

UEECD0046 – Solve Problems in single path circuits.

Revision

1. Give an example of Static Electricity.

2. List 3 forms of Renewable Energy.
 1. _____
 2. _____
 3. _____

3. What is a Load when referring to an Electrical Supply?

4. What is the purpose of a Fuse/Circuit Breaker in an electrical circuit?

5. What is the purpose of a Switch in an electrical circuit?

6. How many coulombs per second equal 1 Ampere?

7. Draw a circuit containing a Power Supply, a Load, a Fuse, a Switch and Conductors.

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8. How much current would flow in an Open Circuit?

9. How much current would flow in a Short Circuit?

10. Convert the following values:

3G Ω	kΩ
300 μA	mA
0.0065 W	μW
3.3 kV	V
27mA	A

11. Calculate the Resistance in a circuit with a 100V Supply and a Current of 8A.

12. Calculate the Current in a circuit with a 24V Supply and a Resistance of 33 Ω .

13. Calculate the Voltage of a circuit with a Resistance of 10k Ω and a current of 3mA.

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14. Draw a graph showing the relationship between Voltage and Current in a DC circuit.

15. How much Force is required to lift a toolbox weighing 15kg?

16. Calculate the Work done if a cable drum weighing 20kg was lifted through a vertical distance of 2 metres?

17. Calculate the Power needed to climb a 6 metre ladder in 30 seconds if you weigh 65kg and are carrying a tool bag weighing 5kg?

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18. How much Power is dissipated in a circuit with an applied Voltage of 50V and a Resistance of 25Ω?

19. How much Power is dissipated in a circuit with an applied Voltage of 150V and a Current of 3A?

20. How much Power is dissipated in a circuit with a Resistance of 30kΩ and a Current of 50mA?

21. Can a Resistor with a Power rating of 5W and a value of 2kΩ be installed in a circuit with an applied Voltage of 120V and operate correctly?

22. What type of meter is used to measure the Power in an electrical circuit?

23. List four effects of Electric Current on the Human Body.

1. _____

2. _____

3. _____

4. _____

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24. List six methods of producing an EMF.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

25. What two effects occur when Current passes through an Electrical Conductor?

1. _____
2. _____

26. State a use for each of the effects in Q25.

1. _____
2. _____

27. What is Galvanic Corrosion and how is it produced?

28. According to the AS/NZS 3000:2018, what are the two methods of Protection from Overcurrent?

- a)
- b)

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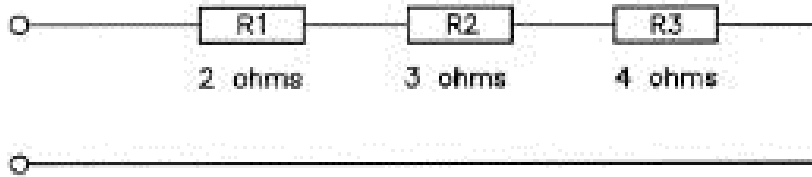
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29. Calculate the Input Power of an Electric Motor that has an Output Power of 7kW with an Efficiency of 80%.
30. What is the difference between a Primary Cell and a Secondary Cell?
31. A 4 band Carbon Resistor has a colour coding of Orange, Violet, Brown and Silver and when measured with an Ohmmeter has a Resistance of 327Ω .
Is this Resistor within Tolerance?
32. Give an example of where a series circuit is used in the Electrical Industry.
33. What is Kirchhoff's Voltage Law for Series DC circuits?

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34. Calculate the volt drop across each resistor, in the following circuit, with an applied voltage of 5.4V



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35. Calculate the total Resistance, total Current and the Power dissipated by each resistor, in the following circuit, with an applied Voltage of 45V.

