

051106T4APB

APPLIED BIOLOGY LEVEL 6

APB/OS/AB/CR/05/6/A

Carry out Ecological and Soil Studies

March/April 2025



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

PRACT MENT

INSTRUCTIONS TO ASSESSOR

1. Assess the candidate as the practical progresses observing the critical areas
2. You are required to Mark the practical as the candidate perform the tasks
3. You are required to take video clips at critical points
4. Ensure the candidate has a name tag and registration code at the back and front

OBSERVATION CHECKLIST

Candidate's name & Registration No.			
Assessor's name & Reg. code			
Unit(s) of Competency			
Venue of Assessment			
Date of assessment			
(Indicate the Marks available and Marks obtained respectively. Award Marks appropriately as guided for in the items for evaluation indicated. Give a brief comment where necessary)			
TASK 1: Investigate the relative proportions of solid particles (soil texture) in a soil sample.			
Items to be evaluated:	Marks allocated	Marks obtained	Comments
1. Appropriately Worn PPE - Mask - Flat closed shoes - Lab coat - Disposable hand gloves <i>(Award 1 Mark or zero for each)</i>	4		
2. Prepared the work bench. - Cleaned the working bench - Assembled the apparatus and the materials for the practical. <i>(Award 1 Mark or zero for each)</i>	2		
Sub total	6		
3. Prepared the soil samples - Labelled the beakers well. Placed 50g of each of the soil samples provided in separate beakers. - A - B - C <i>(Award 1 Mark or zero for each)</i>	4		

4. Observed and recorded the general appearance of soil • Appearance (colour) • particle size <i>(Award 1 Mark or 0 for each)</i>	2		
5. Mixed soil with distilled water Wetted the soil slightly with water (it should be moist, not dripping). • A • B • C <i>(Award 1 Mark or 0 for each)</i>	3		
6. Tested for texture and identified the soil type • Pressed the soil particles between the fingers Texture: • A • B • C Soil type • A • B • C <i>(Award 1 Marks or 0 for each)</i>	6		
Sub total	15		
TASK 2: Determine the soil pH			
7. Prepared the soil sample D1 and D2 Broke up the soil gently using a spoon or a mortar and pestle to make it finer for testing (If clumpy). • D1 • D2 Placed 30g of each of the soil samples provided in separate labelled beakers • D1	4		

D2 (Award 1 Mark or 0 for each)			
8. Mixed soil with distilled water - Added distilled water to the soil samples at a ratio of 2:1 (for example, 30 grams of soil and 60 ml of water). - Stirred the mixture thoroughly using a stirring rod to make sure the soil is well moistened and evenly distributed in the water. - Allowed the mixture sit for 30 minutes for the water to absorb some of the soil's pH characteristics (Award 2 Marks for each or 0)	6		
9. Tested the pH: - Dipped a clean pH test strip into the liquid portion of the soil-water mixture. - Ensured that pH test strip doesn't touch the soil itself. - Waited for a few seconds for the color - Compared the color on the strip to the test strips. - Observed the pH color chart and record observation and conclusion <i>pH Interpretation</i> D1: pH is 1-6.5 (acidic) D2: pH is 7.5-14 (alkaline) (Award 2 Marks or 0 for each)	14		
Sub total	24		
TASK 3: Identify the adaptive features of organisms and predict their ecosystems			
12. Observed and identified the features using a hand lens - specimen E: green leaves (chlorophyll), parallel veined, sheath (fibrous roots) - specimen F: wings, antennae, segmented body - specimen G: streamlined body, scales, fins (if fish) - specimen H: succulent, thorny, small leave or absent	8		

(Award 2 Marks for each or 0)			
13. Predicted the ecosystems. - specimen E: terrestrial - specimen F: terrestrial - specimen G: aquatic - specimen H: terrestrial (Award 1 Mark for each or 0)	4		
14. Proper disposal of wastes and storage of apparatus. - Cleaned the working bench and - Properly disposed off the wastes. - Kept the equipment and apparatus - Cleaned the hands before leaving the laboratory. (Award 1 Mark or 0)	4		
Sub total	16		
GRAND TOTAL	61		
ASSESSMENT OUTCOMES The candidate was found to be: ☐ Competent ☐ Not yet competent (Please tick as appropriate) (The candidate is competent if s/he gets 50% or higher)			
Feedback from candidate:			
Feedback to candidate:			
Candidate's signature:	Date:		
Assessor's signature:	Date:		