Government of Western Australia
North Metropolitan TAFE

Portfolio Assessment tool part 3

Qualification national code and title	**UEE30811 - Certificate III in Electrotechnology: Electrician**
Unit/s national code/s and title/s	**UEENEEG033A – Solve problems in single and three phase low voltage electrical apparatus and circuits.**

Portfolio Assessment **Solve problems in single and three phase low voltage electrical apparatus and circuits G033A part 3**			
Lecturer Name			
Student Name			
Student ID Number			
Telephone Contact Number		**Email:**	

By completing and submitting this signed form to my lecturer, I am stating that:

a. The attached submission is completely my own work
b. I understand a copy of my assessment will be kept by the NMTAFE for their records
c. I understand my assessment may be selected for use in the NMTAFE's validation and audit process to ensure student assessment meets requirements

Student Signature		**Date**	
Due Date		**Time**	

Assessment Result Satisfactory / Not Yet Satisfactory *(please circle)* **Date:**_____

In order to satisfy requirements for this assessment, you need to complete the following:

Feedback to student:

Assessor please note: Where verbal clarification has been sought from a student to gather additional assessment evidence from an assessment item, question/s and response/s must be recorded, signed, and dated by the assessor, against the relevant assessment item/s.

Student Feedback

Feedback from student:

Lecturer Signature: _____ **Student Signature:** _____

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Assessment type (☑):

☐ Questioning (Oral/Written)
☐ Practical Demonstration
☐ 3rd Party Report
☑ Other – Project/Portfolio (*please specify)*

Assessment Resources:

Students will need access to:

Writing Instruments
AS/NZS 3000:2018

Assessment Instructions:

Assessor instructions

1. Student to answer all portfolio question by due date.

2. The assessor is to sign and record the students result as ***satisfactory*** or ***not yet satisfactory*** at the end of the assessment.

Student instructions

1. *Complete all portfolio questions by the due date given to you by your lecturer.*

2. ***Failure to submit by due date will result in a re-enrol for this unit.***

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Cells and Batteries

1. How should batteries be disposed of and what are the precautions when doing so?

2. Describe the main difference between a cell and a battery

3. Describe the main difference between a PRIMARY and SECONDARY cell or battery.

4. Explain the effect of “internal resistance” of a “Lead-acid battery?

5. List hazards when handling or working with rechargeable batteries?

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6. Name the device used when checking the specific gravity of the electrolyte in a Lead-Acid battery?

_____

7. List 4 common techniques for testing a battery

_____

_____

_____

_____

8. State the advantages of Nickel Metal-Hydride and Lithium-Ion cells over NiCad cells

_____

_____

_____

_____

9. What are the risks when charging Lead-Acid batteries? What measures must be taken when batteries are being charged in an enclosed space?

_____

_____

_____

10. Complete the following table for primary cells

Cell Type	Nominal Cell Voltage
Carbon-Zinc	
Alkaline	
Lithium	
Mercury	
Silver oxide	

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11. Complete the following table for secondary cells

Cell Type	Nominal Cell Voltage
Lead Acid	
Nickel Cadmium	
Nickel-metal-hydride	
Lithium-ion (Cobalt)	

12. What is an Uninterruptable Power Supply (UPS) and describe its purpose and function?

Smoke Detectors

13. Name the only type of smoke-detector alarm that can be installed in a domestic installation?

14. What kind of fire is the “Photoelectric” type of smoke-detector alarm most suited to detect?

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15. What kind of fire is the “ionisation” type of smoke-detector alarm most suited to detect?

_____

16. How can domestic smoke-detectors be connected to warn others in different areas of a domestic dwelling?

_____

17. With reference to ‘AS/NZS 3000:2018’:

What are the requirements for electrical services for the supply systems for safety services, e.g. fire pumps? (hint section 7)

_____

_____

_____

_____

_____

Provide the AS/NZS3000 clause number _____

18. When installing domestic smoke-detectors, what consideration must be taken with regards to their position on a ceiling or wall?

_____

_____

_____

_____

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Alternative Supplies

19. List six types of alternative power supplies:

20. Explain how power is obtained using geothermal energy.

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Installations

21. Draw the **circuit** diagram of a light fitting controlled by a two-way switching arrangement.

22. Draw the **wiring** diagram of a light fitting controlled by a three-way switching arrangement.
Use the looping at the light method

END OF ASSESSMENT