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## Class X – PHYSICS

- Q1. Two electric bulbs are rated at 220V – 100W and 220 V-60W. Which one of these has greater resistance and why?
- Q2. The applied potential difference across a given resistance is altered so that heat produces per second increases by a factor of 9. By what factor does the applied potential difference change?
- Q3. How much charge flows through a 250V, 1000W heater in one minute?
- Q4. Number of electric lamps designed to be used on a 220V electric supply are rated 10W each. Calculate the number of lamps that can be connected in parallel to each other across the two wires of 220V line if the maximum allowable current is 5 A.
- Q5. A household uses the following electrical appliances.
- (i) Refrigerator of rating 400W for ten hours each day.
  - (ii) Two electric fans of rating 80 W each for twelve hours each day.
  - (iii) Six electric tubes of rating 18 W each for 6 hours each day.
- Calculate the electricity bill of the household for the month of June if the cost per unit of electric energy is Rs 300
- Q6. What is the safest voltage you can safely put across  $98\Omega$ , 0.5 W resistor?
- Q7. Two wires A & B of the same material and having same length, have their cross sectional areas in the ratio 1:4. What would be the ratio of heat produced in these wires when the same voltage is applied across each?
- Q8. A toaster produces more heat than a light bulb when connected in parallel to the 220 V mains. Which has a greater resistance?
- Q9. The maximum power rating of a  $20\Omega$  resistor is 2 Kilowatt. Can it be connected to a 220 V potential difference supply?
- Q10. Two 120 V light bulbs, one of 25 W and other of 200W were connected in series across a 240 V line. One bulb burnt out almost instantaneously. Which one was burnt and why?