CLASS – XII

SUBJECT : CHEMISTRY

MONTH :

Topic- d and f block

QUES NO	TYPE OF QUESTION (REASONING / MCQ / MATRIX / GRID / OTHER)	QUESTION	OPTION PROVIDED	CORRECT OPTION	EXPLANATION	% OF STUDENTS ATTEMPTED CORRECTLY
01	MCQ	1. Electronic configuration of a transition element X in +3 oxidation state is [Ar]*3d* 5. What is its atomic number?	25 26 27 24	26	x3+ HAS THE ELECTRONIC CONFIGURATION [Ar]3d5. So it has 18+5=23 electrons. Therefore, X - atom has 23+3=26 electrons , and hence, its atomic number is 26.	
02	MCQ	2 The electronic configuration of Cu(II) is *3d* 9 whereas that of Cu(I)	(i) Cu(II) is mo (ii) Cu(II) is les (iii) Cu(I) and C (iv) Stability o	i	**High hydration enthalpy**	

		is *3d*10. Which of the following is correct?				
03	**MCQ**	3 Metallic radii of some transition elements are given below. Which of these elements will have highest density? Element Fe Co Ni Cu Metallic radii/pm 126 125 125 128	**Fe** **Ni** **Co** **Cu**	**Cu**	On moving left to right along period, metallic radius decreases while mass increases. Decrease in metallic radius coupled with increase in atomic mass results in increase in density of metal. Hence Cu will have highest density.	
04	**MCQ**	4 Generally transition elements form coloured salts due to the presence of unpaired electrons. Which of the following compounds will be coloured in solid state?	(i) Ag2SO4 (ii) CuF2 ZnF2 Cu2Cl2	**ii**	Transition elements form coloured salt due to the presence of unpaired electrons. In CuF2, Cu(II) contain one unpaired electron hence, CuF2 is coloured in solid state.	
05	**MCQ**	The correct answer is i Mn2O7Explanation:2KMnO4 + 2H2SO4 concentrated → Mn2O7 + 2KHSO4 +	(i) Mn2O7	**iv**	The correct answer is i Mn2O7Explanation:2KMnO4 + 2H2SO4 concentrated →	

		H2OMn2O7 named ManganeseVII oxide or Manganese heptoxide is an inorganic compound which is highly explosive in nature.	Option 2 MnSO4 (iv) Mn2O3		Mn2O7 + 2KHSO4 + H2OMn2O7 named ManganeseVII oxide or Manganese heptoxide is an inorganic compound which is highly explosive in nature.	
06	**MCQ**	6 The magnetic nature of elements depends on the presence of unpaired electrons. Identify the configuration of transition element, which shows highest magnetic moment.	**3d7** **3d5** **3d8** **3d2**	**ii**	The magnetic nature of elements depends on the presence of unpaired electrons. 3d5 configuration of transition elements which shows highest magnetic moment as it has maximum number of unpaired electrons (5 unpaired electrons).	
07	**R & A**		**I** **Ii** **Iii** **iv**	**ii**		
08	**MCQ**		**I** **Ii** **Iii** **iv**	**i**	**Disproportionation reaction**, also called dismutation reaction, is basically a type of redox reaction involving simultaneous reduction and oxidation of atoms of the same element from one oxidation state (OS) to two different oxidation states. Basically, one	

					compound of intermediate oxidation state gets converted to two compounds, one with higher and the other with lower oxidation states. So, a species is simultaneously reduced and oxidised to form two different products.	
09	**A& R**		**I** **Ii** **Iii** **iv**	**i**	Both assertion and reason are true, and reason is the correct explanation of the assertion. Explanation: All halogens combine with copper to form copper halides except iodine. The reason behind this is that Cu A 2 + oxidises iodide (-1) to iodine (0).	
10	**A& R**		**I** **Ii** **Iii** **iv**	**ii**	Because it has positive electrode potential. Both assertion and reason are true, and reason is the correct explanation of the assertion.	