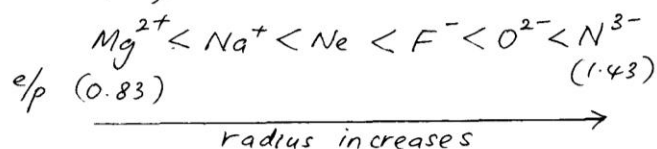


Q6 (b)

Species	no. of proton	no. of electrons	e/p
N^{3-}	7	10	1.43
Mg^{2+}	12	10	0.83
Na^+	11	10	0.91
Ne	10	10	1.00
F^-	9	10	1.11
O^{2-}	8	10	1.25

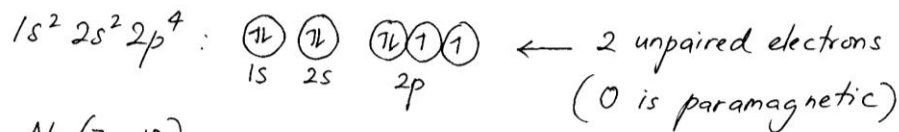
- All the species are isoelectronic.
- Large value of e/p will produce larger size of species (larger/longer radius)



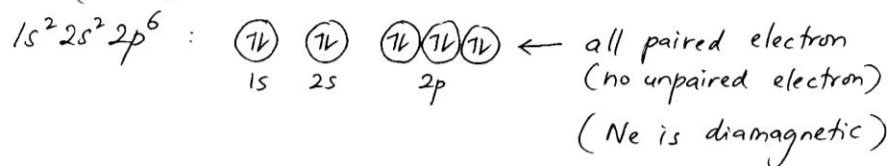
- @ more proton in the nucleus - stronger the electrostatic attraction - electrons are closer to the nucleus - the size/radius become shorter.

Sem2_2005_2006_Q6c-Q6d : ELECTRONIC CONFIGURATIONS

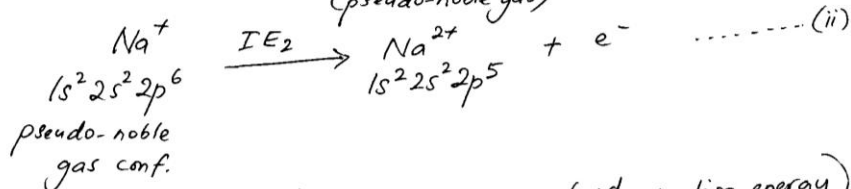
Q6(c): O (Z=8)



Ne (Z=10)



Q6(d) Na $\xrightarrow{IE_1}$ Na⁺ + e⁻(i)



$$IE_1 (\text{first ionisation energy}) < IE_2 (\text{2nd ionisation energy})$$

A very stable Na⁺ ion is produced in the first process. So very less energy is required. Whereas in the 2nd ionisation process, Na⁺ ion very stable. So a large amount of energy required to destroy the stable configuration.

Prepared by
V. Manoharan
vmano@usm.my
manovv1955@yahoo.com
04-6533888 ext 3566