CHAPTER 12

Electricity

TRY YOURSELF ANSWERS

1. The physical quantity coulomb/second is called electric current.

2. Conventional current in the direction of flow of positive charge.

3. **(b) :** As we know that, work done, $W = qV = 0.5 \times 20$
$= 10$ J

4. **(b) :** Work done in moving an unit charge across two points in an electric circuit is a measure of potential difference.

5. S.I. unit of potential difference is volt.

6. **(b) :** If area of cross-section is halved, then, resistance becomes,

$$R' = \rho\frac{l}{A'} = \rho\frac{l}{A/2} = \frac{2\rho l}{A} = 2R$$

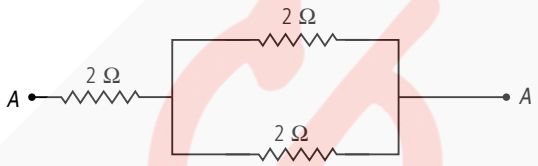
(Taking length remains in changed)

So, the resistance increases two times of its original.

7. Resistance of a pure metal increases with rise in temperature.

8. S.I. unit of resistivity is ohm-meter (Ω-m).

9. By combining two resistors each of 2 Ω in parallel and then their equivalent with other 2 Ω resistor we can obtain 3 Ω resistance.



$\frac{1}{R_1} = \frac{1}{2} + \frac{1}{2} = 1\,\Omega$ and $R_{eq.} = 2 + 1 = 3\ \Omega$

10. **(b) :** In homes electrical devices are connected in parallel.

11. **(b) :** If the potential difference across each resistor is same then the resistors are connected in parallel.

12. **(b) :** If a current of 3.5 A flows through a hair dryer, then for normal use of fuse with rating 5 A will be most suitable among given options.

13. Given, power of the lamp, $P = 25$ W and voltage, $V = 200$ V.

$\therefore$ Power, $P = VI$

$\Rightarrow I = \frac{P}{V} = \frac{25\text{ W}}{200\text{ V}} = \frac{1}{8}\text{ A} = 0.125\text{ A}$

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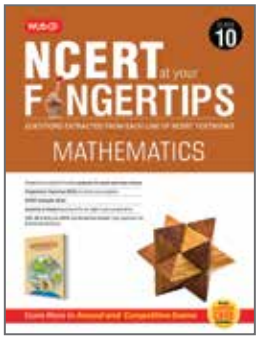

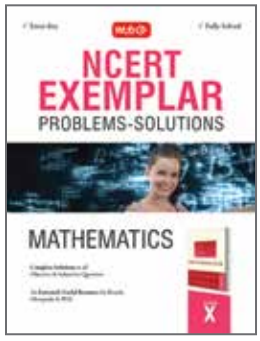

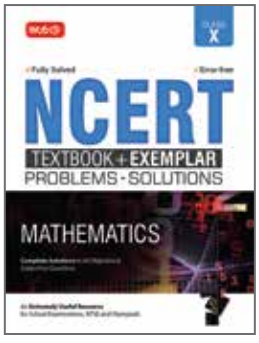

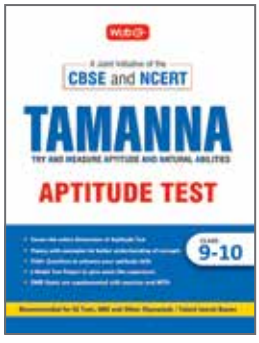

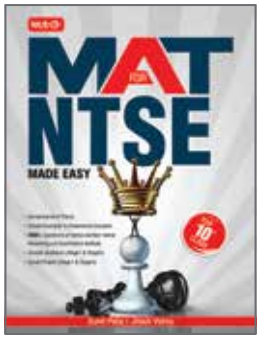

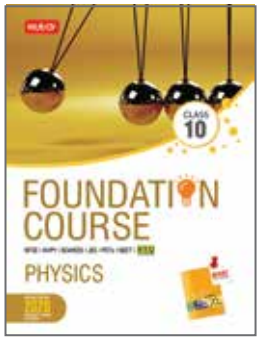

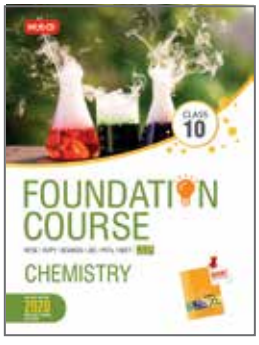

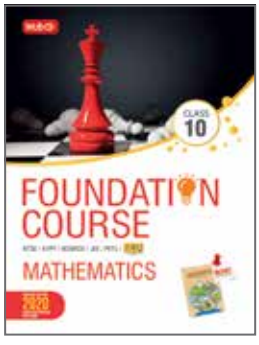

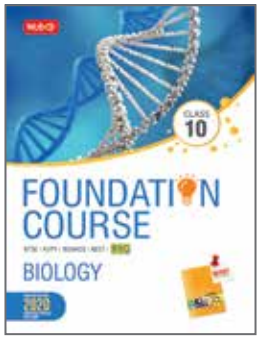

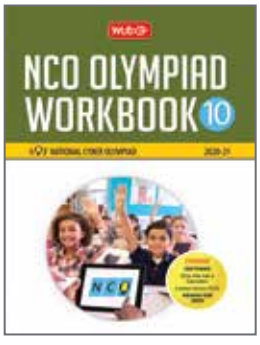

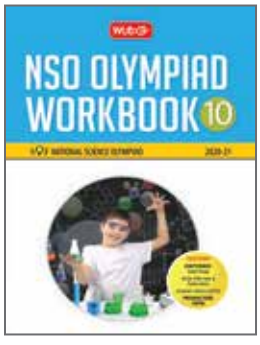

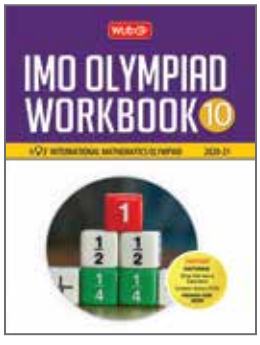

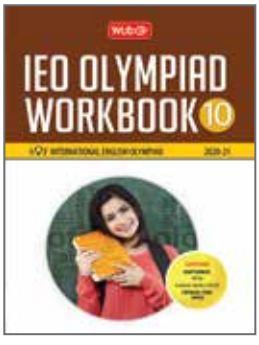

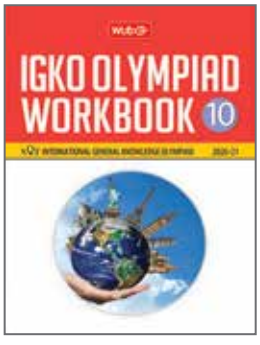

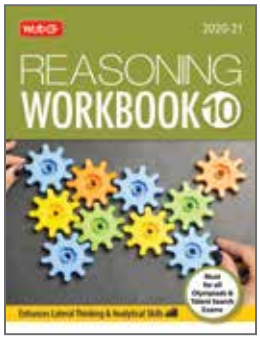

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