

NEET CHEMISTRY 2018-19 - Chennai

Periodic Test : 05

Number of questions: 150

Name: _____

ID No: _____

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Time: 3HRS

Negative Marks : 4 marks for correct attempt & 1 mark deducted for every wrong attempt.

1. Suppose the elements X and Y combine to form two compounds XY_2 and X_3Y_2 , When 0,1 mole of XY_2 weighs 1 g and 0,05 mole of X_3Y_2 weighs 9 g, the atomic weights of X and Y are
- (a) 40,30
(b) 60,40
(c) 20,30
(d) 30,20
2. If Avogadro number N_A is changed from $6.022 \times 10^{23} \text{ mol}^{-1}$ to $6.022 \times 10^{20} \text{ mol}^{-1}$, this would change
- (a) The mass of one mole of carbon
(b) The ratio of chemical species to each other in a balanced equation
(c) The ratio of elements to each other in a Compound
(d) The definition of mass in units of grams.
3. A mixture of gases contains H_2 and O_2 gases in the ratio of 1:4 (w/w). What is the molar ratio of the two gases in the mixture?
- (a) 16:1
(b) 2: 1
4. When 22.4 litres of $H_{2(g)}$ is mixed with 11.2 litres of Cl_{2g} each at S.T.P, the moles of $HCL_{(g)}$ Formed is equal to
- (a) 1 mol of $HCL_{(g)}$
(b) 2 mol of $HCL_{(g)}$
(c) 0.5 mol of $HCL_{(g)}$
(d) 1.5 mol of $HCL_{(g)}$
5. 6.02×10^{20} molecules of urea are present in 100 ml of its solution, the concentration of Solution is
- (a) 0.001 M
(b) 0.1 M
(C) 0.02 M
(d) 0.01 M
6. Which has the maximum number of molecules among the following?
- (a) 44 g CO_2
(b) 48 g O_3
(c) 8 g H_2

(d) 64 g SO₂

(d) H₂O

7. 25.3g of sodium carbonate, Na₂CO₃ is dissolved in enough water to make 250 mL of solution. If sodium carbonate dissociates completely, molar concentration of sodium ion, Na⁺ and carbonate ions, CO₃²⁻, are respectively (Molar mass of Na₂CO₃ = 106 g mol⁻¹)

- (a) 0.955 M and 1.910 M
- (b) 1.910 M and 0.955 M
- (c) 1.90 M and 1.910 M
- (d) 0.477 M and 0.477 M

8. What volume of oxygen gas (O₂) measured at 0°C and 1 atm, is needed to burn completely 1 L of propane gas (C₃H₈) measured under the same conditions?

- (a) 5L
- (b) 10L
- (c) 7L
- (d) 6L

9. An organic compound contains carbon, hydrogen and oxygen. Its elemental analysis gave C, 38.71% and H, 9.67%. The empirical formula of the compound would be

- (a) CHO
- (b) CH₄O
- (c) CH₃O

10. The maximum number of molecules is present in

- (a) 15L of H₂ gas at STP
- (b) 5L of N₂ gas at STP
- (c) 0.5 g of H₂ gas
- (d) 10 g of O₂ gas.

11. If n=6 the correct sequence for filling of Electrons will be

- (a) ns → (n-2)f → (n-1)d → np
- (b) ns → (n-1)d → (n-2)f → np
- (c) ns → (n-2)f → np → (n-1)d
- (d) ns → np → (n-1)d → (n-2)f

12. A 0.66 kg ball is moving with a speed of 100m/s. The associated wavelength will be

- (h = 6.6 × 10⁻³⁴ J s)
- (a) 6.6 × 10⁻³² m
 - (b) 6.6 × 10⁻³⁴ m
 - (c) 1.0 × 10⁻³⁵ m
 - (d) 1.0 × 10⁻³² m

13. Which of the following is not permissible arrangement of electrons in an atom?

- (a) N=5, l=3, m=0, S= +1/2
- (b) N=3, l=2, m=-3, S= -1/2
- (c) N=3, l=2, m=-2, S= -1/2

