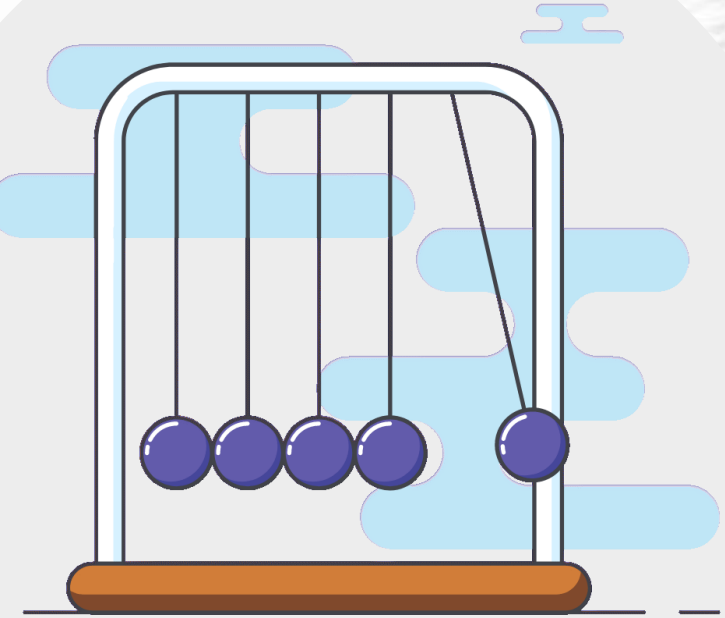
12 GEN



2024-2023

Grade 12 GEN Physics

Questions Exam coverage

Mr Abdelrahman Esam 0509886279

Q16

Solve problems to find the current, voltages and resistances in a parallel circuit..حل مسائل لإيجاد التيار وفروق الجهد والمقاومات في دائرة توازي

TERM2
12Gen

As shown in the figure the battery develops 110 *V*.

a. Which resistor is the hottest?

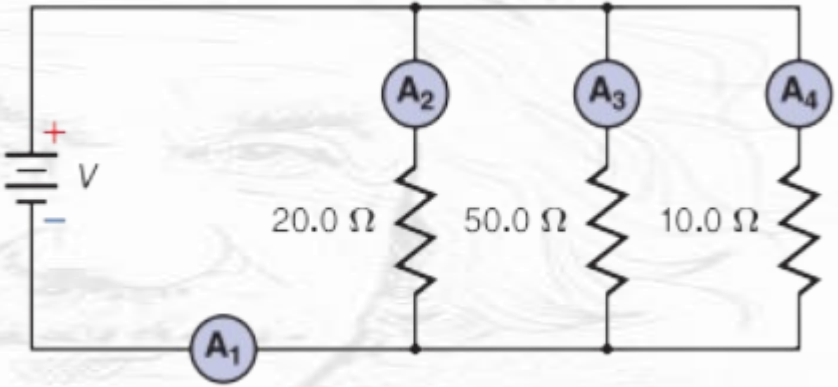
b. Which resistor is the coolest?

c. What will ammeter 1 *read?*

d. What will ammeter 2 *read?*

e. What will ammeter 3 *read?*

f. What will ammeter 4 *read?*



.....

.....

.....

.....

.....

EINSTIEN
Abdelrahaman
0509886279

Q16

Solve problems to find the current, voltages and resistances in a parallel circuit..حل مسائل لإيجاد التيار وفروق الجهد والمقاومات في دائرة توازي

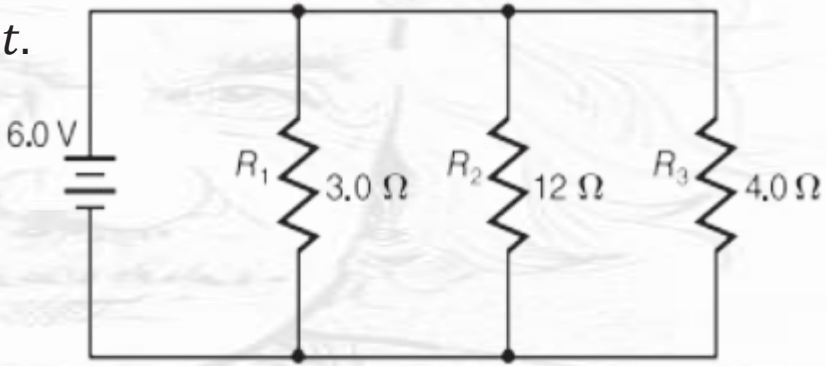
TERM2
12Gen

the circuit shown below

a. *Find the current through each branch of the circuit.*

b. *Find the equivalent resistance of the circuit.*

c. *Find the current through the battery*



.....

