

091406T4SLT

SCIENCE LABORATORY TECHNOLOGIST LEVEL 6

SLT/OS/SL/CR/03/6/A

Apply Chemistry Techniques

Nov/Dec 2024



**TVET CURRICULUM DEVELOPMENT, ASSESSMENT AND CERTIFICATION
COUNCIL (TVET CDACC)**

PRACTICAL ASSESSMENT

OBSER

CKLIST

Candidate's name & Registration C			
Assessor's name & Registration Co			
Venue of Assessment			
Date of assessment			
Items to be evaluated: <i>Please award marks as appropriate. Give a brief comment on your observation.</i>	Marks available	Marks obtained	Comments
TASK I: PREPARE 25 CM³ OF 0.5M HCl FROM 1M HCl SOLUTION			
1. Wore PPEs (lab coat buttoned, closed shoes). • Lab coat • Closed shoe <i>(Award 1 mark or zero for the PPE donned as per workplace procedures)</i>	1 1		

2. Cleaned apparatus for the task (Award 2 marks for cleaning all relevant apparatus)	2		
3. Diluted 1M HCl solution to 0.5M as per the chemistry laboratory procedures: - Calculated the volume of 1M HCl required to prepare 0.5M solution using dilution formula ($m_1v_1=m_2v_2$) (12.5cm^3) - Accurately measured the solution using measuring cylinder - Correctly transferred the solution to a beaker and added 12.5cm^3 of distilled water. - Labelled the beaker containing the solution correctly. (Award marks for each correctly done activity)	2 1 2 1		
Sub -Total 1	10		
TASK II: DETERMINE MOLAR HEAT OF NEUTRALISATION OF 0.5M HCl AND 0.5M NaOH			
4. REACTION - Measured and recorded the initially temperature of the acid - Measured 25cm^3 of 0.5M NaOH - Added the 25cm^3 of NaOH solution to the beaker containing HCl solution and stirred	2 2 2 3 3		

- Measured and recorded the highest temperature reached by the solution. - Determined the temperature change, ΔT - Calculated the amount of heat energy released during the reaction using the formula $Q=MC\Delta T$ - Calculated the number of moles of either 0.5M HCl or 0.5M NaOH that reacted. (0.0125mole) - Calculated the enthalpy change (heat energy) that would be produced if 1 mole of HCl reacted with 1 mole NaOH. - Converted the molar heat above to calories. <i>(Award marks for each correctly done activity)</i>	4 3 3 3		
5. Cleaned all the apparatus and working station: - Washed glassware and returned apparatus to their respective stores - Disposed used reagents and gloves safely as per chemistry laboratory procedures - Wiped working bench/station clean.	$\frac{1}{2}$ 1		

(award 2 marks for each correctly done activity)	½		
Sub-Total 2	27		
GRAND TOTAL	37		
ASSESSMENT OUTCOME			
The candidate was found to be: Competent ☐ Not yet competent ☐ (Please tick as appropriate) (The candidate is competent if the candidate obtains at least 50%)			
Feedback from candidate:			
Feedback to candidate:			
Candidate's Signature		e	
_____		_____	
Assessor's Signature		Date	
_____		_____	