2006 (*b*) (*i*) Define *electronegativity*. (6)

(*ii*) Explain why there is a general increase in electronegativity values across the periods in the periodic table of the elements. (6)

(*iii*) Explain, in terms of the structures of the atoms, the trend in reactivity down Group I (the alkali metal group) of the periodic table. (9)

**2002 Question 5**

(a) Define first ionisation energy. **(8)**

(b) Account fully for the trends in first ionisation energies of elements across the second period of the periodic table (i.e. Li to Ne). **(15)**

(c) Account for the trend in first ionisation energies of the elements going down Group II of the periodic table, i.e. the alkaline-earth metals. **(6)**

The approximate values for the first eight ionisation energies of magnesium are given in the following table.



(d) Explain why there is an increase in these ionisation energy values. **(9)**

(e) Account for the dramatic increase in ionisation energy going from the second to the third ionisation. Between which two ionisations would you expect the next dramatic increase to occur if the data for further ionisation energies of magnesium were examined? Give a reason for your answer. **(12)**

Q3. Describe two differences between Mendeleevs Periodic table and the Modern Periodic table.