.....

.....

.....

.....

EINSTIEN
Abdelrahaman
0509886279

Q16

Solve problems to find the current, voltages and resistances in a parallel circuit..حل مسائل لإيجاد التيار وفروق الجهد والمقاومات في دائرة توازي

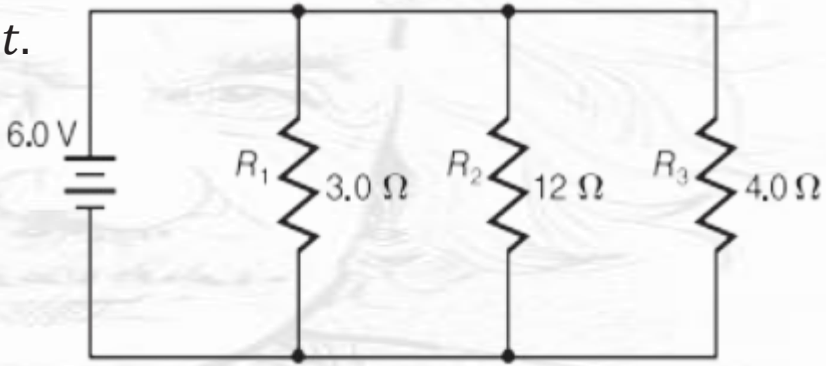
TERM2
12Gen

the circuit shown below

a. *Find the current through each branch of the circuit.*

b. *Find the equivalent resistance of the circuit.*

c. *Find the current through the battery*



.....

.....

.....

.....

.....

EINSTIEN
Abdelrahaman
0509886279

Q16

Solve problems to find the current, voltages and resistances in a parallel circuit..حل مسائل لإيجاد التيار وفروق الجهد والمقاومات في دائرة توازي

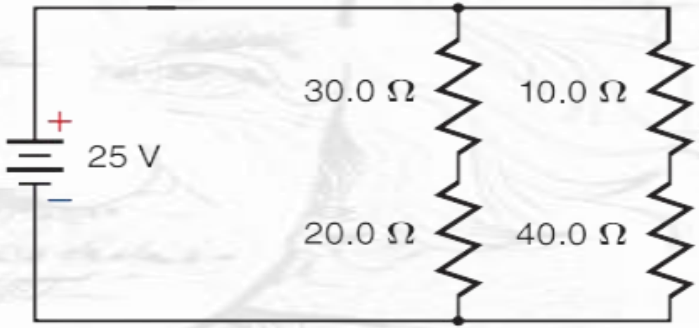
TERM2
12Gen

the circuit shown below

a. *Find the current through each branch of the circuit.*

b. *Find the equivalent resistance of the circuit.*

c. *Find the current through the battery*



.....

.....

.....

.....

.....

EINSTIEN
Abdelrahaman
0509886279

Q16

Solve problems to find the current, voltages and resistances in a parallel circuit..حل مسائل لإيجاد التيار وفروق الجهد والمقاومات في دائرة توازي

