

**CHEMISTRY****Periodic Properties****Ionisation Energy**

21. The first, second and third ionisation energies ( $E_1$ ,  $E_2$  and  $E_3$ ) for an element are 7 eV, 12.5 eV and 42.5 eV respectively. The most stable oxidation state of the element will be
- (1) +1 (2) +4  
(3) +3 (4) +2
22. Which of the following metal is expected to have the highest third ionisation enthalpy?
- (1) Cr ( $Z = 24$ ) (2) V ( $Z = 23$ )  
(3) Mn ( $Z = 25$ ) (4) Fe ( $Z = 26$ )
23. Second ionisation potential of Li, Be and B is in order
- (1) Li > Be > B (2) Li > B > Be  
(3) Be > Li > B (4) B > Be > Li
24. The first four I.E. values of an element are 284, 412, 656 and 3210 kJ mol<sup>-1</sup>. The number valence electrons in the element are
- (1) one (2) two  
(3) three (4) four
25. The first I.E. of Na, Mg, Al and Si are in the order
- (1) Na < Mg < Al < Si  
(2) Na < Al < Mg < Si  
(3) Na < Al < Si < Mg  
(4) Na < Mg < Al < Si
26. Amongst the following elements, the highest ionization energy is
- (1) [Ne] 3s<sup>2</sup>3p<sup>1</sup>  
(2) [Ne]3s<sup>2</sup>3p<sup>3</sup>  
(3) [Ne] 3s<sup>2</sup>3p<sup>2</sup>  
(4) [Ar]3d<sup>10</sup>4s<sup>2</sup>4p<sup>3</sup>
27. In which of the following species 2<sup>nd</sup> I.E. < 1<sup>st</sup> I.E
- (1) Be  
(2) Ne  
(3) Na<sup>+</sup>  
(4) None of these
28. Successive first five ionisation energies of a particular element is 7.1, 14.3, 34.5, 46.8, 162.2 (in eV) respectively. The element is likely to be
- (1) Na (2) Si  
(3) F (4) Ca
29. Which one of the following statement is incorrect in relation to ionisation enthalpy?
- (1) Ionisation enthalpy increases for each successive electron.  
(2) The greatest increase in ionisation energy is experienced by removal of electron from core noble gas configuration  
(3) End of valence electrons is marked by a big jump in ionisation enthalpy  
(4) Generally removal of electron from orbital bearing lower n value is easier than from orbital having higher n value
30. Select which of the following is incorrect order of I.E.?
- (1) Cu > Ag > Au  
(2) Cu < Zn < Ga  
(3) Hg > Zn > Cd  
(4) Tl > Ga > In