INDIAN SCHOOL AL WADI AL KABIR ASSESSMENT II 2022-2023 CHEMISTRY MAX MARKS: 70

CLASS XI

1.	(c) 0.2 mol/L	1
2.	b) 27.27 %	1
3.	(a) A	1
4.	(d) First ionization enthalpy of phosphorous is less than that of Sulphur.	1
5.	(c) $n = 2$, $l = 2$, $ml = 0$, $ms = +1/2$	1
6.	b) CO ₂	1
7.	d. changed chemical environment .	1
8.	(c) +5	1
9.	d) $BaCl_2 + H_2SO_4 \longrightarrow BaSO_4 + 2HCl$	1
10.	(c) $C_6 H_{12} O_6$	1
11.	a) 6.626×10^{-34} m	1
12.	a) largest species is S^{2-} and the smallest species is Ca^{2+}	1
13.	(c) All bonding molecular orbitals are labelled as sigma.	1
14.	(a) Increase in oxidation number	1
15.	a) Both assertion and reason are correct statements, and reason is the correct explanation of the assertion.	1
16.	D) Assertion is wrong, but reason is correct statement.	1
17.	a) Both assertion and reason are correct statements, and reason is the correct explanation of the assertion	1
18.	A) Both assertion and reason are correct statements, and reason is the correct explanation of the assertion	1
19.	i. 14 electrons	1

	" 1 00 NO	1
	11. b. $O2+$, $N2-$	1
	111. C. He2	2
	or	
	a. O_2^{2-}	
20.	i. Electrochemical cells produce electricity as a result of redox	1
	reaction	
	ii. Anode	1
	iii. Salt bridge is used in electrochemical cell to complete	
	internal circuit and prevents accumulation of charges.	2
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	OR	
	Metals are good reducing agents because they can lose electrons easily	
	Thetais are good reddening agents because they can lose elections easily	
21	$(H_4(a)+\Omega_2(a)\rightarrow C\Omega_2(a)+2H_2\Omega(a))$	1
41.	(11+(g)+02(g)+21120(g))	1
	22 g = 0.5 mol	1/2
		, 2
	0.5 mol of Methane	1/2
22.	Any one iso-electronic species for	1 mark each= 2
	(a) Na^+ and (b) Cl^-	marks
	OR	1 1 1 . 0
	(a) Heisenberg's Uncertainty Principle (b) Aufbau Principle	1 mark each= 2
		marks
• • •		
23.	Definition of electronegativity	I
	Difference between electronegativity and electron gain enthalpy	1
	OR OR	1
	(1) 15^{m} group	
	(ii) 3 electrons	
24.	(a) Trigonal planar	¹ ∕₂ x4=2
	(b) Trigonal bipyramidal	
	(c) Linear	
	(d) octabedral	
	(d) octaneural	
25.	(a) No	1/2
	(b) 3 sigma and 2 pi bonds	$1/2 x^2 - 1$
	(c) Linear	72 A2 - 1
		1/2
26.	$2H_2O_2(aq) \rightarrow 2H_2O(l) + O_2(g)$	$\frac{1}{2}$ x4 = 2
	Oxygen is oxidised and reduced simultaneously proving	
	and the set of the set	
	with oxidation numbers	
27	(a) with oxidation numbers	1 v 2-2

	$ \begin{array}{c} H \\ H $	
28.	 (a) Definition of an orbital (b) n=3, l=2, ml=-2,-1,0,+1,+2 (c) As it is symmetrical 	$ \begin{array}{c} 1 \\ \frac{1}{2} \times 3 = 1 \frac{1}{2} \\ \frac{1}{2} \end{array} $
29.	 (i) III As the ionisation enthalpies are larger (ii) I As first ionisation enthalpy less and second ionisation high OR (iii) First ionization enthalpy of Oxygen is slightly lesser than Nitrogen Reason (iv) O²⁻ is larger in size than Mg²⁺ Reason (v) Electron gain enthalpies of noble gases is positive reason 	1 ¹ / ₂ x2=3 1 1 1
30.	ground state configuration,3s2 3p4 two electrons promoted to d orbitals in excited state six orbitals get hybridised to form six sp3d2hybrid orbitals. Octahedral geometry	3
31.	$CrO_7^{2-}(aq) + 3SO_2(g) + 2H^+(aq) \rightarrow 3Cr^{3+}(aq) + 3SO_4^{2-} + H_2O(l)$	3
32.	i. Sp2 trigonal planar ii. Sp3 tetrahedral iii. Sp linear	$\frac{1}{2}$ x6 = 3 marks
33.	a. $A \sim X \wedge Y = \frac{1}{4} \cdot \prod_{n=1}^{\infty} -38 \cdot \prod_{n=1}^{\infty} \frac{1}{5}$ b. i 16 ii 2 c d <p<s d radial nodes, = n - 1 - 1 = 3 - 1 - 1 = 1 Angular nodes = 1 = 1.</p<s 	$ \begin{array}{c} 1 \\ 1 \\ 1 \\ 1/2 $
	OR	

	(a) i. n=4, <i>l</i> =0, m=0, s=+ $1/2$ or $-1/2$ ii. n=3, <i>l</i> =2, m= -2 or $+2$, s=+ $1/2$ or $-1/2$ (b) (i)2p (ii) 2s	2 2 ¹ / ₂ x2 =1
34.	 I (a) I Br F Cl (b) Pb4+ Pb2+ Pb II The atomic size of sodium is greater than that of magnesium The effective nuclear charge of magnesium is higher than that of sodium. Therefore After losing an electron, sodium attains the stable noble gas configuration. Hence second ionisation more than that of Mg III size increases the distance between the nucleus and the outermist electron increases 	1 1 2 1
35.	 (a) Definition of hybridisation (a) (i) Explanation with electronic configuration hybridisation and structure of CH4 (b) (ii) Explanation with electronic configuration hybridisation and structure of C2H4 OR I a Bond order of O2 is higher than F2 with the help of MOT b. NH3 dipole moment higher than NF3 explanation II H2S Lewis structure 	1 2 2 2 1