

**CHEM 135 PRACTICAL 1 RESULTS TABLE 01-2012 - Total marks 43**

SAMPLE TESTED	OBSERVATION WITH NaOH(aq)	OBSERVATION WITH NH <sub>3</sub> (aq)	FLAME COLOUR	INFERENCE (cation present) and ionic equation(s)
A	Green ppt. insol. in xs. rapidly turning brown. (3)	Green ppt. insol. in xs. rapidly turning brown. (3)	—	Fe <sup>2+</sup> present. NaOH: Fe <sup>2+</sup> (aq) + 2OH <sup>-</sup> (aq) → Fe(OH) <sub>2</sub> (s) NH <sub>3</sub> : Fe <sup>2+</sup> (aq) + 2OH <sup>-</sup> (aq) → Fe(OH) <sub>2</sub> (s) Colour change: 4Fe(OH) <sub>2</sub> (s) + O <sub>2</sub> (g) + 2H <sub>2</sub> O(l) → 4Fe(OH) <sub>3</sub> (s) (3)
B	White ppt. sol. in xs. (2)	White ppt. sol. in xs. (2)	—	Zn <sup>2+</sup> present. NaOH: Zn <sup>2+</sup> (aq) + 2OH <sup>-</sup> (aq) → Zn(OH) <sub>2</sub> (s) Zn(OH) <sub>2</sub> (s) + 2OH <sup>-</sup> (aq) → [Zn(OH) <sub>4</sub> ] <sup>2-</sup> (aq) NH <sub>3</sub> : Zn <sup>2+</sup> (aq) + 2OH <sup>-</sup> (aq) → Zn(OH) <sub>2</sub> (s) Zn(OH) <sub>2</sub> (s) + 4NH <sub>3</sub> (aq) → [Zn(NH <sub>3</sub> ) <sub>4</sub> ] <sup>2+</sup> (aq) + 2OH <sup>-</sup> (aq) (4)
C	Blue ppt. insol. in xs. (2)	Blue ppt. sol. in xs. to form deep blue soln. (3)	—	Cu <sup>2+</sup> present. NaOH: Cu <sup>2+</sup> (aq) + 2OH <sup>-</sup> (aq) → Cu(OH) <sub>2</sub> (s) NH <sub>3</sub> : Cu <sup>2+</sup> (aq) + 2OH <sup>-</sup> (aq) → Cu(OH) <sub>2</sub> (s) Cu(OH) <sub>2</sub> (s) + 4NH <sub>3</sub> (aq) → [Cu(NH <sub>3</sub> ) <sub>4</sub> ] <sup>2+</sup> (aq) + 2OH <sup>-</sup> (aq) (3)
D	White ppt. sol. in xs. (2)	White ppt. insol. in xs. Ppt. settles slowly. (3)	—	Al <sup>3+</sup> present. NaOH: Al <sup>3+</sup> (aq) + 3OH <sup>-</sup> (aq) → Al(OH) <sub>3</sub> (s) Al(OH) <sub>3</sub> (s) + OH <sup>-</sup> (aq) → [Al(OH) <sub>4</sub> ] <sup>-</sup> (aq) NH <sub>3</sub> : Al <sup>3+</sup> (aq) + 3OH <sup>-</sup> (aq) → Al(OH) <sub>3</sub> (s) (3)
E	White ppt. sol. in xs. (2)	White ppt. insol. in xs. (2)	—	Pb <sup>2+</sup> present NaOH: Pb <sup>2+</sup> (aq) + 2OH <sup>-</sup> (aq) → Pb(OH) <sub>2</sub> (s) Pb(OH) <sub>2</sub> (s) + 2OH <sup>-</sup> (aq) → [Pb(OH) <sub>4</sub> ] <sup>2-</sup> (aq) NH <sub>3</sub> : Pb <sup>2+</sup> (aq) + 2OH <sup>-</sup> (aq) → Pb(OH) <sub>2</sub> (s) (3)
F	No ppt. no action on warming. (2)	—	Lilac flame, crimson through blue glass. (2)	K <sup>+</sup> present (1)