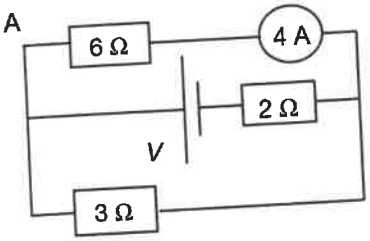
3.5.8 Analysing circuits with series and parallel resistors.

3.5.8.1 Analyse each of the following circuits to determine values for the quantities indicated.

A



A

Total resistance =

Circuit current =

Current through 6 Ω =

Current through 2 Ω =

Current through 3 Ω =

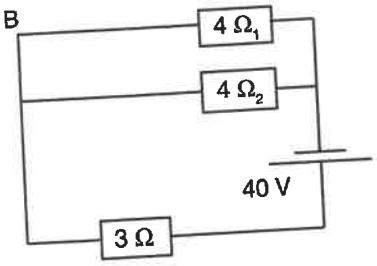
Potential across 6 Ω =

Potential across 2 Ω =

Potential across 3 Ω =

Potential of source =

B



B

Total resistance =

Circuit current =

Current through 3 Ω =

Current through 4 Ω_1 =

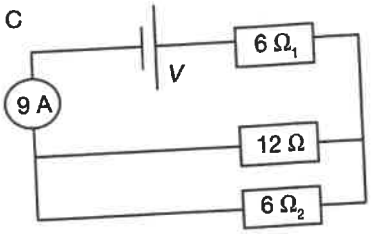
Current through 4 Ω_2 =

Potential across 3 Ω =

Potential across 4 Ω_1 =

Potential across 4 Ω_2 =

C



C

Total resistance =

Circuit current =

Current through 6 Ω_1 =

Current through 12 Ω =

Current through 6 Ω_2 =

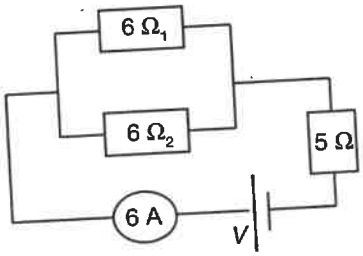
Potential across 6 Ω_1 =

Potential across 12 Ω =

Potential across 6 Ω_2 =

Potential of source =

D



D

Total resistance =

Circuit current =

Current through 6 Ω_1 =

Current through 6 Ω_2 =

Current through 5 Ω =

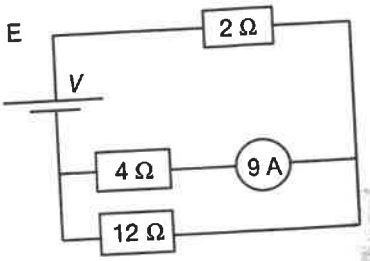
Potential across 6 Ω_1 =

Potential across 6 Ω_2 =

Potential across 5 Ω =

Potential of source =

E



E

Total resistance =

Circuit current =

Current through 2 Ω =

Current through 4 Ω =

Current through 12 Ω =

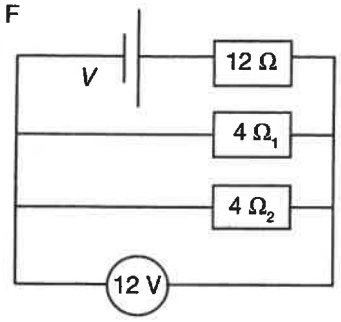
Potential across 2 Ω =

Potential across 4 Ω =

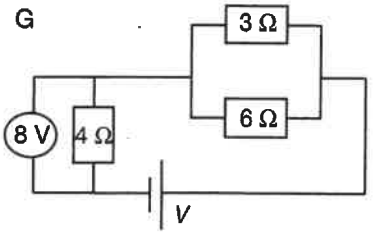
Potential across 12 Ω =

Potential of source =

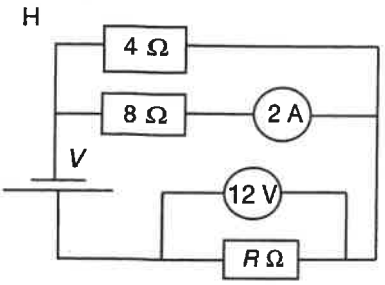
F



G



H



F

Total resistance =
Circuit current =
Current through 12 Ω =
Current through 4 Ω_1 =
Current through 4 Ω_2 =
Potential across 12 Ω =
Potential across 4 Ω_1 =
Potential across 4 Ω_2 =
Potential of source =

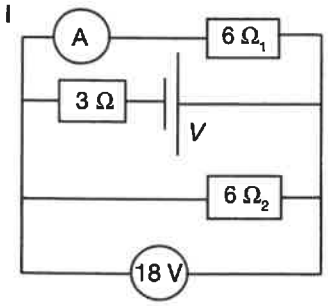
G

Total resistance =
Circuit current =
Current through 3 Ω =
Current through 6 Ω =
Current through 4 Ω =
Potential across 3 Ω =
Potential across 6 Ω =
Potential across 4 Ω =
Potential of source =

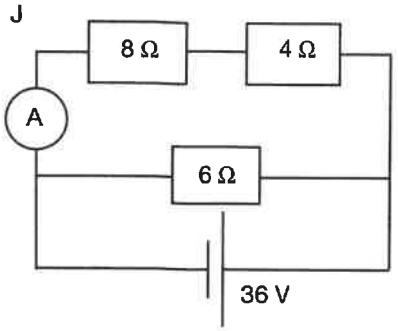
H

Total resistance =
Circuit current =
Current through 4 Ω =
Current through 8 Ω =
Current through *R* Ω =
Potential across 4 Ω =
Potential across 8 Ω =
Potential across *R* Ω =
Potential of source =
Value of resistor *R* =

I



J



I

Total resistance =
Circuit current =
Current through 6 Ω_1 =
Current through 6 Ω_2 =
Current through 3 Ω =
Potential across 6 Ω_1 =
Potential across 6 Ω_2 =
Potential across 3 Ω =
Potential of source =
Reading on meter A =

J

Total resistance =
Circuit current =
Current through 8 Ω =
Current through 4 Ω =
Current through 6 Ω =
Potential across 8 Ω =
Potential across 4 Ω =
Potential across 6 Ω =
Potential of source =
Reading on meter A =