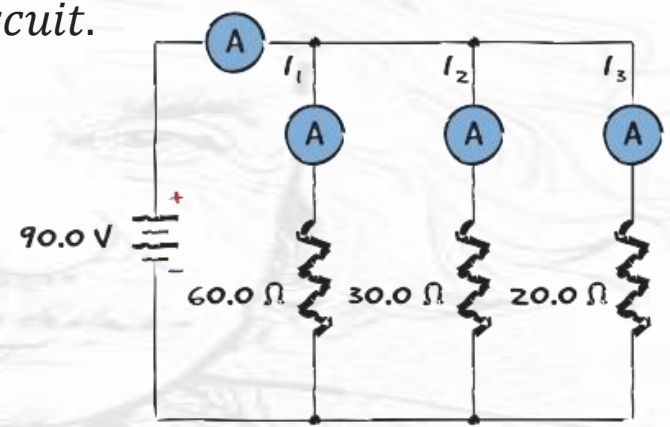
TERM2
12Gen

the circuit shown below

a. *Find the current through each branch of the circuit.*

b. *Find the equivalent resistance of the circuit.*

c. *Find the current through the battery*



.....

.....

.....

.....

.....

.....

EINSTIEN
Abdelrahaman
0509886279

Q16

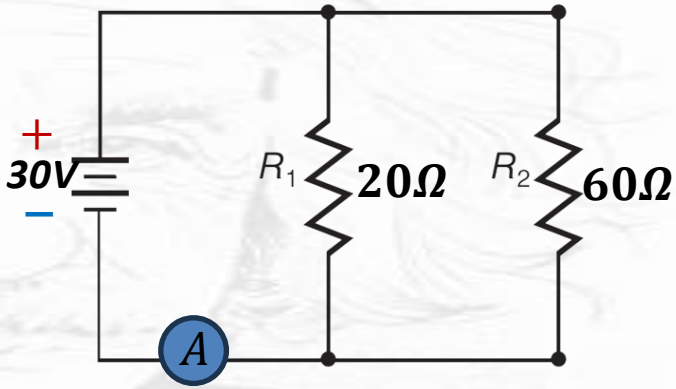
Solve problems to find the current, voltages and resistances in a parallel circuit..حل مسائل لإيجاد التيار وفروق الجهد والمقاومات في دائرة توازي

TERM2
12Gen

the circuit shown below

A. Find the equivalent resistance of the circuit ?

B. What is the current through the ammeter ?



.....

.....

.....

.....

.....

.....

EINSTIEN
Abdelrahaman
0509886279

Q17

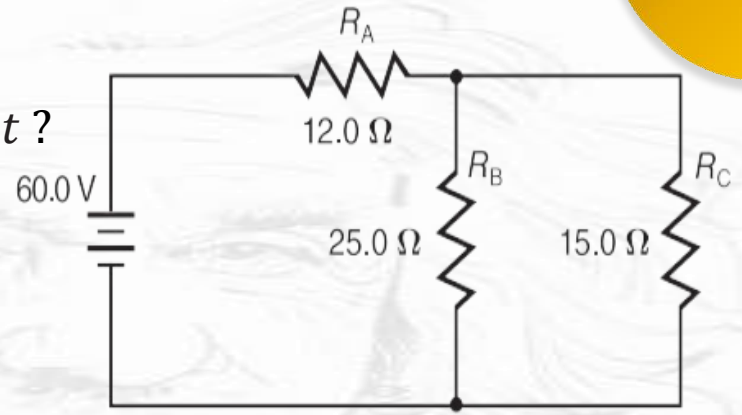
Calculate the equivalent resistance of combined series-parallel circuits. Calculate the voltage, current, and power dissipation for any resistor in a combined series-parallel circuit.

TERM2
12Gen

the circuit shown below

A. Find the equivalent resistance of the circuit ?

B. What is the current through the battery?



.....

.....

.....

.....

.....

.....

EINSTIEN
Abdelrahaman
0509886279

Q17

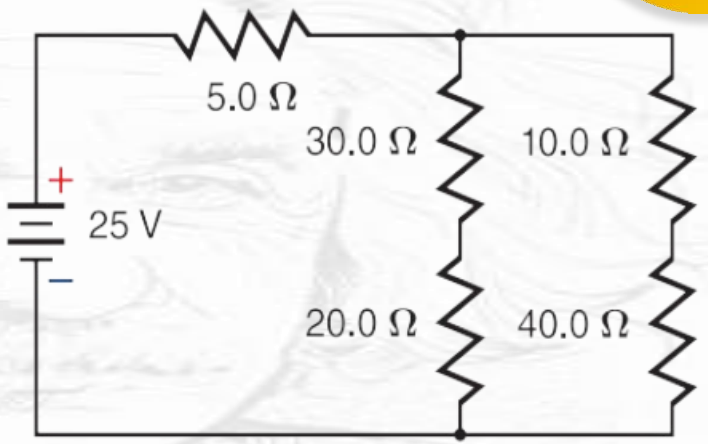
Calculate the equivalent resistance of combined series-parallel circuits. Calculate the voltage, current, and power dissipation for any resistor in a combined series-parallel circuit.

