

**CONFIDENTIAL INSTRUCTIONS – Ensure that all materials in this document must NOT reach the candidates either directly or indirectly.**

## **2024 Chemistry (Revised) Syllabus 6092 Prelim Exam**

### **Apparatus & Chemical List**

#### **Question 1**

- 3 x test-tubes
- 1 x test-tube rack
- 1 x test-tube holder
- 1 x teat pipette / dropping pipette
- 1 x Bunsen burner
- 1 x lighter
- 1 x wash bottle of deionised water
- 1 x delivery tube
- 2 x red / blue litmus papers
- 1 x wooden splint
- 1 x 5 cm<sup>3</sup> solution **W**  
(dispensed in boiling tube)
- 1 x **waste** container

#### **Solution W:**

1 mol/dm<sup>3</sup> aqueous ammonium sulfate  
[dissolve 13.2g (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub> in 100 cm<sup>3</sup> deionised water]

#### **bench reagents**

1.0 mol/dm<sup>3</sup> dilute nitric acid  
1.0 mol/dm<sup>3</sup> aqueous sodium hydroxide  
0.1 mol/dm<sup>3</sup> aqueous barium nitrate  
0.05 mol/dm<sup>3</sup> aqueous silver nitrate  
limewater (freshly prepared & saturated)

#### **Question 2**

- 1 x 25.0 cm<sup>3</sup> pipette
- 1 x pipette filler
- 1 x 50 cm<sup>3</sup> burette
- 1 x 'butterfly' burette clamp
- 1 x retort stand
- 1 x filter funnel
- 2 x conical flasks
- 1 x white tile
- 1 x 150 cm<sup>3</sup> **P** in capped container
- 1 x 150 cm<sup>3</sup> **Q** in capped container
- 1 x 15 cm<sup>3</sup> thymolphthalein indicator  
in dropper bottle

#### **Solution P:**

0.04 mol/dm<sup>3</sup> dilute sulfuric acid  
[cautiously pour 2.2 cm<sup>3</sup> of concentrated sulfuric acid(98%) into 500 cm<sup>3</sup> of deionised water with continuous stirring. Make this solution up to 1 dm<sup>3</sup> with deionised water.]

#### **Solution Q:**

0.100 mol/dm<sup>3</sup> potassium hydroxide  
[Dissolve 5.611 g of KOH in 1 dm<sup>3</sup> of deionised water.]

**NOTE to check for titration allowance in preparation of solutions P and Q:**

SS to ensure that 25.0 cm<sup>3</sup> of Q reacts between 29.00 cm<sup>3</sup> and 33.00 cm<sup>3</sup> of P

**CONFIDENTIAL INSTRUCTIONS – Ensure that all materials in this document must NOT reach the candidates either directly or indirectly.**

**Question 3**

- 1 x 50 cm<sup>3</sup> measuring cylinder
- 1 x 250 cm<sup>3</sup> beaker
- 1 x thermometer ( -10°C to + 110°C)
- 1 x styrofoam cup
- 1 x glass rod
- 1 x stop-watch
- 1 x **at least 2.0 g zinc powder** –  
label as **T**  
(dispense in small vial)
- 1 x 50 cm<sup>3</sup> **R** in capped container
  
- 4 x electronic balance

**Solution R:**

0.800 mol/dm<sup>3</sup> copper(II) sulfate  
[dissolve 199.7 g CuSO<sub>4</sub>.5H<sub>2</sub>O in 1 dm<sup>3</sup>  
of deionised water]