

073206T4CHE

CHEMICAL ENGINEERING LEVEL 6

ENG/OS/CE/CR/07/6/A

Audit Production Process

NOV/DEC 2024



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

Obse

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INSTRUCTIONS TO THE ASSESSOR

1. You are required to mark the practical as the candidate performs 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.
4. Ensure at all times that the candidate is performing tasks in a safe environment.

This guide consists of FIVE (5) printed pages. Assessor should check the guide to ascertain that all the pages are printed as indicated and that no questions or answers are missing.

Candidate's Name			
Candidate's Registration No.			
Assessor's			
Unit(s) of Competency	Audit Production Process		
Venue of assessment			
Date of assessment			
	Marks available	Marks obtained	Comments
Preliminaries: Items to be evaluated: <i>(Award appropriate marks for each item evaluated)</i>			
Wore Personal Protective Equipment			
• Dustcoat/Overall	1		
• Safety shoes	1		
• Gloves	1		
Sub total	3		
TASK 1: Auditing bottoms of distillation columns			
a) Took the pH of the 3 samples <i>(Award 1 mark each per sample)</i>	3		
b) Took temperature readings of the samples <i>(Award 1 mark each per sample)</i>	3		
c) Measured the specific gravity of the sample A			
– Weighed the specific gravity bottle accurately	1		
– Filled the specific gravity bottle with 25 ml of the sample solution	1		
– Inserted the stopper, removed the spill-over solution with a tissue paper and weighed.	1		
– Transferred the solution back to the volumetric flask, cleaned and filled the specific gravity bottle with	1		

distilled water and weighed as done for each sample. (Award 1 mark for each step done correctly) – Calculated the specific gravity using the formula given (Award 1 mark for each sample correctly calculated. Sample A ≈ 1 ; sample B < 1; sample C < 1 and also less than sample B)	3		
d) Repeated the procedure for the other samples, B and C	2		
e) Read the alcohol % values from the data table provided	3		
(Award 1 mark each for the correct alcohol %. Reading should correspond to about the actual alcohol % of the samples A, B and C as 0%, 5%, 10% respectively)			
f) Recorded all the values in the table	1		
g) Selected the correct sample confor standard given	1		
(Award 1 mark for sample B selected)			
h) Carefully discarded the used samples and cleaned the work place	2		
(Award 1 mark for discarding the used sample and 1 mark for cleaning the work area)			
Sub- Total	22		
TASK 2: Determined capacity of small pump			
a) Filled the suction side tank to $\frac{3}{4}$ full capacity	1		
b) Carefully primed the pump following the correct procedure			
– Primed the pump by • Opened the suction valve and allowed water to flow into the pump. • Opened the relief valve (to remove line air) • Closed the discharge valve	3		
(Award 1 mark for each correct step)			
c) Switched on the pump	1		

d) Slowly opened discharge as the stop watch was started (Award 1 mark each for slowly opening valve and 1 mark for starting the watch)	2		
e) Ran the pump for 10 seconds and collected the water into the discharge tank.	1		
f) Switched off the pump following the correct procedure – Closed the suction valve – Switched off the power – Closed the discharge valve (Award 1 mark for each correct step)	3		
g) Drained the tank completely, measured the volume of water pumped into the discharge tank and recorded in the table. (Award 1 mark for draining, 1mark for measuring volume and 1 mark for recording in the	3		
h) Refilled the suction tank to $\frac{3}{4}$ full c (Award 1 mark for refilling)	1		
i) Repeated the procedure and ran the pump for 20 seconds (Award 1 mark for repeating procedure and 1 mark for running the pump for 20 seconds)	2		
j) Measured the volume of water pumped into the discharge tank and recorded in the table (Award 1 mark for measuring the volume and 1 mark for recording the value)	2		
k) Calculate the capacity of the pump in litres per minute $\text{Capacity in litres/min} = \frac{\text{volume of dischrge water} \times 60}{\text{time (s)}}$ Average Capacity = average of sample 1 and sample 2 (Award 3 marks for the correct method and 1 mark for the correct answer)	4		
l) Cleaned and rearranged the work area	2		

Sub total	25		
GRAND TOTAL	50		
The candidate was found to be Competent ☐ Not yet competent ☐ <i>Please tick as appropriate</i> <i>The Candidate is competent if He/She gets 50% items of evaluation correct</i>			
Feedback from the candidate			
Feedback to the candidate			
Candidates Signature	Date		
Assessors Signature	Date		

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