

**FORM THREE
CHEMISTRY
PAPER 3/ PRACTICAL
MARKING SCHEME**

QUESTION 1

Tables I and II

- Complete table
- Decimals
- Accuracy

Each table is 3marks

b) Average volume for table 1 is about 12.5cm³.

c) i) Moles of solution N is 25cm³

$$= \frac{0.02 \times 25}{1000} = 0.0005$$

ii) Mole ratio 1:5
 Moles of H = $\frac{1}{5} \times 0.0005 = 0.0001$

iii) Concentration of H in moles per litre

$$\frac{0.0001 \times 1000}{\frac{5 \text{ Av.vol}}{10.0001 \times 1000}}$$

$$= \frac{12.5}{10.0001} = 0.008\text{M}$$

e) Average volume for table II is about 18.2cm³

f) i) Number of moles of solution H used
 ans in $\frac{c(iii) \times \text{Av.vol}}{1000} = \frac{10.008 \times 18.2}{1000} = 0.0001456$

ii) Moles of x in 25cm³ solution
 Mole ration H:X = 2:5

$$= \frac{5}{2} \times \text{ans in (f)(i)}$$

$$= \frac{5}{2} \times 0.0001456$$

$$= 0.000364$$

iii) Concentration of x in moles per litre

$$= \text{Ans in } \frac{(f)(ii) \times 1000}{25}$$

$$= \frac{0.000364 \times 1000}{25}$$

$$= 0.01456$$

Question 2a

	Observations	Inferences
a.	White solid dissolves to form a colourless solution.	Cu^{2+} , Fe^{2+} , Fe^{3+} absent
i)	White ppt, soluble in excess	Zn^{2+} , Pb^{2+} or Al^{3+} present
ii)	White ppt, insoluble in excess	Pb^{2+} or Al^{3+} present Zn^{2+} absent
iii)	No white ppt	Al^{3+} present Pb^{2+} absent

(1mk each)

Question 2b

i)

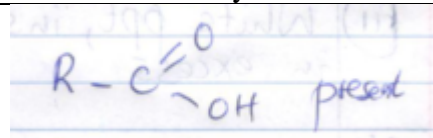
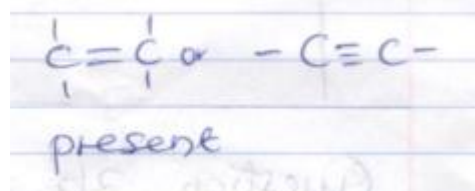
Solid	Colour of flame
Sodium chloride	Golden yellow
Potassium chloride	Blue/purple/lilac
Calcium chloride	Red
Y	Blue/purple/lilac

(½mk each)

ii) Cation present in Y is K^+ .

(1mk)

Question 3

Observations	Inferences
a. Solid dissolves to form a colourless solution	Solid F is polar
b. PH= 5.0	Solution is weakly acidic
c. Effervescence/bubbles of a colourless gas	
d. Orange/yellow bromine water is decolourised	
e. Purple acidified potassium manganate (VII) is decolourised	