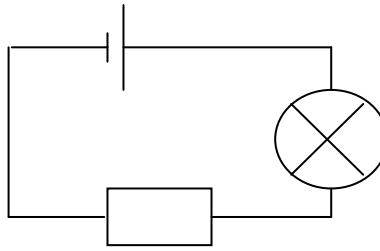


Using electricity revision questions

The credit questions are in ----- ***bold and italics***

1. What type of energy is supplied from a mains plug?
2. Give typical power rating for these appliances: television
 hair dryer
 table lamp
3. When choosing a flex for an appliance what 2 factors have to be considered?
4. Why is there a fuse in plug?
5. Why is there a fuse in the mains fuse box?
6. What are the names for the three connections in a plug?
7. What colour wire should be connected to each of them?
8. Can a current flow through a person?
9. Why is an earth wire connected to some appliances?
10. What part of the appliance is the earth wire connected to?
11. Draw the double insulation symbol.
- 12. Explain how an earth wire works.***
- 13 Why are a fuse and switch always connected in the live wire?***
14. What is an electric current and what way does it flow?
15. What are the 2 types of current?
16. Which type of current is supplied by the mains and by a battery?
17. What are the mains frequency and voltage?
18. Draw the symbol for each of these: battery
 fuse
 lamp
 switch
 resistor
 capacitor
 diode
 variable resistor
19. Why do some materials conduct whilst others can't?
20. What are the units of **charge**, current and voltage?
- 21. What is different about the stated value for the mains and the peak voltage?***
- 22. If the current to a kettle is 8A how much charge flows to it in 4 minutes?***
- 23. When the voltage on a power supply is increased what is different about the charges flowing around the circuit?***
24. If the resistance of a circuit is increased how does this effect the circuit?
25. What is the unit of resistance?

26. Draw this circuit with a voltmeter and ammeter connected to find the resistance of the lamp.



27. A mains appliance needs a current of 500mA what is its resistance?
28. Name 2 appliances that would include a variable resistor.
29. What happens to a wire when a current flows through it?
30. Can you name three appliances which change electrical energy into heat?
31. What are the units of power and energy?
32. What is the relationship between power energy and time?
33. If a torch converts 500J of electrical energy in 1minute what is its power rating?
34. A mains appliance has an operating current of 2.5A what is its power rating?
35. Why do tube lamps offer better value for money even though they are more expensive to buy?
- 36. How can resistance be calculated from voltage and current? What has to be constant?**
- 37. If the power rating of a mains projector is 250W what is its resistance?**
- 38. Can you explain why I^2R is equal to VI .**
39. Can you think of an appliance that has 2 switches connected in series?
40. What is the rule for currents in a series circuit?
41. What is the rule for currents in a parallel circuit?
42. What is the rule for voltage in a series circuit?
43. What is the rule for currents in a parallel circuit?
44. What are the 2 types of faults you investigated?
45. What do we measure to identify these faults?
46. What is used to build a simple continuity tester?
47. What type of fault do continuity testers find?
- 48. Draw a simple diagram to show how the head and side light on a car are connected.**
- 49. Calculate the total resistance when 10Ω , 20Ω and 50Ω resistors are connected in series?**
- 50. Calculate the total resistance when 10Ω , 20Ω and 50Ω resistors are connected in parallel?**
51. What type of circuit is used to connect lights in your home?
52. What type of circuit is used to connect sockets in your home?
53. What can circuit breakers be used instead of?

54. If a cooker is rated at 6KW and is on for 3.5 hours how many kWh does it consume?
55. What is the kWh a unit of?
- 56. Give 2 advantages of a ring circuit.**
- 57. Give 2 differences between a lighting and ring circuit.**
- 58. Why are circuit breakers better than fuses?**
- 59. Show why 2kWh is equal to 7.2MJ.**
60. What are the parts of an electric motor?
61. What do you find in the space around a wire carrying a current?
62. Name 2 things that use electromagnets to make them work?
63. What will a wire try to do if it has current in it and it is near a magnet?
- 64. What can be done to make a wire move in the opposite direction?**
- 65. Why does an electric motor spin?**
- 66. What do these parts do in a commercial motor:**
- carbon brushes*
 - rotating coils*
 - field coils*
 - multi-segment commutators*