

2025 JC2 H2 Chemistry Prelim Practical Confidential Instructions

Apparatus

1. In addition to the fittings ordinarily contained in a chemical laboratory, the apparatus and materials specified below will be necessary
2. Disposable gloves should be made available to candidates.
3. For each student:

(1)	Eight(8) clean and dry Pyrex test-tubes (125 mm × 15 mm)	A new set of items 1 to 9 should be provided for each candidate in each shift.
(2)	Six(6) clean teat pipettes (dropping pipettes/droppers)	
(3)	Two(2) clean and DRY Pyrex boiling tubes	
(4)	One(1) wooden splint	
(5)	Two(2) pieces of red and blue litmus papers each	
(6)	Two(2) pieces of paper towels	
(7)	Two(2) pieces of filter paper	
(8)	One(1) plastic spatula	
(9)	One (1) Polystyrene cup	
(10)	One (1) beaker of capacity 250 cm ³	Items 10 to 31 may be re-used by candidates in the 2 nd and 3 rd shifts.
(11)	Two(2) 250 cm ³ conical flasks	
(12)	One(1) burette of capacity 50 cm ³ (Blue)	
(13)	One(1) stopwatch	
(14)	Two(2) filter funnel	
(15)	One(1) measuring cylinder of capacity 50 cm ³	
(16)	One(1) measuring cylinder of capacity 10 cm ³	
(17)	One(1) pipette of capacity 25 cm ³	
(18)	One(1) pipette filler	
(19)	One(1) burette stand with butterfly clamp	
(20)	One (1) delivery tube	
(21)	One(1) test-tube rack	
(22)	One(1) test-tube holder	
(23)	One(1) white tile	
(24)	One(1) test-tube brush	
(25)	One(1) large brush	
(26)	One(1) marker pen suitable for writing on glass	
(27)	One(1) wash bottle of deionised water, labelled “ deionised water ”	
(28)	One(1) lighter	
(29)	One(1) Bunsen burner	
(30)	One(1) pair of safety goggles	
(31)	One(1) Thermometer (read up to 50 deg Celsius)	
(32)	One(1) Glass rod	

Chemicals Required

1. It is especially important that great care is taken that the confidential information given below does not reach the students either directly or indirectly.
2. For each student:

Label	Quantity per candidate	Identity	Notes
FA 1	200 cm ³	Potassium manganate(VII), KMnO ₄ (aq)	0.0200 mol dm ⁻³
FA 2	100 cm ³	Sulfuric acid, H ₂ SO ₄ (aq)	1.0 mol dm ⁻³
FA 3	150 cm ³	Iron(II) solution	0.0800 mol dm ⁻³ 31.37g Iron(II) ammonium sulfate and 10 g CuSO ₄ dissolved 100 cm ³ 1 moldm ⁻³ sulfuric acid and top up to 1L To prepare no more than 1 week ahead. Trial on 1 week old sample:
FA 4	70 cm ³	HCl/	2 mol dm ⁻³ (FYI: QP identity is citric acid)
FA 5	2.5 g (<2.8 g)	solid sodium hydrogencarbonate, NaHCO ₃	Placed in a weighing bottle Trial on 1 week old sample
S	1 vial	CaNO ₃ (s) ZnCO ₃ (s)	a stoppered vial containing about 1 spatula of calcium nitrate and 2 spatula of zinc carbonate. Note: Calcium nitrate should be freshly purchased. So far stable for 4 days.
Glucose	5 cm ³	Glucose C ₆ H ₁₂ O ₆	0.5 mol dm ⁻³ glucose

3. For each bench:

- (1) 2.0 mol dm⁻³ dilute sodium hydroxide, NaOH
- (2) 2.0 mol dm⁻³ aqueous ammonia, NH₃ (**Freshly prepared from unopen stock otherwise, the aqueous ammonia absorb CO₂ and may precipitate CaCO₃ for Q3step2) To prepare max 3 days ahead**)
- (3) Freshly prepared and saturated limewater
- (4) Aluminium foil

4. To prepare Fe²⁺ solution for rinsing KMnO₄ stains for each lab during prelim exam. Label as "cleaning solution"

The Supervisor is required to perform the experiment on the day of the task. It is suggested that the results are recorded on a spare copy of the question paper clearly labelled 'Supervisor's Results'. This should be done for each session held and each laboratory used in that session, and each set of solutions supplied. This must be enclosed with the scripts.