



COMMON SECOND REVISION TEST – 2023

Standard XI
CHEMISTRYReg No. :

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Time: 3.00 hrs.

Part - I

Marks: 70

15 x 1 = 15

I. Choose the correct answer:

1. The number of water molecules in a drop of water weighing 0.018 g is
a) 6.022×10^{26} b) 6.022×10^{23} c) 6.022×10^{20} d) 9.9×10^{22}
2. The total number of orbitals associated with the principal quantum number $n = 3$ is
a) 9 b) 8 c) 5 d) 7
3. In a given shell, the order of screening effect is
a) $s > p > d > f$ b) $s > p > f > d$ c) $f > d > p > s$ d) $f > p > s > d$
4. The hybridisation of oxygen atom in H_2O and H_2O_2 are, respectively
a) sp and sp^3 b) sp and sp c) sp and sp^2 d) sp^3 and sp^3
5. 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
6. Maximum deviation from ideal gases expected from
a) $CH_{4(g)}$ b) $NH_{3(g)}$ c) $H_{2(g)}$ d) $N_{2(g)}$
7. Which of the following is not a Thermodynamic function?
a) internal energy b) enthalpy c) entropy d) frictional energy
8. In which of the following equilibrium, K_p and K_c are not equal?
a) $2NO_{(g)} \rightleftharpoons N_{2(g)} + O_{2(g)}$ b) $SO_{2(g)} + NO_{2(g)} \rightleftharpoons SO_{3(g)} + NO_{(g)}$
c) $H_{2(g)} + I_{2(g)} \rightleftharpoons 2HI_{(g)}$ d) $PCl_{5(g)} \rightleftharpoons PCl_{3(g)} + Cl_{2(g)}$
9. Osmotic pressure (π) of a solution is given by the relation,
a) $\pi = nRT$ b) $\pi V = nRT$ c) $\pi RT = n$ d) none of these
10. Which one of the following is diamagnetic?
a) O_2 b) O_2^{2-} c) O_2^- d) none of these
11. Which one of the following shows functional isomerism?
a) ethylene b) propane c) ethanol d) CH_2Cl_2
12. Assertion : Tertiary carbocations are generally formed more easily than primary carbocations ions.
Reason : Hyper conjugation as well as inductive effect due to additional alkyl group stabilize tertiary carbonium ions.
a) both assertion and reason are true, and reason is the correct explanation of assertion.
b) both assertion and reason are true, but the reason is not the correct explanation of assertion.
c) assertion is true but reason is false d) both assertion and reason are false
13. The general formula for cyclo alkanes
a) C_nH_n b) C_nH_{2n} c) C_nH_{2n-2} d) C_nH_{2n+2}
13. C-X bond is strongest in
a) chloro methane b) iodo methane
c) bromo methane d) fluoro methane
15. The pH of normal rainwater is a) 6.5 b) 7.5 c) 5.6 d) 4.6

Part - II

II. Answer any 6 questions. (Q.No.24 is compulsory)

6 x 2 = 12

16. State Heisenberg's uncertainty principle.

For answers search this (@vskteaches) in YouTube.

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XI Chemistry

17. How many orbitals are possible for $n = 4$?
18. What is hydrogen bonding?
19. State Boyle's law.
20. Distinguish between diffusion and effusion.
21. Define Hess's law of constant heat summation.
22. Why chemical equilibrium is referred as dynamic equilibrium?
23. What is bond order?

**Part - III****III. Answer any 6 questions. (Q.No.33 is compulsory)****6 x 3 = 18**

25. Calculate the oxidation state of the underlined elements in the following compounds:
 - a) $\underline{S}O_2$
 - b) $\underline{Cr}_2O_7^{2-}$
 - c) $\underline{C}O_2$
26. Define modern periodic law.
27. Mention the uses of plaster of paris.
28. State and explain Henry's law.
29. Write a note on homologous series.
30. Explain Markovnikoff's rule.
31. What is polymerisation?
32. What is Green Chemistry?
33. Explain SN^1 mechanism.

Part - IV.**IV. Answer all the questions.****5 x 5 = 25**

34. a) A compound on analysis gave the following percentage composition carbon 76.6%, hydrogen 6.38% and rest oxygen Its vapour density is 47. Calculate empirical and molecular formula of compound. **(OR)**
 - b) i) Give the electronic configuration of Mn^{2+} and Cr^{3+}
 - ii) Calculate the effective nuclear charge on a 3p electron in aluminium.
35. a) i) What are isotopes? Write the names of isotopes of Hydrogen.
 - ii) Write the uses of calcium. **(OR)**
- b) Derive the values of critical constants interms of Vander Waals constants.
36. a) i) What is lattice energy?
 - ii) Explain the cases $\Delta n_{(g)} = 0$, $\Delta n_{(g)} = +ve$ **(OR)**
- b) i) Define the term isotonic solution.
 - ii) Discuss the formation of H_2 molecule using MO theory.
37. a) 0.26 g of an organic compound gave 0.039 g of water and 0.245 g of carbon dioxide on combustion. Calculate the percentage of carbon and hydrogen. **(OR)**
 - b) i) What are electrophiles nucleophiles?
 - ii) What is cis and trans isomer?
38. a) i) Define aromaticity.
 - ii) Write Williamson ether synthesis. **(OR)**
- b) Give the IUPAC name of the following compounds :
 - 1) $\begin{array}{c} CH_3 - CH - CH_2 - CH_3 \\ | \\ CH_3 \end{array}$
 - 2) $CH_3 - CH_2 - COOH$
 - 3) $CH_3 - CH_2 - OH$
 - 4) $CH_2 = CH_2$
 - 5) $CH_3 - C = C - CH_3$

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