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071605T4AMEM

AGRICULTURAL MACHINERY & EQUIPMENT MECHATRONICS LEVEL 5

ENG/OS/AME/CR/4/5/A

Repair Agricultural Mechatronics Machinery and Equipment

Nov/Dec 2024

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

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PRACTICAL ASSESSMENT

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: DIAGNOSE THE TRACTOR'S STARTER MOTOR			
1. Wore PPEs correctly • Safety boots • Gloves • Overall • Eye shield	4		

(Award 1 mark for each PPE or zero mark)			
2. Performed visual inspection and gave observations • Inspected the battery for corrosion, damage or loose connection • Tested the battery voltage using a multimeter • Checked wiring for signs of wear or damage *(Award 1mark for each or zero mark)*	3		
3. Tested battery load • Used battery tester to perform a load test *(Award 1mark for each or zero mark)*	1		
4. Tested starter circuit • Checked the voltage at the starter motor when ignition is engaged *(Award 1mark for each or zero mark)*	1		
5. Measured the output voltage of the alternator with the engine running • Tested the voltage output using a voltmeter (should be between 13.8 V to 14.5 V) *(Award 1mark for each or zero mark)*	1		
6. Tested the solenoid switch for continuity • Used a multimeter to check for continuity across terminals when the ignition switch is engaged • Verified that there is no continuity when the ignition is off *(Award 2 marks for each or zero mark)*	4		

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7. Removed the starter motor • Removed starter motor as stipulated per the service manual *(Award 2 marks or zero mark)*	2		
Sub-Total 1	**16**		
TASK 2: SERVICE THE TRACTOR'S STARTER MOTOR			
8. Tested the rotor and plunger • Connected current to the terminals • Observed the rotor if it is rotating • Observed plunger magnetization and demagnetization *(Award 2 marks for each or zero mark)*	6		
9. Cleaned the armature • Dismantled the starter motor partially • Cleaned the armature using emery cloth • Observe the brushes for signs of wear or damage *(Award 2 marks for each or zero mark)*	6		
10. Replaced brushes of the starter motor • Striped off brushes using soldering gun • Removed metallic chips from the soldered surface • Soldered new brushes *(Award 2 marks for each or zero mark)*	6		
11. Restored back the starter motor • Aligned the starter motor mounting for smooth operation • Verified that the solenoid is correctly engaging the starter motor when the ignition is engaged	4		

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(Award 2 marks for each or zero mark)			
12. Recorded repair data • Documented all findings, test results and actions taken during diagnosis and repair *(Award 1 mark or zero mark)*	1		
13. Cleaned workshop area • Removed all dirt and placed in the dust pin • Cleaned tools and equipment • Stored tools and equipment *(Award 1 mark for each or zero mark)*	3		
Sub-Total 2	**26**		
GRAND TOTAL	**42**		

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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**
_____	_____

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