1. The first and the second ionisation energies of magnesium are 7.646 eV and 15.035 eV respectively. The amount of energy in kJ needed to convert all the atoms of magnesium into Mg^{2+} ions present in 24 mg of magnesium vapour will be:
(Given $1\ eV = 96.5\ kJmol^{-1}$).

   A. $2.455\ kJ$

   B. $2.188\ kJ$

   C. $1.094\ kJ$

   D. $4.370\ kJ$

2. Among the following species, which has the maximum hydration energy?

   A. OH^-

   B. NH_4^+

   C. F^-

   D. H^+

3. Select the correct statements.

   A. The heat of hydration of the dipositive alkaline earth metals ions increases with increase in their ionic size.

   B. Hydration of alkali metal ions is less than that of alkaline earth metals.

   C. Alkaline earth metal ions, because of their much larger charge to size ratio, exert a much stronger electrostatic attraction on the oxygen of water molecule surrounding them.

   D. The melting point of sodium halides follow the order $NaF > NaCl > NaBr > NaI$.

4. For two ionic compounds XY and AB, the data of their lattice energy and hydration energy is given as:

Compound	Lattice energy (kJ/mol)	Hydration energy(kJ/mol)
XY	400	1000
AB	600	2000

What will be the correct order of solubility in water?

A. AB > XY

B. XY > AB

C. XY = AB

D. Can't be predicted