- (d) $N=4, l=0, m=0, S=-1/2$
14. The measurement of the electron position is associated with an uncertainty in momentum, which is equal to $1 \times 10^{-18} \text{ g cm s}^{-1}$. The uncertainty in electron velocity is (mass of an electron is $9 \times 10^{-28} \text{ g}$)
- $1 \times 10^5 \text{ cm s}^{-1}$
 - $1 \times 10^{11} \text{ cm s}^{-1}$
 - $1 \times 10^9 \text{ s}^{-1}$
 - $1 \times 10^6 \text{ cm s}^{-1}$
15. The orientation of an atomic orbital is governed
- Principal quantum number
 - azimuthal quantum number
 - spin quantum number
 - Magnetic quantum number
16. The energy of second Bohr orbit of the hydrogen atom is -328 kJ mol^{-1} ; hence the energy of fourth Bohr orbit would be
- 41 kJ mol^{-1}
 - -82 kJ mol^{-1}
 - -164 kJ mol^{-1}
 - $-1312 \text{ kJ mol}^{-1}$
17. The value of Planck's constant is $6.63 \times 10^{-34} \text{ Js}$. The velocity of light is $3.0 \times 10^8 \text{ ms}^{-1}$. Which value is closest to the wavelength in nanometers of a quantum of light with frequency of $8 \times 10^{15} \text{ S}^{-1}$
- 2×10^{-25}
 - 5×10^{-18}
 - 4×10^1
 - 3×10^7
18. Main axis of a diatomic molecule is Z, molecular orbital P_x and P_y . Overlap to form which of the following orbitals.
- Π molecular orbital
 - σ molecular orbital
 - δ molecular orbital
 - No bond will form
19. For given energy, $E = 3.03 \times 10^{-19} \text{ Joules}$ corresponding wavelength is
($h = 6.626 \times 10^{-34} \text{ J sec}$, $c = 3 \times 10^8 \text{ m/sec}$)
- 65.6nm
 - 6.56nm
 - 3.4 nm
 - 656 nm
20. The uncertainty in momentum of an electron is $1 \times 10^{-5} \text{ kg m/s}$. The uncertainty in its position will be ($h = 6.62 \times 10^{-34} \text{ kg m}^2 \text{ s}^{-1}$)
- $5.27 \times 10^{-30} \text{ m}$
 - $1.05 \times 10^{-26} \text{ m}$
 - $1.05 \times 10^{-28} \text{ m}$
 - $5.25 \times 10^{-28} \text{ m}$

21. Which one of the following arrangements represents the correct order of least negative to most negative electron gain enthalpy for C, Ca, Al, F and O?

- (a) $\text{Al} < \text{Ca} < \text{O} < \text{C} < \text{F}$
- (b) $\text{Al} < \text{O} < \text{C} < \text{Ca} < \text{F}$
- (c) $\text{C} < \text{F} < \text{O} < \text{Al} < \text{Ca}$
- (d) $\text{Ca} < \text{Al} < \text{C} < \text{O} < \text{F}$

22. What is the value of electron gain enthalpy of Na^+ if IE1 of Na = 5.1 eV?

- (a) -5.1 eV
- (b) -10.2 eV
- (c) +2.55 eV
- (d) +10.2 eV

23. Which of the following represents the correct order of increasing electron gain enthalpy with Negative sign for the elements O, S, F and Cl?

- (a) $\text{Cl} < \text{F} < \text{O} < \text{S}$
- (b) $\text{O} < \text{S} < \text{F} < \text{Cl}$
- (c) $\text{F} < \text{S} < \text{O} < \text{Cl}$
- (d) $\text{S} < \text{O} < \text{Cl} < \text{F}$

24. Among the following which one has the highest cation to anion size ratio?

- (a) CsI
- (b) CsF

- (c) LiF
- (d) NaF

25. Which one of the following arrangements does not give the correct picture of the trends indicated against it?

- (a) $\text{F}_2 > \text{Cl}_2 > \text{Br}_2 > \text{I}_2$: Bond dissociation energy
- (b) $\text{F}_2 > \text{Cl}_2 > \text{Br}_2 > \text{I}_2$: Electro negativity
- (c) $\text{F}_2 > \text{Cl}_2 > \text{Br}_2 > \text{I}_2$: Oxidizing power
- (d) $\text{F}_2 > \text{Cl}_2 > \text{Br}_2 > \text{I}_2$: Electron gain enthalpy

26. Identify the wrong statement in the following.

- (a) Amongst isoelectronic species, smaller the positive charge on the cation, smaller is the ionic radius.
- (b) Amongst isoelectronic species, greater the negative charge on the anion, larger is the ionic radius.
- (c) Atomic radius of the elements increases as one moves down the first group of the periodic table.
- (d) Atomic radius of the elements decreases as one moves across from left to right in the 2nd period of the periodic

27. The correct order of the decreasing ionic radii among the following isoelectronic species is

- (a) $\text{Ca}^{2+} > \text{K}^+ > \text{S}^{2-} > \text{Cl}^-$
- (b) $\text{Cl}^- > \text{S}^{2-} > \text{Ca}^{2+} > \text{K}^+$
- (c) $\text{S}^{2-} > \text{Cl}^- > \text{K}^+ > \text{Ca}^{2+}$
- (d) $\text{K}^+ > \text{Ca}^{2+} > \text{Cl}^- > \text{S}^{2-}$

28. Among the elements Ca, Mg, P and Cl, the order of increasing atomic radii is

- (a) $\text{Mg} < \text{Ca} < \text{Cl} < \text{P}$
- (b) $\text{Cl} < \text{P} < \text{Mg} < \text{Ca}$
- (c) $\text{P} < \text{Cl} < \text{Ca} < \text{Mg}$
- (d) $\text{Ca} < \text{Mg} < \text{P} < \text{Cl}$

29. Amongst the elements with following electronic configurations, which one of them may have the highest ionisation energy?

