

## NEET Sample Paper 2 PDF for Class 12 (Chemistry)

1. The weight of iron which will be converted into its oxide ( $\text{Fe}_3\text{O}_4$ ) by the action of 18g of steam on it will be;

- (a) 168 g
- (b) 42 g (c) 8 g
- (d) 72 g

2. The correct order of acidic strength is;

- (a)  $\text{Cl}_2\text{O}_7 < \text{SO}_2 < \text{P}_4\text{O}_{10}$
- (b)  $\text{CO}_2 < \text{N}_2\text{O}_5 < \text{SO}_3$
- (c)  $\text{Na}_2\text{O} > \text{MgO} > \text{Al}_2\text{O}_3$  (d)  $\text{K}_2\text{O} > \text{CaO} > \text{MgO}$

3. The geometry of electron pairs around I in  $\text{IF}_5$  is;

- (a) octahedral
- (b) trigonal bipyramidal
- (c) square pyramidal
- (d) pentagonal planar

4. The number of moles of  $\text{CaCl}_2$  needed to react with excess of  $\text{AgNO}_3$  to produce 4.31 gm of  $\text{AgCl}$  (Molecular mass of  $\text{AgCl} = 143.5$  amu);

- (a) 0.03
- (b) 0.015
- (c) 0.045
- (d) 0.06

5. According to the molecular orbital theory, which of the following statements about magnetic character and bond order is correct regarding  $\text{O}_2^+$  ?

- (a) Paramagnetic and bond order  $< \text{O}_2$
- (b) Paramagnetic and bond order  $> \text{O}_2$
- (c) Diamagnetic and bond order  $< \text{O}_2$
- (d) Diamagnetic and bond order  $> \text{O}_2$

6. In Bohr series of lines of hydrogen spectrum, which of the following inter-orbit jumps of the electron represents highest energy emission?

- (a)  $5 \rightarrow 1$

- (b)  $4 \rightarrow 1$
- (c)  $3 \rightarrow 1$
- (d)  $2 \rightarrow 1$

7. Which of the following is correct about the dipole moment ( $\mu$ ) of  $\text{NH}_3$  and  $\text{NF}_3$ ?

- (a)  $\mu(\text{NH}_3) < \mu(\text{NF}_3)$
- (b)  $\mu(\text{NF}_3) < \mu(\text{NH}_3)$
- (c)  $\mu(\text{NF}_3) = \mu(\text{NH}_3)$
- (d)  $\mu(\text{NF}_3) = 2\mu(\text{NH}_3)$

8. A reversible reaction having two reactants in equilibrium if the concentration of reactants are doubled, the equilibrium constant will; (a) Become 4 times.

- (b) Become 1/4th time.
- (c) Become 1/16th times. (d) Remains the same.

9. In which molecule hybrid orbital have only 20% d- character?

- (a)  $\text{CCl}_4$
- (b)  $\text{SF}_6$
- (c)  $\text{SF}_4$
- (d)  $\text{Cl}_2\text{O}$

10. Bond energies of (H - H), (O = O) and (O - H) are 105, 120 and 220 kcal/mol, respectively then  $\Delta H$  of the reaction,  $2\text{H}_2(\text{g}) + \text{O}_2(\text{g}) \rightarrow 2\text{H}_2\text{O}(\text{g})$ ;

- (a) -115 kcal
- (b) -130 kcal
- (c) -118 kcal
- (d) -550 kcal

11.  $\text{S}(\text{s}) + \frac{3}{2} \text{O}_2(\text{g}) \rightarrow \text{SO}_3(\text{g})$  ; x k cal  
 $\text{SO}_2(\text{g}) + \frac{1}{2} \text{O}_2(\text{g}) \rightarrow \text{SO}_3(\text{g})$  ; y k cal  
What is the heat of formation of  $\text{SO}_2$  (k cal)?

