051106T4APB

APPLIED BIOLOGY LEVEL 6

APB/OS/AB/CR/02/6/A

Carry out Microbiological Techniques

March/April 2025

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

PRACTICAL ASSESSMENT

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 Code			
Assessors Name & Registration Code			
Venue of Assessment			
Date of Assessment			
Items to be Evaluated: *Please award marks as appropriate. Give a brief comment on your observation.*	**Marks Available**	**Marks Obtained**	**Comments**
TASK 1: Carry out inoculation of specimen A using streak plate method.			
1. Wore Personal Protective Equipment • Laboratory coat • Closed shoes • Gloves • Face mask *(Award 1 Mark or 0 each)*	**4**		
2. Sterilized the inoculating loop • Lit the Bunsen burner and adjusted the air valve to set it to a blue flame • Placed the loop over a Bunsen burner flame • Waited until it turned red hot • Allowed the loop to cool in air *(Award 1 mark or 0)*	**4**		
3. Obtained the milk sample • Shook the milk sample vigorously to create a homogenous sample • Dipped the inoculating loop into the milk sample *(Award 1 mark or 0)*	**2**		

4. Carried out inoculation • Lifted the lid of the sterile agar plate slightly with the other hand • Directed the loop with its content into the media • Spread the contents of the inoculating loop over the surface of the agar • Closed the petri-dish's lid/Agar plate • Re-sterilized the inoculating loop by passing it over the Bunsen burner flame • Labelled the petri dish at the bottom using an indelible marker • Placed the four plates upside down in an incubator at 35 ^{O}C *(Award 2 marks or 0)*	**14**		
Sub-total 1	**24**		
TASK 2: Performed gram staining using bacterial culture labelled B and visualize the content of the slide on a compound light microscope			
5. Prepared the slide • Sterilized the inoculating loop over the Bunsen burner flame • Allowed the loop to cool • Scooped a very small amount of bacteria specimen from the bacterial culture labelled B • Spread a thin film of bacterial culture over a clean slide *(Award 1 mark or 0)*	**4**		

6. Heat fixed the slide • Passed the slide through the Bunsen burner flame a few times *(Award 2 marks or 0)*	**2**		
7. Stained with the primary stain • Placed the slide onto a staining rack or held the slide over the sink • Flooded the slide crystal violet stain • Allowed the setup to stand for a minute • Blotted out stain on the edges *(Award 2 marks or 0)*	**8**		
8. Added the mordant • Placed the slide on the staining rack or held over a sink • Added a few drops of iodine to form a complex with crystal violet *(Award 1 mark or 0)*	**2**		
9. Washed with ethanol (Alcohol) – Decolorized • Held the slide over the sink • Washed the slide with alcohol remove the dye from the gram-negative bacteria *(Award 1 mark or 0)*	**2**		
10. Counterstained the slide • Placed the slide on the staining rack • Flooded the slide with safranin (the counter stain) *(Award 2 marks or 0)*	**4**		

11. Visualized the slide under a compound light microscope • Plugged the microscope into socket and powered it on • Aligned the lower power objective lens (x4) with the eye piece. • Placed the stained slide on the stage and secured it with stage clips • Raised the stage towards objective lens using the coarse adjustment knob • Looked through the eye piece to get a rough focus • Switched to x10 and x40 • Focused using the coarse and fine knob • Placed a drop of immersion oil onto the slide • Switched to oil immersion lens • Obtained fine focus using both fine and coarse adjustment knobs. *(Award 2 marks or 0)*	**20**		
12. Results • **Gram-positive bacteria remain purple.** • **Gram-negative bacteria appear pink under a microscope** *(Award 2 marks or 0)*	**2**		
Sub-Total 2	**44**		

Post-Practical Procedure			
13. Disposed of the dirt appropriately *(Award 1 mark or 0)*	**1**		
14. Cleaned the apparatus and equipment *(Award 3 mark or 0)*	**3**		
15. Returned the tools to the rightful place *(Award 1 mark or 0)*	**1**		
16. Handled the equipment, apparatus and supplies properly and with confidence *(Award 3 mark or 0)*	**3**		
Sub-total 3	**8**		
GRAND TOTAL	**76**		

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 the Candidate:
Feedback to the Candidate:
Candidate Signature **Date:** _____ _____
Assessor's Signature **Date** _____ _____