Electricity numerical class tenth

1. Two wires A and B have equal length and equal resistance. Which one is thicker? Given that rho A > rho B
2. A wire of resistancen10Ω is bent in form of closed circle. What is the effective resistance between the 2 points at the ends of any diameter of the circle?
3. Two resistors are connected in parallel and one is in series and the total resistance is 7 Ω. Each resistor in parallel is 10 Ω. Fins the value which is in the series.
4. A set of n identical resistors, each of resistance R Ω when connected in series have an effective resistance X Ω and when connected in parallel, effective resistance is Y Ω. Find the ratio between R, X and Y.
5. When 2 resistors are joined in series, the equivalent R is 90 Ω. When the same resistors are in parallel, the equivalent R is 20 Ω. Calculate the R of two resistors.
6. A resistor of 5 Ω resistance in series is connected with a parallel combination of a number of resistors each of 6 Ω. If the total resistances of the combination is 7 Ω how many resistors are in series?
7. Given n resistors each of resistance R. how will you combine them to get the maximum and minimum effective resistance? What is the ratio of the maximum to the minimum resistance?
8. A wire of 16 Ω resistance stretched so that its length becomes 4 times and area reduces by factors of 4. Find the new resistance of the wire.
9. Draw a IV graph where T1 >T2.
10. An electric iron consumes energy at the rate of 840 W when heating is at the maximum rate and 360 W when the heating is at the minimum. The voltage is 220V. what are the current and the resistance in each case?
11. Calculate the total power of 5 fans if each of them draws a current of 0.8 A at a potential difference is 220V.
12. A 6V 12Watt lamp is connected in series with a source of 12V supply. Calculate the value of the resistance R for the proper working of the lamp. What is the current flowing through the circuit?
13. A torch bulb is rated at 2.5 V and 750mA. Calculate its power, resistance, energy consumed if the bulb is lighted for 4 hours.
14. Find the equivalent resistance of 1 ohm and 10^8ohm when connected in parallel

15. Find the ratio of power used in the 2ohm resistance in each of the case
    a) A 6V battery in series with 1 ohm and 2ohm resistors
    b) A 4 V battery in parallel with 12 ohm and 2ohm resistors
16. An electric heater of resistance 8 ohm draws 15 A from the service mains for 2 hours.
17. Two bulbs od 100W, one fan of 200W, one fridge of 1000 W are working for 10 hours. Calculate the total bill if one unit cost Rs 4.
18. N electrons flow through a cross section of a conductor in time t. if the charge on an electron is e write an expression
19. If the current is 0.2 A find the amount of charge that will pass through the cross section in 30 sec. how many electrons will flow?
20. The voltage between the terminals of an electric heater is 60 V when it draws a current of 4 A from a source. What current will the heater draw if the potential difference is 120 V.