SERIES 20 EXAMS

CHEMISTRY 233/3
MARKING SCHEME

1.Table 1

	I	II	III
Final burette reading (cm3)	37.8	37.9	38.0
Initial burette reading (cm3)	0.0	0.0	0.0
Volume of solution B (cm3)	37.8	37.9	38.5

CT-1
D-1
AC-1
P.A=1
F.A=1
=5mks

Find the average volume of √ ½

$$\frac{37.8+37.9+38.0}{3}$$

$$=37.9cm^3 \quad \surd ½$$

(a) (b) (i) $\frac{8.8}{40}$ √ ½ =0.22M√ ½

(ii) Moles of B used

$$\frac{answerinmoles(a)x0.22}{1000}$$ *correct answers*

Mole ratio 1:1 √ ½

Moles of A =correct answer above

Table II

	I	II	III
Final burette reading (cm3)	11.6	11.7	11.8
Initial burette reading (cm3)	0.0	0.0	0.0
Volume of solution B (cm3)	11.6	11.7	11.8

CT-1
D-1
AC-1
P.A=1
F.A=1
=5mks

(a) $\frac{11.6+11.7+11.8}{3}=11.7cm^3$

(b) (i) Moles of B used

$\frac{\text{Answer in (a) x 0.22}}{1000}$ =correct answer

Mole ratio 1:1√ ½

Moles of D= correct answer above

(ii) $\frac{\text{answer in b(i) x 250}}{25}$

Correct ans √ ½ or

Answer in b(i) x 10√ ½

Correct asn √ ½

(iii) $\frac{\text{Answer in b(ii) procedure I x 100}}{100}$√ ½

Correct answer √ ½ or

Answer in b(i) procedure I

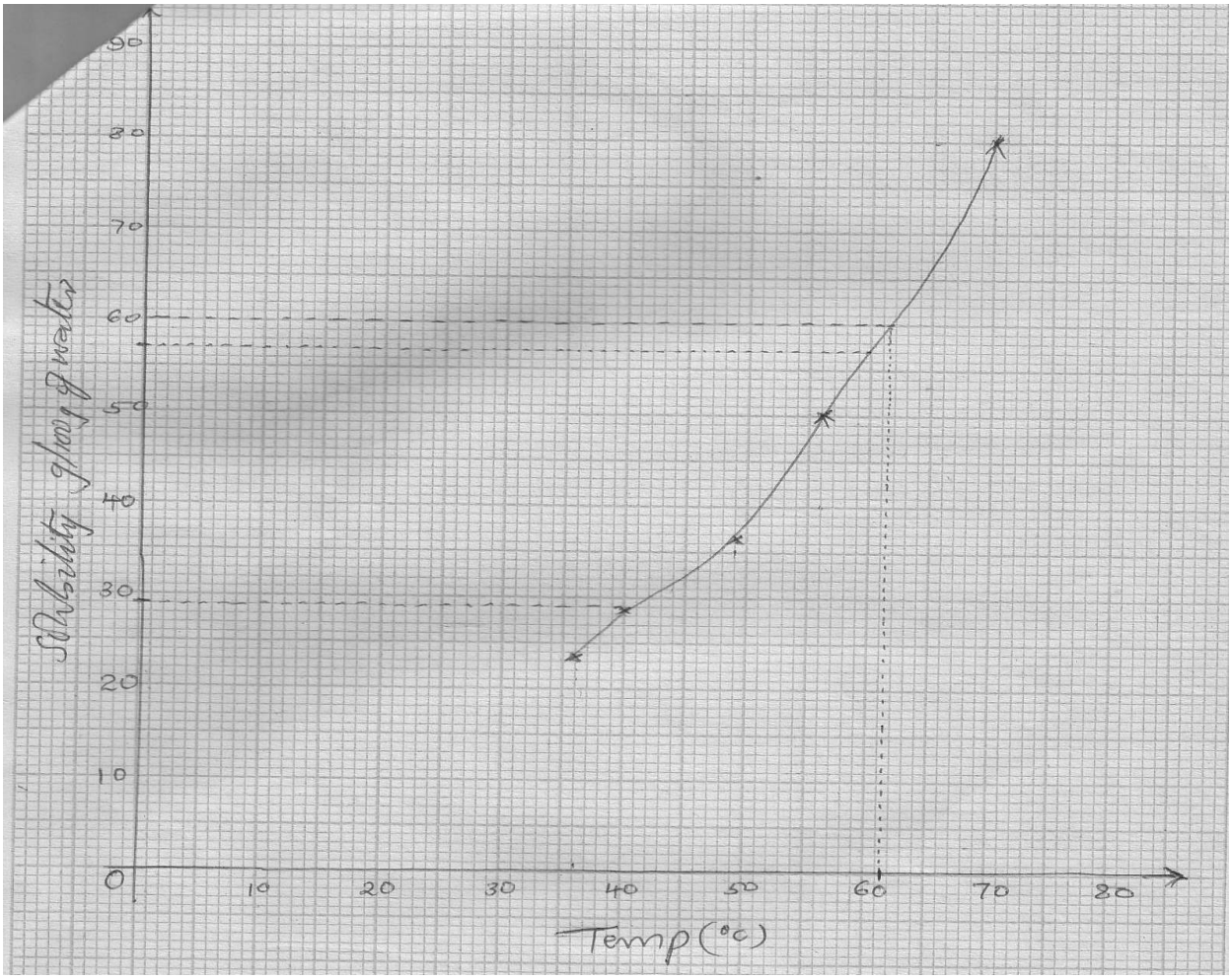
10

Correct ans √ ½

(iv) Answer in b(iii) above –asnwer in b(ii) √ ½
Correct answer √ ½ I
(v) CO_3^{2-} : H^+
1 : 2√ ½
Answer in (iv) above I
2
(c) (i)Answer in (v) above x 106√ ½
Correct ans √ ½
(ii) Answer in c(i) above x 100√ ½
0.5
Correct answer √ 1.2
2.

Volume of water in boiling tube (cm^3)	Temperature in ^oC at which crystals first appear	Solubility of solid Q in g/100g of water
5	70	80.0
8	56	50.0
11	49	36.4
14	40	28.6
17	36	23.5

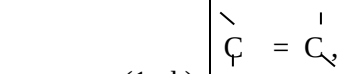
(b)(i) 61.5^{o}C
(ii) 57-29=28g
28 x100
57



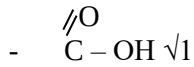
3.

Observations	Inferences
White solid dissolves to form a colourless filtrate and white residue √ ½ (1mk)	Sparingly soluble compound √ (1mk)

(ii)

Observations	Inferences
Orange $K_2Cr_2O_7/H^+$ turns green (1mk)	 -C ≡ C - √ ½ (1mk)

(iii)

Observations	Inferences
Effervescence √ ½ of colourless gas √ ½ (1mk)	 (1mk)

(b)(i)

Observations	Inferences
Effervescence √ ½ No white ppt√ ½ (1mk)	CO_3^{2-}√ ½ Pb^{2+},Ag^+ absent √ ½ (1mk)

(ii)

Observations	Inferences
White ppt soluble √1 (1mk)	Zn2+ √1 (1mk)