- (a) Ne $[3s^2 3p^2]$
- (b) Ar $[3d^{10} 4s^2 4p^3]$
- (c) (c)Ne $[3s^2 3p^1]$
- (d) Ne $[3s^2 3p^3]$

30. Identify the correct order of the size of the following:

- (a) $\text{Ca}^{2+} < \text{K}^+ < \text{Ar} < \text{Cl}^- < \text{S}^{2-}$
- (b) $\text{Ar} < \text{Ca}^{2+} < \text{K}^+ < \text{Cl}^- < \text{S}^{2-}$
- (c) $\text{Ca}^{2+} < \text{Ar} < \text{K}^+ < \text{Cl}^- < \text{S}^{2-}$
- (d) $\text{Ca}^{2+} < \text{K}^+ < \text{Ar} < \text{S}^{2-} < \text{Cl}^-$

31. Chloroamplienicol is an

- (a) antifertility drug

- (b) antihistaminic
- (c) antiseptic and disinfectant
- (d) antibiotic-broad spectrum

32. Which one of the following is employed as tranquilizer drug?

- (a) Promethazine
- (b) Valium
- (c) Naproxen
- (d) Mifepriston

33. Chloropicrin is obtained by the reaction of

- (a) steam on carbon tetrachloride
- (b) nitric acid on chlorobenzene
- (c) chlorine on picric acid
- (d) nitric acid on chloroform.

34. Garmmexane is

- (a) bromobenzene
- (b) benzyl chloride
- (c) chlorobenzene
- (d) benzene hexachloride

35. Aspirin is an acetylation product of

- (a) m-Hydroxybenzoic acid
- (b) o-Dihydroxybenzene
- (c) o-Hydroxybenzoic acid
- (d) p-Dihydroxybenzene

36. Which one of the following is employed as Antihistamine?

- (a) Chloramphenicol
- (b) Diphenylhydramine
- (c) Norothindrone
- (d) Omeprazole

37. Which. One of the following is employed as a tranquilizer?

- (a) Naproxen
- (b) Tetracycline
- (c) Chlorpheninamine
- (d) Equanil

38. Which of the following forms cationic micelles above certain concentration?

- (a) Sodium dodecyl sulphate
- (b) Sodium acetate
- (c) Urea
- (d) Cetyltrimethylammonium bromide.

39. The decomposition of organic compounds in the presence of oxygen and without the

development of odoriferous substances, is called

- (a) nitrification
- (b) N₂-fixation
- (c) decay
- (d) denitrification

40. Which of the following can possibly be used as analgesic without causing addiction and

Moon modification?

- (a) Diazepam
- (b) Tetrahydrocannabinol
- (c) Morphine
- (d) N-Acetyl-para-aminophenol

41. In the following radioactive decay,

${}^{232}_{92}\text{X} \rightarrow {}^{220}_{89}\text{Y}$ how many α and β particles are ejected from X to form Y?

- (a) 3 α and 5 β
- (b) 5 α and 3 β
- (c) 3 α and 3 β
- (d) 5 α and 5 β

42. Number of neutrons in a parent nucleus X, which gives ${}^{14}_7\text{N}$ nucleus after two successive β emissions, would be

- (a) 7
- (b) 6
- (c) 9
- (d) 8

43. ${}^{235}_{92}\text{U} + \text{n} \rightarrow \text{fission product} + \text{neutron} + 3.20 \times 10^{-11}\text{J}$. The energy undergoes fission is

- (a) $8.21 \times 10^7 \text{ J}$
- (b) $6.55 \times 10^6 \text{ J}$
- (c) $12.75 \times 10^8 \text{ J}$
- (d) $18.60 \times 10^9 \text{ J}$

44. Half-life for radioactive ^{14}C is 5760 years. In how many years 200 mg of ^{14}C will be reduced to 25 mg?

- (a) 17280 years
- (b) 23040 years
- (c) 5760 years
- (d) 11520 years

45. If an isotope of hydrogen has two neutrons in its atom, its atomic number and atomic mass Number will respectively be

- (a) 2 and 1
- (b) 3 and 1
- (c) 1 and 1
- (d) 1 and 3

46. The half-life of ^{14}C , if its $t_{1/2}$ is 2.31×10^4 , is

- (a) 3.5×10^4 years
- (b) 3×10^3 years
- (c) 2×10^2 years
- (d) 4×10^3 years

47. Carbon-14 dating method is based on the fact that

- (a) ratio of carbon-14 and carbon-12 is constant
- (b) carbon-14 is the same in all objects
- (c) carbon-14 is highly insoluble
- (d) all of these

48. After the emission of one α -particle followed by one β -particle from the atom of $^{238}_{92}\text{X}$, the number of neutrons in the atom will be

- (a) 144
- (b) 143
- (c) 148
- (d) 146

49. In a radioactive decay, an emitted electron comes from

- (a) outermost orbit of the atom
- (b) orbit having principal quantum number one
- (c) nucleus of the atom
- (d) inner orbital of the atom.

50. The age of most ancient geological formations is estimated by

- (a) potassium - argon method
- (b) carbon -14 dating method
- (c) radium- silicon method
- (d) uranium - lead method