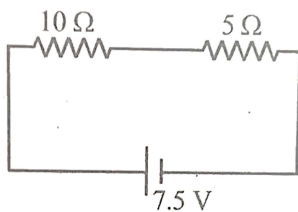


# NEW STANDARD ACADEMY

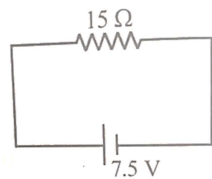
SEMRI KOTHI SUPER MARKET, RAEBARELI

## CLASS 10 (Physics) DPP (Academy)

- Five joule of work is done in moving  $12.5 \times 10^{18}$  electron from one end to other end of conductor. What is the potential difference between the two end of conductor?
- Electric potential at a point in an electric field is 0.5V when charge of 3C was brought from infinity to that point. Calculate the work done.
- The resistance of 1m of nichrome wire is  $6\Omega$  calculate its resistance if its resistance if its length is 70 cm.
- Calculate (a) the equivalent resistance, (b) the electric current, and (c) the potential difference across each resistor in the circuit shown in figure

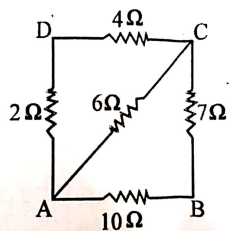


(a)



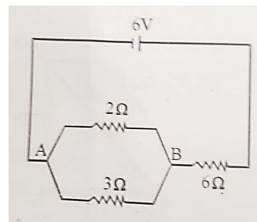
(b)

- Determine the equivalent resistance between points A and B in the following circuits.

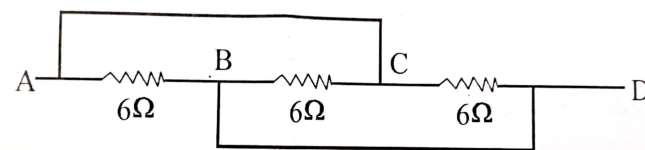


- Given  $n$  resistors each of resistance  $R$ , how will you combine them to get the (i) maximum (ii) minimum effective resistance? What is the ratio of the maximum to minimum resistance?

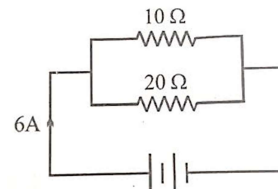
- Determine the value of current in the  $2\Omega$  resistance and the potential difference between A and B in the circuit diagram given



- Find the equivalent resistance between the points A and D of the adjoining circuit diagram.



- Two resistors of resistance  $10\Omega$  and  $20\Omega$  are connected in parallel. A battery supplies 6A of current to the combination, as shown in figure. Calculate the current in each resistor



- A piece of wire of resistance  $R$  is cut into five equal parts. These parts are then connected in parallel. If the equivalent resistance of this combination is  $R'$ , then the ratio  $R/R'$  is:
- Which of the following terms does not represent electrical power in a circuit?
  - $I^2R$
  - $IR^2$
  - $VI$
  - $V^2/R$
- Two conducting wires of the same material and equal lengths and equal diameters are first connected in series and then in parallel in electric circuit. The ratio of the heat produced in series and parallel combinations would be:
- A copper wire has a diameter of 0.5 mm and a resistivity of  $1.6 \times 10^{-6}$  ohm cm. How much of this wire would be required to make a 10 ohm coil? How much does the resistance change if the diameter is doubled?

14. When a 12V battery is connected across an unknown resistor there is a current of 2.5 mA in the circuit find the value of the resistance of the resistor.
15. A battery of 9V is connected in series with resistors of 0.2,0.3,0.4,0.5 and 12. How much current would flow through the 12 resistor?
16. How many  $176\Omega$  resistors (in parallel) are required to carry 5A in 220V line?
17. Show how you would connect three resistors , each of resistance  $6\Omega$ , so that the combination has a resistance of (i)  $9\Omega$  (ii)  $2\Omega$
18. Several electric bulbs designed to be used on a 220 V electric supply line, are rated 10w. How many lamps can be connected in parallel with each other across the two wires of 220 V line if the maximum allowable current is 5A?
19. A hot plate of an electric over connected to a 220V line has two resistance coils A and B each  $24\Omega$  resistance,which may be used separately, in series, or series or in parallel. What are the currents in the three cases?
20. Two lamps one rated 100W at 220V ,and the the other 60W at 220V, are connected in parallel to electric mains supply. What current is drawn from the line if the supply voltage is 220 V?

# NEW STANDARD ACADEMY

SEMRI KOTHI SUPER MARKET, RAEBARELI

CLASS 9 (Physics) DPP (Academy)

1. Find the linear momentum of a cricket ball of mass 250g moving with a velocity of  $72\text{kmh}^{-1}$
2. A force of 1N acts on a body of mass 1g. Calculate the acceleration produced in the body?
3. Calculate the force acting on a body which changes the momentum of body at the rate of  $1\text{kg ms}^{-2}$ .
4. A mass of 5kg is acted upon by a force of 1N. Starting from rest, how much is distance covered by the mass in 10 s?
5. A car of mass 1000kg is moving with a speed of  $36\text{kmh}^{-1}$  on a level road. Calculate the retarding force required to stop the car in a distance of 50 m.
6. A truck starts from rest and rolls down a hill with a constant acceleration. It travels a distance of 400 m in 20s. Find its acceleration. Find the force acting on it if its mass is 7 metric tonnes (Hint: 1 metric tonne =1000 kg)
7. A stone of 1 kg is thrown with a velocity of  $20\text{ms}^{-1}$  across the frozen surface of a lake and comes to rest after travelling a distance of 50m.What is the force of friction between the stone and the ice?
8. A 8000 kg engine pulls a train of 5 wagons ,each of 2000kg along a horizontal track .If the engine exerts a force of 40000 N and the track offers a friction force of 5000 N, then calculate:
  - a) The net accelerating force
  - b) The acceleration of the train and
  - c) The force of wagon 1 on wagon2
9. An automobile vehicle has a mass of 1500kg. What must be the force between the vehicle and the road if the vehicle is to be stopped with a negative acceleration of  $1.7\text{ms}^{-2}$
10. Define the term balanced force.
11. Name the physical quantity on which inertia depends.
12. Define one Newton of force.
13. State newton's third law of motion.

14. What force would be needed to produce an acceleration of  $\text{ms}^{-2}$  on a ball of mass 6 kg?
15. Define force
16. State newton's second law of motion.
17. A moving car engine is turned off and it slowly comes to rest. Is the force acting on it balanced or unbalanced? Name the force.
18. State and explain the law of inertia(or Newton's first law of motion)
19. Define inertia. Name the physical quantity that measures it.
20. What is the momentum of an object of mass  $m$ , moving with velocity  $v$ ?