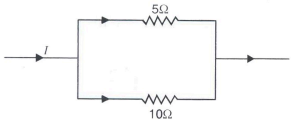
QB365 Student Learing Managemnet System
Exam Name: Pre Quarterly - Practice
Std: 12th Standard - Physics
Chapter: Current Electricity, Moving Charges and Magnetism, Electrostatic Potential and Capacitance, Electric Charges and Fields

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Questions:

5 Marks

1. In the arrangement of resistors shown here, what fraction of I will pass through 5Ω resistor?



2. Calculate the force per unit length on a long straight wire carrying current 4 A due to parallel wire carrying 6 A current. if the distance between the wires is 3 cm.
3. Two metal spheres, one of radius R and the other of radius 2R, both have same surface charge density σ. They are brought in contact and separated. What will be new surface charge densities on them?
4. How can you charge a metal sphere positively without touching it?

3 Marks

5. The potential difference across a potentiometer wire 8m long 2.5V. Calculate the e.m.f of the cell which is balanced by 100 cm long wire.
6. A bar magnet of length 0.1 m has a pole strength of 50 Am.Calculate the magnetic field at distance of 0.2 m from its centre on (a) its axial line and (b) its equatorial line.
7. Is Coulomb's law in electrostatics applicable in all situations?
8. Can two balls having same kind of charge on them attract each other? Explain.
9. A house wiring, supplied with a 220 V supply line is protected by a 9 ampere fuse. Find the maximum number of 60 W bulbs in parallel that can be turned on.
10. (i) How is a toroid different from a solenoid?
    (ii) Use Ampere's circuital law to obtain the magnetic field inside a toroid.
11. An electric dipole with dipole moment 4×10^{-9} C m is aligned at 30° with the direction of a uniform electric field of magnitude 5×10^{4} N/C. Calculate the magnitude of the torque acting on the dipole.
12. What will happen, if the field were not uniform?
13. What do you mean by terminal potential difference of a cell? Under what conditions will the terminal potential difference of a cell be greater than its emf?
14. Eight charged water droplets each of radius 1 mm and charge 10 x 10^{-10} C coalesce to form a single drop. Calculate the potential of the bigger drop.

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