**FORM 4 MALIET P3 MARKING SCHEME**

**MARKING SCHEME**

**233/3**

**TABLE 1 (5 MKS)**

Complete table 1 mk

(i) Complete table with 3 litres 1 mk

(ii) incomplete table with 2 litres consist value 1 mk

(iii) In complete table with 2 inconsistent value 1 mk

penalties

* unrealistic burette reading
* Arithmetic error
* inverted table

**N/B** Penalize ½ mk each to a maximum of ½ mk

Use of decimal 1 mk

- A ward 1 mk if all values in row 1 and 2 are consistently to 1 d . p or 2 d.p

- If to 2 d.p the last digit be zero or five

- otherwise award zero

- accept the inconsistency of zero

Accuracy - 1 mk

* Tied to the teachers average value
* Check any of the litre readings 1mk

1. If any of them is within ± 0.1 from S.V award 1 mk
2. If within ± 0.1 from S.V ---- ½ mk
3. If outside ± 0.2 unit award zero

Principle of Averaging ……….. 1mk

1. If 3 constant value, averaged 1 mk
2. If only two are consistent and averaged 1mk
3. If 3 are possible but only 2 averaged 0 mks
4. 3 inconsistent averaged …… 0 mks

conditions an penalties

1. the answer should be at least 2 d.p unless if divides exactly
2. if the average values gives more than 2 d.p. but the candidates minds of to 1 d.p or less penalize ½ mk for the answer
3. penalize a ½ mk for any unit if given

Final Answer 1 mk\*BND\*

Compare the candidate’s average value with the school’s value once more

1. if within ± 0.1 cm3 of S.V ------ 1 mk
2. if within ± 0.2 cm3 of S.V ------ ½ mk
3. if inside ± 0.2 cm3 award 0mk

Note (i) If arithmetic error was made correct for the student average for him and award accordingly

1. Likewise if wrong value were average choose the correct values, average and award accordingly
2. No. of mole of M2 = ans (a) x 1🗸

1000 2mks

correct answer🗸

1. 2 H+aq + CO32- H2 O(I) +CO2(g) 2mks
2. Moles of base = ½ x ans (b) 🗸 2mks

= correct answer🗸

1. Concentration = answer (d) x 1000 2 mks

25🗸

= correct answer🗸

1. Mass of Na2 Co3 = 106 x ans (e) 2mks

= Correct answer🗸

1. Mass of Nacl = 95 – ans (f) ½

% of nacl = (95 – ans (f) x 100🗸 2mks

95

= Correct answer🗸

16 mks

N/B: from (b) to (g) allow an error of + 2 unit in the 4th digit

2. Table 2

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Vol of m3 | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 |
| Temp C |  |  |  |  |  |  |  |  |

Complete table 1 mk

Accuracy - 1 mk

Decimal - 1 mk

Trend - 1 mk 4 mks

b) Graph

label - 1 mk

plotting – 1 mk

scale - 1 mk

shape - 1 mk

Temperature

4 mks

Volume of NaoH added

c) (i) Shown in graph ½ mk

correct reading ---- ½ mk

1mk

(ii) ΔT shown in graph -- ½ Mk

Correct answer from graph ½ mk 1mk

d) H = MC ΔT = (23 + C (i) x 4.2 x C (ii) 2mks

Correct answer

Allow an error of ± 2 units in the 4th digit if in Joules

e) Moles = 1 x 23 = 0.023 1mk

1000

f) Molar heat = 1 x ans (d)

ans (e)

= correct answer 2mks

± 2 Unit in 4th digit if in joules

NB: correct symbol and unit be given e.g. – 1260 (KJ/ mole

Or statement implying negative value like heat evolved for 1 mole is 1260 kj 15

Otherwise penalize ½ mk for the answer

3

|  |  |  |  |
| --- | --- | --- | --- |
|  | Observation | inferences |  |
| A | Colourless solution forms | Soluble salt/ absence of coloured / ions Fe2+, Fe3+, Cu 2+ absent | 2 |
| B | White ppte, soluble in excess | Ba2+ Pb2+, Zn2+, or A 13t present | 3 |
| C | White ppte insoluble in excess | Ba2+ Pb2+, or A13t present | 2. |
| E | No white ppte// no ppte | So2-4 absent 1mk | 2 |
|  |  |  | 09 |