051106T4APB

APPLIED BIOLOGY LEVEL 6

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

Carry Out Microbiological Techniques

Nov/Dec 2024

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

PRACTICAL ASSESSMENT

OBSERVATION CHECKLIST

INSTRUCTIONS TO THE ASSESSOR

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

This paper consists of 5 printed pages

Assessor should check to ascertain that all pages are printed as indicated and that no pages are missing.

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)

Items to be evaluated:	**Marks allocated**	**Marks obtained**	**Comments**
Task one: Preparing for demonstration			
1. **General appearance & grooming of the candidate.** i. Appropriate wearing of mask **(Award 1 mark or 0)** ii. Closed flat shoes **(Award 1 mark or 0)** iii. Wore lab coat properly buttoned **(Award 1 mark or 0)** iv. Wore disposable hand gloves **(Award 1 mark or 0)**	1 1 1 1		
2. **Preparation for the working bench.** i. Clean the working bench **(Award 1 mark or 0)** ii. Assemble the tools and the reagents for the experiment. **(Award 1 mark or 0)** **(Award 1 mark for each correct observation 1x2)**	1 1		
Task two: Demonstrate steps on Carrying out Ziehl Neelsen staining (acid-fast staining) technique			
3. **Step 1: Demonstrate preparation of bacterial smear.** - Sterilized the wire loop. **(Award 2 marks or 0)** - Picked a loopful of the sputum sample aseptically. **(Award 2 marks or 0)**	2 2		

- Placed a small amount of the sputum specimen on a clean glass slide at the center using a wire loop. **(Award 2 marks or 0)** - Using the wire loop, spread the specimen thinly to form a uniform smear. **(Award 2 marks or 0)** - Allowed the smear to air-dry completely. - Passed the slide through a flame 2-3 times, with the smear side facing up. **(Award 2 marks or 0)** - Labeled the slide well. **(Award 2 marks or 0)** - Placed the slide on a staining rack. **(Award 2 marks or 0)**	2 2 2 2 2		
4. **Step 2: Demonstrate Primary Staining.** - Flooded the smear with carbol fuchsin. **(Award 2 marks or 0)** - Gently heated the slide over the flame. Ensuring that the dye does not boil. **(Award 2 marks or 0)** - Allowed the dye to sit on the slide for about 5 minutes and not letting it to dry out. **(Award 2 marks or 0)**	2 2 2		
5. **Step 3: Demonstrate Decolorization.** - Rinsed the slide with water to remove excess carbol fuchsin. (**Award 2 marks or 0**) - Covered the slide with a solution of acid-alcohol for 1 minute. (**Award 2 marks or 0)** - Rinsed the slide gently with water. (**Award 2 marks or 0**)	2 2 2		
6. **Step 4: Demonstrate secondary staining.** - Flooded the slide with methylene blue for 1 minute. **(Award 2 marks or 0)** - Rinsed the slide gently with water. **(Award 2 marks or 0)**	2 2		
7. **Step 5: Demonstrate drying of the slide.** - Allowed the slide to air-dry completely. **(Award 2 marks or 0)** - Bloated off the slide. **(Award 2 marks or 0)**	2 2		

8. **Step 6: Demonstrate microscope examination.** - Covered the stained smear with oil emersion. (**Award 2 marks** or 0) - Placed the slide under the microscope stage. (**Award 2 marks or 0)** - Set the oil emersion objective lens into position. (**Award 2 marks or 0)** - Switched on the microscope to illuminate the slide. (**Award 2 marks or 0**) - Observed the slide and recoded the observation. (**Award 2 marks or 0)**	2 2 2 2 2		
9. **Step 7: Records the function of each of the steps used in staining.** - Primary Staining step**:** Carbol fuchsin used is lipid-soluble and binds to the cell wall of acid-fast bacteria. **(Award 2 marks or 0)** - Decolorization step: The acid-alcohol solution decolorizes the smear, removing the carbol fuchsin from non-acid-fast bacteria. Acid-fast bacteria retain the red dye due to their waxy cell wall structure. **(Award 2 marks or 0)** - Counterstaining step: a counterstain such as methylene blue or brilliant green. This dye stains the now colorless non-acid-fast bacteria and background. **(Award 2 marks or 0)**	2 2 2		
10. **Submits the results.** i. Neatness. **(Award 1 mark or 0)** ii. Evidence work done. - Labelled slide with stained sample **(Award 1 mark or 0)** iii. Cleaned the working bench and properly disposed the wastes. **(Award 1 mark or 0)** iv. Cleaned the hands before leaving the laboratory. **(Award 1 mark or 0)**	1 1 1 1		
TOTAL	**62**		

ASSESMENT 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:	

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