Access to HE Diploma
Assignment Brief (Form AP3)

Provider name:	Sunshine College
Access Diploma title:	Science
Unit title and code:	Physics RC1/3/AA/04G
Assignment title and number, e.g. 1 of 1 or 1 of 2 etc:	4 of 4 Practical activities involving electric circuits
Assessor name:	John Smith

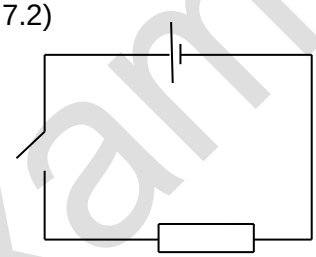
Assignment briefing and mapping to unit:

This assignment consists of a series of practical activities which involve constructing electrical circuits from both written descriptions and circuit diagrams. The circuits are then analysed utilising ammeters, voltmeters and an oscilloscope.

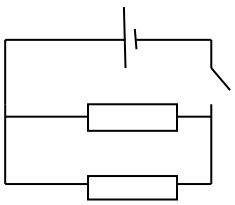
(i) Using appropriate equipment, in turn, construct each of the following electrical circuits (AC 6.1):

(a) a series circuit consisting of a d.c. power supply, a diode and an indicator bulb
(b) a series circuit consisting of a d.c power supply, a variable resistor and an indicator bulb
(c) a parallel circuit consisting of a d.c. power supply and two indicator bulbs in parallel
(d) a parallel circuit consisting of a d.c. power supply and two indicator bulbs (in series) in parallel with a diode

(e) (AC 7.2)



(f)



(ii) for each circuit:
(a) draw a labelled circuit diagram
(b) using appropriate apparatus, measure the current passing through each component and the potential difference across each component. Indicate these values on your circuit diagram. (AC 7.1, 7.3)

(iii) Construct a series circuit consisting of an a.c. power supply, a resistor, an indicator bulb and a diode. Using an oscilloscope, measure the potential difference across the resistor. Sketch the resulting trace. Then calculate the frequency of the a.c supply and the peak-to-peak p.d. from the oscilloscope trace. (AC 7.4)

Assignment hand out date:	
Assignment submission deadline date:	
Draft(s) permitted: Yes/No *If yes, include deadline date(s) for draft(s)*	No

Mapping to Unit This assignment covers the following learning outcomes & assessment criteria.
LO 6 Be able to identify a range of electrical components. AC 6.1 Recognise, and name, common electronic components and their associated circuit symbols.
LO 7 Be able to employ practical circuits to investigate current AC 7.1 Analyse given circuit diagrams (both series and parallel) involving no more than ten electrical components AC 7.2 Demonstrate series and parallel circuits from given circuit diagrams AC 7.3 Utilise ammeters and voltmeters with appropriate scales to measure current and potential difference (p.d.) using units and S.I. prefixes appropriate to the readings AC 7.4 Calculate frequency and peak-to-peak p.d. from an oscilloscope trace.

Grading information for this assignment

Grade descriptor:	**1a – Understanding of the subject**
The student, student's work or performance:	
For a pass:	Meet the assessment criteria to achieve the learning outcomes for the unit
For Merit:	a demonstrates a **very good** grasp of the relevant knowledge base Contextualisation:- Most circuit diagrams are correct with most components correctly labelled.
For distinction:	a demonstrates an **excellent** grasp of the relevant knowledge base Contextualisation:- All circuit diagrams are correct with all components correctly labelled.
Additional Guidance notes	

Grade descriptor:	**3a, b, c – Application of skills**
The student, student's work or performance:	
For a pass:	Meet the assessment criteria to achieve the learning outcomes for the unit
For Merit:	a. **generally** selects appropriate • methods and b. applies appropriate (selected or given) • techniques with c. **very good** levels of • accuracy

	Contextualisation:- Most values of variables (current, potential difference) are correct, utilising correct units and an appropriate level of significant figures.
For distinction:	a. **consistently** selects appropriate • methods and b. applies appropriate (selected or given) • techniques with c. **excellent** levels of • accuracy Contextualisation:- All values of variables (current, potential difference) are correct, utilising correct units and an appropriate level of significant figures.
Additional Guidance notes	Practical work should be carried out in a safe manner following established methods.

Grade descriptor:	**7c: Quality**
The student, student's work or performance:	
For a pass:	Meet the assessment criteria to achieve the learning outcomes for the unit
For Merit:	c. taken as a whole, demonstrates a **very good** response to the demands of the brief/assignment Contextualisation:- You will correctly create most circuits, identifying most components and produce clear circuit diagrams.
For distinction:	c. taken as a whole, demonstrates an **excellent** response to the demands of the brief/assignment Contextualisation:- You will correctly create all circuits, identifying all components, take appropriate readings from electrical instruments and produce clear circuit diagrams. Your work will be presented in a clear, and logical format.
Additional Guidance notes	Practical work should be carried out in a safe manner following established methods. It is not sufficient for you to obtain correct results to numerical questions; you must also state clearly the principles involved and their bearing on the situation. You should quote numerical answers to a number of significant figures appropriate to the situation.

Declaration: I confirm that this assignment is my best attempt and all my own work and that it conforms to the course policy on plagiarism.		
Print name:	Student signature:	Date:
