PANCHSHEEL PUBLIC SCHOOL

10+2 Senior Secondary School (Affiliated & Recognized by CBSE)
Jaitpur, Badarpur, New Delhi-44

MID TERM REVISION TEST PAPER

SESSION 2023-24

Time: 2.5 Hours **Subject: Chemistry** **Class: XI** **Date:** **M. Marks:50**

*** General Instructions**
***SECTION A consists of 15 multiple-choice questions carrying 1 mark**
***SECTION B consists of 5 very short answer questions carrying 2 marks each.**
***SECTION C consists of 5 short answer questions carrying 3 marks**
***SECTION D consists of 1 long answer questions carrying 5 marks *All questions are compulsory.**
***Use of log tables and calculators is not allowed**

SECTION -A

Q1. What is the unit of Molarity?
(a)$MolL^{-1}S^{-1}$
(b)no unit
(c)$molL^{-1}$
(d)s^{-1}

Q2. The molecular mass of sulphuric acid is
(a)98
(b)12
(c)44
(d)18

Q3.Atoms with same mass number but different atomic numbers are calledcalled
(a)isobars
(b)isochores
(c)None of these
(d) isotopes

Q4. The ionization enthalpy of hydrogen atom is 1.312×10^6 J mol^{-1}. The energy required to excite the electron in the atom from n = 1 to n = 2 is
(a) 8.51×10^5 J mol^{-1}
(b) 6.56×10^5 J mol^{-1}
(c) 7.56×10^5 J mol^{-1}
(d) 9.84 × 105 J mol^{-1}

Q5. For a given principal level n = 4, the energy of its subshells is in the order
(a)s < p < d < f
(b)s > p > d > f
(c)s < p < f < d
(d)f < p < d < s

Q6.Which one of the following molecules will form a linear polymeric structure due to hydrogen bonding?
(a) HCl
(b) HF
(c) H_2O

(d) NH_3

Q7. Which among the following has the largest dipole moment?
(a) NH_3
(b) H_2O
(c)HI
(d)SO_3

Q8. Noble gases have positive electron gain enthalpy. (True/False) Q9. The empirical formula of benzene...
(a). CH
(b)CH2
(c)Both (a) and (b)
(d)None of these

Q9. Which one of the following pairs of gases contains the same number of molecules
(a)16 g of O2 and 14 g of N2
(b)8 g of O2 and 22 g of CO2
(c)28 g of N2 and 22 g of CO2
(d) 32 g of O2 and 32 g of N2

Q10. Atoms of which of the following elements exist independently.
(a)Hydrogen
(b)Sodium
(c)Argon
(d)Magnesium

Q11. Which property of an element is always a whole number?
(a)Atomic weight
(b)Equivalent weight
(c)Atomic number
(d)Atomic volume

Q12. Azimuthal quantum number determines the
(a)size
(b)spin
(c)orientation
(d)angular momentum of orbitals

Q13. Magnetic quantum number specifies
(a)orbital size
(b)orbital shape
(c)orbital orientation
(d) nuclear stability

Q14. Atomic no of Sc is.....

Q15. The outermost electronic configuration of Cr is …….

SECTION - B

Q16. The density of 3 molal solution of NaOH is 1.110 g mL^{-1}. Calculate the molarity of the solution.

Q17. Why flourine electron gain enthalpy than chlorine?

Q18. Why ionic solid conduct electricity in molten or in aq phase?

Q19. Compare ionization enthalpy between alkali and alkaline earth metal.

Q20. Why NH_3 have higher boiling point than PH_3?

Q20. Why intermolecular hydrogen bonding more stronger than intramolecular hydrogen bonding

SECTION - C

Q21.(i).If 500 mL of a 5 M solution is diluted to 1500 mL, what will be the molarity of the solution obtained?

(ii). One mole of oxygen gas at STP is equal to____ .

Q22(i)Yellow light emitted from a sodium lamp has a wavelength (2) of 580 nm. Calculate the frequency (v) and wave number (v) of yellow light.

(ii). How many protons and neutrons are present in the following nuclei

168O and 14 7N

Q23. According to de Broglie, matter should exhibit dual behaviour, that is both particle and wave like properties. However, a cricket ball of mass 100 g does not move like a wave when it is thrown by a bowler at a speed of 100 km/h. Calculate the wavelength of the ball and explain why it does not show wave nature.

Q24.Discuss the shape of the following molecules using the VSEPR model:

BeCl2, BCl3 , SiCl4

Q25. The skeletal structure of CH3COOH as shown below is correct, but some of the bonds are shown incorrectly. Write the correct Lewis structure for acetic acid.

SECTION -D

Q26. Draw the molecular orbital diagram of N2-.