5.4.3 Chemistry Practical Paper 3 (233/3)

1. Table 1

|  |  |  |  |
| --- | --- | --- | --- |
|  | I | II | III |
| Final burette reading | 17.45 | 32.90 | 36.05 |
| Initial burette reading | 2.10 | 17.45 | 20.60 |
| Volume of solution B used (cm3) | 15.35 | 15.45 | 15.45 |

1. - (i) Average volume

\_ 15.35+15.45+ 15.45

(ii)

= 15.42cm3

Moles of sodium thiosulphate used

\_ 0.05x15.42

1000 7.71 x 10'4 moles

(y2)

(lA)

1. (i) Number of moles of A in 25 .Ocm3

mole ratio A : Na2S203 . 5H20 1:6

7.71 x 10\_4/6 = 1.28 x 10'4 moles (ii) Concentration of solution A in mol dm3

1. x 10-4 moles in 25cm3

? moles in 1000cm3

1. x 10 4x 1000/25 (1)

5.12 x 10-3 moles/dm3 (1)

(4 marks)

(1 mark)

(1 mark)

(1 mark)

(2 marks)

Table 2

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Test tube number | 1 | 2 | 3 | 4 | 5 | 6 |
| Volume of distilled water (cm3) | 0 | 2 | 3 | 5 | 6 | 7 |
| Volume of solution A (cm3) | 10 | 8 | 7 | 5 | 4 | 3 |
| Time (s) | 22.5 | 28.0 | 32.0 | 50.0 | 57.5 | 85.0 |
| Rate = YTime (s l) | 0.044 | 0.036 | 0.031 | 0.020 | 0.017 | 0.012 |

(1) (1) (1) (1) (1) (1)

(6 marks)

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Rate lxlO'3 sec

(a) Graph of Rate

40

35

30

25

20

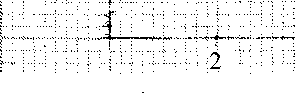
15

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10 '

4 6 8 10

Volume of solution A (cm3)



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(b) Time taken for 4cm3 of distilled water.

6cm3 of solution A is added, from the graph = 25x103 sec1 (1)

= 40 seconds (1) (2 marks)

1. Observation

|  |  |  |  |
| --- | --- | --- | --- |
| (a) (i) | (I) | A white precipitate (1) | Presence of Pb2+, Ba2+ or Ca2+ (1)  1 mark for all the 3 ions '/2 mark for 2 correct ions 0 mark for one or none |
|  | (II) | No white precipitate (1) | Absence of Pb2+ (1) |
|  | (III) | No white precipitate (1) | S042', S032-, C032 ions absent (1)  1 mark all the 3  '/2 mark for 2 ions correct  0 mark for one or none |
|  | (IV) | No white precipitate (1) | Cl ions absent (1) |
| (ii) |  | Effervescence ;/2/Bubbles/Fizzing Colourless gas produced /2 Turns red litmus blue /2 Blue litmus remained blue x/2  (2 marks) | NO"3 present (1) |
|  |  |  | (Total 11 marks) |

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3,

|  |  |  |
| --- | --- | --- |
|  | Observations | Inferences |
| (a) | No effervescence (1) | Compound/solution F not acidic H+ or R-COOH absent.  (1) |
| (b) (i) | Burns with a sooty/smoky % luminous/yellow flame >< | Unsaturated cpd (1) " / C = C ^ Long chain hydrocarbon or -C = C- |
| (ii) | Some white suspension/solid remains undissolved % | Compound slightly/partially soluble in water |
| (c) (i) | Effervescence % Colourless gas produced / | Mixture is acidic (1) RCOOH present |
| (ii) | Not decolourized (1) | \ /  C=C / \  absent (1)  —c=c—  absent |

(Total 9 marks)

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