- (1)  $x - y$
- (2)  $2x + y$
- (3)  $x + y$
- (4)  $2x/y$

12. One mole of an ideal gas at 300 K is expanded isothermally from an initial volume of

1 litre to 10 litres. The  $\Delta E$  for this process is;

- (a) 16.7 cal
- (b) 1381.1 cal
- (c) 9 lit atm
- (d) zero

13. Which salt undergoes hydrolysis?

- (1)  $\text{CH}_3\text{COONa}$
- (2)  $\text{KNO}_3$
- (3)  $\text{NaCl}$
- (4)  $\text{K}_2\text{SO}_4$

14. The first ionization potentials (eV) of N and O respectively are

- (a) 8.29, 8.29
- (b) 11.32, 11.32
- (c) 8.29, 11.32
- (d) 11.32, 8.21

15. When Al is added to sodium hydroxide solution:

- (a) no reaction takes place.
- (b) oxygen is evolved.
- (c) water is produced.
- (d) hydrogen is evolved.

16. Identify the incorrect statement about the structure of diborane.

- (a) The four terminal hydrogen atoms and the two boron atoms lie in one plane.
- (b) There are two bridging hydrogen atoms.
- (c) All six B – H bond are regular two centre two electron bonds.
- (d) The hybridisations of both the boron atoms are same and  $sp^3$ .

17. The element with highest electronegativity will belong to;

- (a) Period 2, group 17
- (b) Period 3, group 17
- (c) Period 2, group 18

(d) Period 2, group 1

18. The gas used in the hydrogenation of oils presence of nickel as a catalyst is;

- (a) methane
- (b) ethane
- (c) ozone
- (d) hydrogen

19. Ostwald's dilution law gives satisfactory results with the solution of which electrolyte?

- (a) HCl
- (b) HNO<sub>3</sub>
- (c) CH<sub>3</sub>COOH
- (d) NaOH

20. On adding 0.04 g solid NaOH to a 100 mL, M/200 Ba(OH)<sub>2</sub> solution, determine change in pH;

- (1) 0
- (2) +0.3
- (3) -0.3
- (4) +0.7

21. Zeolites are extensively used in; (a) softening of water and catalyst.

- (b) preparing heavy water.
- (c) increasing the hardness of water.
- (d) Mond's process.

22. Statement I: Boiling point of alkanes increase with decrease in branching.

Statement II: The decreasing order of boiling points of n- Pentane, iso-Pentane, neo-Pentane is n-Pentane > iso-Pentane > neo-Pentane.

- (a) Statement I and Statement II both are correct.
- (b) Statement I is correct, but Statement II is incorrect.
- (c) Statement I is incorrect, but Statement II is correct.
- (d) Statement I and Statement II both are incorrect.

23. Statement I: According to molecular orbital theory  $C_2$  molecules exist with bond order 2. Statement II:  $C_2$  molecule has 8 electrons in bonding molecular orbitals and 2 pair of electrons in anti-bonding molecular orbitals.

- (a) Statement I and Statement II both are correct.
- (b) Statement I is correct, but Statement II is incorrect.
- (c) Statement I is incorrect, but Statement II is correct.
- (d) Statement I and Statement II both are incorrect.

24. Compounds with  $C_4H_{11}N$  as molecular formula can exhibit;

- (a) position isomerism
- (b) metamerism
- (c) functional isomerism
- (d) all of these

25. Equal volumes of two solutions, one having  $pH = 6$  and other having  $pH = 4$  are mixed. The  $pH$  of the resulting solution would be:

- (a) 5.7
- (b) 4.3
- (c) 5.0
- (d) 5.5

26. The most suitable method of separation of 1 : 1 mixture of ortho and para-nitrophenols is;

- (a) chromatography
- (b) crystallisation
- (c) steam distillation
- (d) sublimation

27. Assertion: In Neon, the atoms are held together by covalent bond. Reason: Noble gases like Neon only have Vander waals force between the atoms.

- (a) Both Assertion (A) and Reason (R) are the true, and Reason (R) is a correct explanation of Assertion (A).
- (b) Both Assertion (A) and Reason (R) are the true, but Reason (R) is not a correct explanation of Assertion (A).
- (c) Assertion (A) is true, and Reason (R) is false.
- (d) Assertion (A) is false, and Reason (R) is true.