

FIRST MID TERM TEST- 2023

CLASS : XI

TIME : 1.30 HRS

SUBJECT : CHEMISTRY

UNIT-1,2

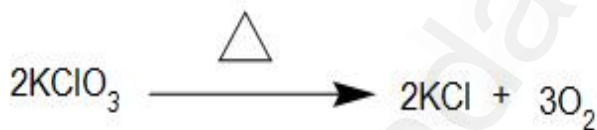
MARKS : 50

PART-I

Choose the correct answer

10 x 1 = 10

- Which of the following compound has same percentage of carbon as that of ethylene (C₂H₄) ?
 A) benzene b) ethane c) propene d) ethyne
- The oxidation number of carbon in CH₂F₂ is
 a) +4 b) -4 c) 0 d) +2
- Total number of electrons present in 1.7 g of ammonia is
 a) 6.022×10^{23} b) $\frac{6.022 \times 10^{22}}{1.7}$ c) $\frac{6.022 \times 10^{24}}{1.7}$ d) $\frac{6.022 \times 10^{23}}{1.7}$
- which one of the following represents 180g of water
 a) 5 mole of water b) 90 moles of water
 c) $\frac{6.022 \times 10^{23}}{180}$ molecules of water d) 6.022×10^{24} molecules of water
- Tartaric acid of empirical formula is C₂H₃O₃ .it's molar mass is 150 what is molecular formula ?
 a) C₂H₃O₃ b) C₄H₆O₆ c) C₃H₅O₅ d) C₂H₂O₂



- The above reaction is
 a) combination reaction b) decomposition reaction
 c) displacement reaction d) auto redox reaction
- Splitting of spectral lines in an electric field is called
 a) zeeman effect b) shielding effect
 c) compton effect d) stark effect
- Two electrons occupying the same orbital are distinguished by
 a) azimuthal quantum number b) spin quantum number
 c) magnetic quantum number d) orbital quantum number
- The maximum number of electrons in a sub shell is given by the expression
 a) $2n^2$ b) $2l + 1$ c) $4l + 2$ d) none of these
- The total number of orbitals associated with the principal quantum number $n = 3$ is
 a) 9 b) 8 c) 5 d) 7

PART-II**Answer any five questions. Q.no : 17 is compulsory****5 x 2 = 10**

11. Define orbital ? What are the n and l values $3p_x$ and $4dx^2-y^2$ electron ?
12. Write the stable electronic configuration of Cu & Cr
13. How many orbitals are possible for $n=4$?
14. What is limiting reagents ?
15. Define gram equivalent mass
16. What is the empirical formula of the following ?
A) fructose ($C_6H_{12}O_6$) ii) caffeine ($C_8H_{10}N_4O_2$)
17. Acetic acid of empirical formula is CH_2O .it's molar mass is 60 what is molecular formula ?

PART-III**Answer any five questions. Q.no : 24 is compulsory****5 x 3 = 15**

18. State heisenberg's uncertainty principle .
19. State pauli exclusion principle .
20. Derive de-broglie equation.
21. Distinguish between oxidation and reduction
22. Any three rule assigning the rule the oxidation number.
23. Find out the oxidation number of underline elements for the following compounds
i) $\underline{S}O_3^{2-}$ ii) $\underline{S}_2O_4^{2-}$ iii) $\underline{S}_2O_6^{2-}$
24. How many moles of ethane is required to produce 44g of $CO_2(g)$ after combustion ?

PART-IV**Answer all the questions.****3 x 5 = 15**

- 25.a) i) describe the aufbau's principle(3)
ii) write a short note on hund's rule?(2)
(OR)
b) i) find out the number of unpaired electrons in Fe^{3+} and Mn^{2+} (2)
ii) explain the azimuthal quantum number(3)
26. a) explain the postulates of bohr's atomic model.(5)
(OR)
b) i) what is the difference between molecular mass and molar mass?(3)
ii) calculate amount of moles of hydrogen required to prepare 10 mole ammonia?(2)
27. A) i) an organic compound present in vinegar has 40% carbon , 6.6 % of hydrogen 53.4 % of oxygen. Find the empirical formula of compound.(3)
ii) calculate the molar mass of the following compounds.(2)
i) acetone [CH_3COCH_3] ii) sulphuric acid [H_2SO_4]
(OR)
b) calculate the empirical and molecular formula of a compound containing 76.6% carbon, 6.38 % hydrogen and rest oxygen its vapour density is 47.(5)

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