antipyretic  
(c) antiseptic (d) antibiotic

40. Which of the following compound can be easily sulphonated ?  
(a) Chlorobenzene (b) Nitrobenzene  
(c) Toluene (d) Benzene
41.  $l = 3$  then the values of magnetic quantum numbers are :  
(a)  $\pm 1, \pm 2, \pm 3$  (b)  $0, \pm 1, \pm 2, \pm 3$   
(c)  $-1, -2, -3$  (d)  $0, +1, +2, +3$
- The electrical conduction is shown by :  
42. (a) potassium (b) sodium  
(c) graphite (d) diamond
- Carborundum is :  
43. (a)  $\text{CaC}_2\text{O}_4$  (b)  $\text{Al}_2(\text{CO}_3)_3$   
(c)  $\text{CaH}_2$  (d)  $\text{SiC}$
44. The base not present in DNA is :  
(a) uracil (b) guanine  
(c) adenine (d) cytosine
45. The monomers of terylene are :  
(a) phenol and formaldehyde  
(b) ethylene glycol and phthalic acid  
(c) adipic acid and hexamethylene diamine  
(d) ethylene glycol and terephthalic acid
46. The most polar bond is :  
(a)  $\text{C}-\text{F}$  (b)  $\text{C}-\text{O}$   
(c)  $\text{C}-\text{Br}$  (d)  $\text{C}-\text{S}$
47. Brownian movement is found in :  
(a) unsaturated solution  
(b) saturated solution  
(c) colloidal solution  
(d) suspension solution
48. The rate of a chemical reaction depends on  
(a) pressure (b) time  
(c) concentration (d) all of these
49. The positive charge of an atom is :  
(a) distributed around the nucleus  
(b) concentrated at the nucleus  
(c) spread all over the atom  
(d) none of the above
50. The increasing order of acidity of  $\text{H}_2\text{O}_2$ ,  $\text{H}_2\text{O}$  and  $\text{CO}_2$  is :  
(a)  $\text{H}_2\text{O}_2 > \text{H}_2\text{O} > \text{CO}_2$   
(b)  $\text{H}_2\text{O}_2 > \text{CO}_2 > \text{H}_2\text{O}$   
(c)  $\text{H}_2\text{O} > \text{H}_2\text{O}_2 > \text{CO}_2$   
(d)  $\text{H}_2\text{O} < \text{H}_2\text{O}_2 < \text{CO}_2$

### ANSWEWR KEYS

1.b	2.b	3.c	4.d	5.b	6.d	7.c	8.c	9.c	10.d
11.b	12.c	13.b	14.c	15.a	16.a	17.a	18.a	19.c	20.d
21.a	22.a	23.a	24.b	25.c	26.a	27.a	28.d	29.b	30.d
31.b	32.c	33.c	34.d	35.a,b	36.d	37.c	38.d	39.d	40.c
41.b	42.c	43.d	44.a	45.d	46.a	47.c	48.d	49.b	50.d