

CLASS – XI

SUBJECT : CHEMISTRY

MONTH : SEPTEMBER 2024

QUES NO	TYPE OF QUESTION (REASONING / MCQ / MATRIX / GRID / OTHER)	QUESTION	OPTION PROVIDED	CORRECT OPTION	EXPLANATION	% OF STUDENTS ATTEMPTED CORRECTLY
01	MCQ	Number of elements present in third period is	(i) 6 (ii) 18 (iii) 8 (iv) 32	(iii)	The third period starts from Na (atomic number 11) and it ends at Ar (atomic number 18). So this period has 8 elements.	
02	MCQ	The element with atomic number 57 belongs to	(i) s-block (ii) p-block (iii) d-block (iv) f-block	(iii)		
03	MCQ	The last element of the p-block in 7th period can be represented by outermost electronic configuration.	(i) $5f^{14} 6d^{10} 7s^2 7p^6$ (ii) $5f^{14} 6d^{10} 7s^2 7p^0$ (iii) $4f^{14} 5d^{10} 6s^2 6p^6$ (iv) $4f^{14} 5d^{10} 6s^2 6p^4$	(i)		
04	MCQ	In the modern periodic table, the number of period of the element is the same as	(i) atomic number (ii) principal quantum number (iii) azimuthal quantum number (iv) atomic mass	(ii)		
05	MCQ	For the same value of n, the penetration power of orbital follows the order	(i) $s = p = d = f$ (ii) $p > s > d > f$ (iii) $s < p < d < f$	(iv)		

			(iv) $f < d < p < s$		
06	MCQ	Consider the isoelectronic species, Na^+ , Mg^{2+} , F^- and O^{2-} . The correct order of increasing length of their radii is _____.	(i) $\text{F}^- < \text{O}^{2-} < \text{Mg}^{2+} < \text{Na}^+$ (ii) $\text{Mg}^{2+} < \text{Na}^+ < \text{F}^- < \text{O}^{2-}$ (iii) $\text{O}^{2-} < \text{F}^- < \text{Na}^+ < \text{Mg}^{2+}$ (iv) $\text{O}^{2-} < \text{F}^- < \text{Mg}^{2+} < \text{Na}^+$	(ii)	
07	MCQ	The first ionisation enthalpies of Na, Mg, Al and Si are in the order:	(i) $\text{Na} < \text{Mg} > \text{Al} < \text{Si}$ (ii) $\text{Na} > \text{Mg} > \text{Al} > \text{Si}$ (iii) $\text{Na} < \text{Mg} < \text{Al} < \text{Si}$ (iv) $\text{Na} > \text{Mg} > \text{Al} < \text{Si}$	(i)	As we move across the period, nuclear charge increases, atomic size decreases hence, ionization enthalpy increases. For Al ($3s^23p^1$), electron has to be removed from partially filled 3p orbital whereas in Mg ($3s^2$), electron has to be removed from stable fully filled 3s orbital. Removal of an electron from stable, fully filled orbital requires more energy than removal of electron from partially filled orbital. Thus, ionisation enthalpy for Mg is greater than ionisation enthalpy for Al. So, the correct order of first ionization enthalpies is: $\text{Na} < \text{Mg} > \text{Al} < \text{Si}$

08	MCQ	Which of the following statements is incorrect?.	<p>(i) Helium has the highest first ionisation enthalpy in the periodic table.</p> <p>(ii) Chlorine has less negative electron gain enthalpy than fluorine.</p> <p>(iii) Mercury and bromine are liquids at room temperature.</p> <p>(iv) In any period, the atomic radius of alkali metal is the highest</p>	(ii)		
09	MCQ	Which of the following have no unit?	<p>(i) Ionisation enthalpy</p> <p>(ii) Electron gain enthalpy</p> <p>(iii) Electronegativity</p> <p>(iv) Atomic radii</p>	(iii)	<p>Electronegativity is the tendency of an atom to attract electrons in a molecule.</p> <p>Ionization enthalpy and Electron gain enthalpy are measured in kJ/mol, while radii (atomic or ionic) is measured in the unit length.</p>	
10	MCQ	<p>Ionic radii vary in</p> <p>(a) inverse proportion to the effective nuclear charge.</p> <p>(b) inverse proportion to the square of effective nuclear charge.</p> <p>(c) direct proportion to the screening effect.</p> <p>(d) direct proportion to the square of screening effect.</p>	<p>(i) (a), (b)</p> <p>(ii) (b), (c)</p> <p>(iii) (c), (d)</p> <p>(iv) (a), (c)</p>	(iv)		