THE PIQUE LAB LEARNING CENTRE

Secondary School Science Programme

S2 SCIENCE WA3 CRASH COURSE

Answer Booklet

Name: _____

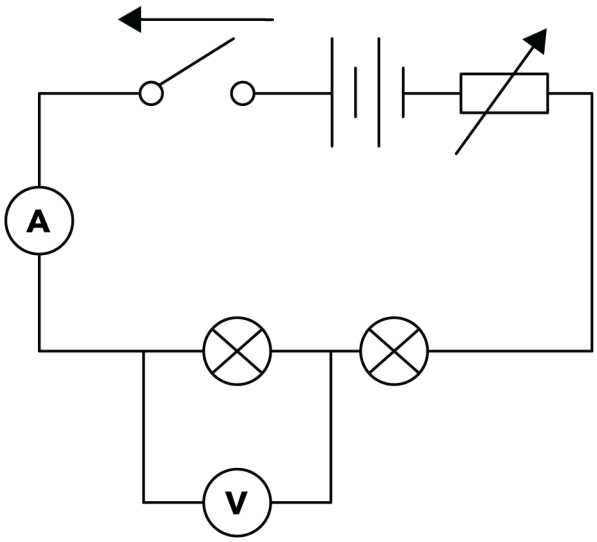
Class: _____

TOPICS COVERED

Topic	Title	Page
1	Electrical Systems	1 – 2

S2 SCIENCE WA3 CRASH COURSE

TOPIC: ELECTRICAL SYSTEMS

Qn	Answer
Q1	3
Q2	3
Q3	1
Q4	3
Q5	1
Q6	2
Q7	3
Q8	4
Q9	4
Q10	4
Q11a	
b	The other light bulb will not light up as the circuit is now open.
ci	2.33 kWh
cii	$0.75
Q12a	2 V
b	0.10 A
c	The resistance of resistor Z is higher than resistor Y, as lesser current flows through resistor Z than resistor Y.
d	Total current flowing in the circuit increases as the effective resistance decreases when a resistor is added in parallel to resistor Y.

Q13a	Any two of the following: • The Earth wire is connected to the N pin instead of the E pin. • The neutral wire is connected to the E pin instead of the N pin. • The fuse is missing.
b	30 Ω
c	Any value above 8 A
d	An electrical fault results in the live wire touching the metal casing, which is now at high voltage. The Earth wire provides an alternative path of low electrical resistance for the large current to flow from the live wire into the Earth instead of through the user, preventing electric shock. When the current exceeds the fuse rating, the wire in the fuse melts. The blown fuse creates a gap in the circuit, resulting in an open circuit that stops electric current from flowing through the circuit. Thus, the fuse can prevent excessive current flow, which protect appliances from becoming damaged and prevents an electrical fire.