UEE22020 Certificate II in Electrotechnology
TAFE Queensland Gold Coast

Maths Self-Assessment for School Students

Instructions: Please Read Carefully

This self-assessment tool will help you evaluate your current maths skills and give you an indication of the level of maths needed for the UEE22020 Certificate II in Electrotechnology with TAFE Queensland Gold Coast.

There are twelve multiple-choice questions in total, arranged into the following six topics:

- Transposition
- Pythagoras' Theorem
- Trigonometry
- Exponents
- Area
- Problem-solving

Use a calculator with the Exponent function (EXP or $x10^x$) and the PI function (π) to complete this assessment.

Circle the correct option (a-e) to answer each question.

Self-Assessment Checklist

The Self-Assessment Checklist on page 8 will help you decide whether the maths component of an electrical course is the right fit for your interests and skills. First, answer the questions on pages 2 to 7. Next, check your answers to the twelve questions using the separate Answer Sheet. Finally, if you answered at least one question in a topic correctly, place a tick next to the topic on the Self-Assessment Checklist (page 8).

If you are not confident with any of the maths in this self-assessment but are keen to enrol in the Certificate II in Electrotechnology, please contact your school's Guidance or Industry Liaison Officer for further information and course preparation options.

Questions - Transposition

Circle one answer from options a-e for each question

Question 1	$I = \frac{V}{R}$	Find V.

a) $V = IR$

b) $V = \frac{I}{R}$

c) $V = \frac{R}{I}$

d) $V = I + R$

e) other

Question 2	$P = I^2R$	Find I.

a) $I = \frac{P}{R}$

b) $I = PR$

c) $I = \sqrt{\frac{P}{R}}$

d) $I = \sqrt{\frac{R}{P}}$

e) other

Questions – Pythagoras' Theorem

Circle one answer from options a-e for each question

Question 3 If a = 3 and b = 4 what is the value of c?

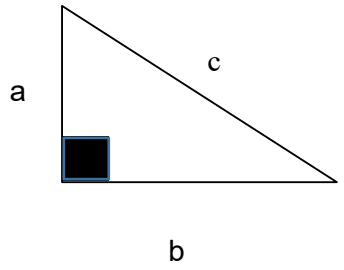
a) 3

b) 5

c) 12

d) 7

e) other



Equation: $c = \sqrt{a^2 + b^2}$

Question 4 If a = 6 and c = 10 what is the value of b?

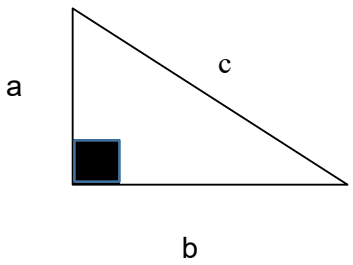
a) 4

b) 2.8

c) 6

d) 8

e) other



Equation: $b = \sqrt{c^2 - a^2}$

Questions – Trigonometry

Circle one answer from options a-e for each question

Question 5	Find the value of Cosθ.

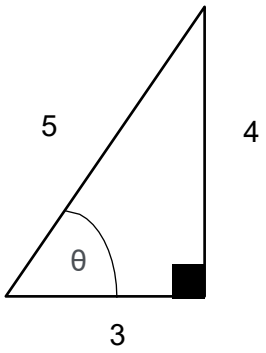
a) $\text{Cos}\theta = \frac{4}{5}$

b) $\text{Cos}\theta = \frac{3}{4}$

c) $\text{Cos}\theta = \frac{5}{3}$

d) $\text{Cos}\theta = \frac{3}{5}$

e) other



$$\text{Cos}\theta = \frac{\text{Adjacent}}{\text{Hypotenuse}}$$

Question 6	Find the value of Sinθ.

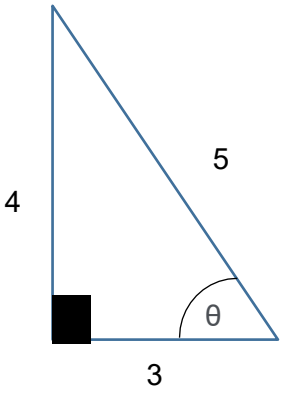
a) $\text{Sin}\theta = \frac{4}{5}$

b) $\text{Sin}\theta = \frac{3}{4}$

c) $\text{Sin}\theta = \frac{5}{3}$

d) $\text{Sin}\theta = \frac{3}{5}$

e) other



$$\text{Sin}\theta = \frac{\text{Opposite}}{\text{Hypotenuse}}$$

Questions – Exponents

Circle one answer from options a-e for each question

Question 7	0.001 can be written as:

a) 1×10^{3}

b) 1×10^{-3}

c) 1×10^{4}

d) 1×10^{-4}

e) other

Question 8	1000 can be written as:

a) 1×10^{6}

b) 1×10^{4}

c) 1×10^{-3}

d) 1×10^{3}

e) other

Questions – Area

Circle one answer from options a-e for each question

Question 9 What is the area of the circle in mm^2?

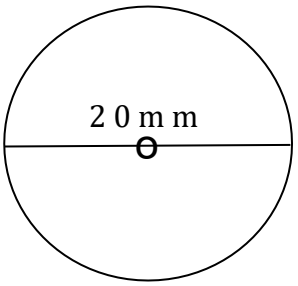
a) $314\ mm^2$

b) $3.14\ mm^2$

c) $15.7\ mm^2$

d) $0.0157\ mm^2$

e) other



O is the centre of the circle

Equation: $A = \frac{\pi d^2}{4}$

Question 10 What is the area of the circle in mm^2?

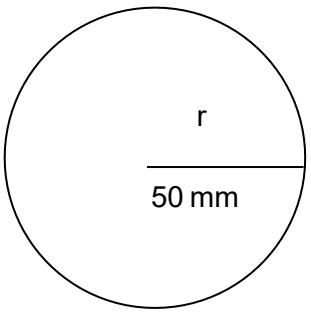
a) $7.853 \times 10^{-3}\ mm^2$

b) $0.0157\ mm^2$

c) $7853.98\ mm^2$

d) $0.157\ mm^2$

e) other



Equation: $A = \pi r^2$

Questions – Problem-solving

Circle one answer from options a-e for each question

Question 11	Calculate the value of Resistance (R) measured in Ohms (Ω).		
Where:	$p = 1.67 \times 10^{-7}$	$l = 10\text{m}$	$A = 706.8 \times 10^{-6}$

Equation: $R = \frac{Pl}{A}$

a) $1.18 \times 10^{-9}\ \Omega$

b) $2.36 \times 10^{-3}\ \Omega$

c) $1418.27\ \Omega$

d) $42323.35\ \Omega$

e) other

Question 12	An electrical store offers 15% off the price of a set of screwdrivers. The price of a set is $199 before discount, what is the cost after the discount?

a) $198.85

b) $169.15

c) $199.15

d) $29.85

e) other

Self-Assessment Checklist

Topic	***Tick in the space below if you got at least one answer correct in the topic***
Transposition (page 2)	
Pythagoras' Theorem (page 3)	
Trigonometry (page 4)	
Exponents (page 5)	
Area (page 6)	
Problem-Solving (page7)	

End of Assessment