TERM2
12Gen

the circuit shown below

A. Find the equivalent resistance of the circuit ?

B. What is the current through the battery?



.....

.....

.....

.....

.....

.....

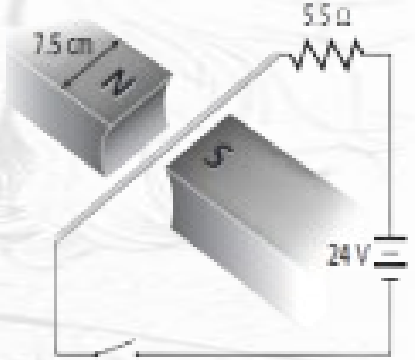
EINSTIEN
Abdelrahaman
0509886279

Q18

Apply the equation $F = ILBsin(\theta)$ to calculate the magnitude of the force on a straight segment of a current-carrying wire placed in a uniform magnetic field

TERM2
12Gen

Determine the force on the wire
when the switch is closed and the wire has two 5.5 Ω *resistors in series.*



.....

.....

.....

.....

.....

.....

EINSTIEN
Abdelrahaman
0509886279

Q18

Apply the equation $F = ILBsin(\theta)$ to calculate the magnitude of the force on a straight segment of a current-carrying wire placed in a uniform magnetic field

TERM2
12Gen

The current through a wire that is 0.80 *cm long is* 5.0 *A. The wire is perpendicular to a* 0.60 *T magnetic field.*
What is the magnitude of the force on the wire?

.....
.....
.....
.....
.....
.....

EINSTIEN
Abdelrahaman
0509886279

Q18

Apply the equation $F = ILBsin(\theta)$ to calculate the magnitude of the force on a straight segment of a current-carrying wire placed in a uniform magnetic field

TERM2
12Gen

A straight wire carrying a current of $7.2\ A$ *has a field of* $8.9 \times 10^{-3}\ T$ *perpendicular to it. What length of wire in the field will experience a force of* $2.1\ N$?

.....

.....

.....

.....

.....

.....

EINSTIEN
Abdelrahaman
0509886279

Q18

Apply the equation $F = ILBsin(\theta)$ to calculate the magnitude of the force on a straight segment of a current-carrying wire placed in a uniform magnetic field

TERM2
12 Gen

Assume that a 19 *cm length of wire is carrying a current perpendicular to a* 4.1 *T magnetic field and experiences a force of* 7.6 *mN.*
What is the current in the wire?

.....
.....
.....
.....
.....
.....

EINSTIEN
Abdelrahaman
0509886279

Q18

Apply the equation $F = ILBsin(\theta)$ to calculate the magnitude of the force on a straight segment of a current-carrying wire placed in a uniform magnetic field

TERM2
12Gen

What is the strength of the magnetic field (B)? wire. When 0.10 m of the wire is in the field, the force on the wire is 0.20 N. 5.0 A current is in a uniform magnetic field oriented at right angles to the

.....

.....

.....

.....

.....

.....

EINSTIEN
Abdelrahaman
0509886279

Q18

Apply the equation $F = ILBsin(\theta)$ to calculate the magnitude of the force on a straight segment of a current-carrying wire placed in a uniform magnetic field

TERM2
12 Gen

A wire attached to a $5.8\ V$ *battery is in a circuit with a resistance of* $18\ \Omega$. *A* $14\ cm$ *length of the wire is in a magnetic field of* $0.85\ T$, *and the force on the wire is* $22\ mN$. *What is the angle of the wire in the field*

.....

.....

.....

.....

.....

.....

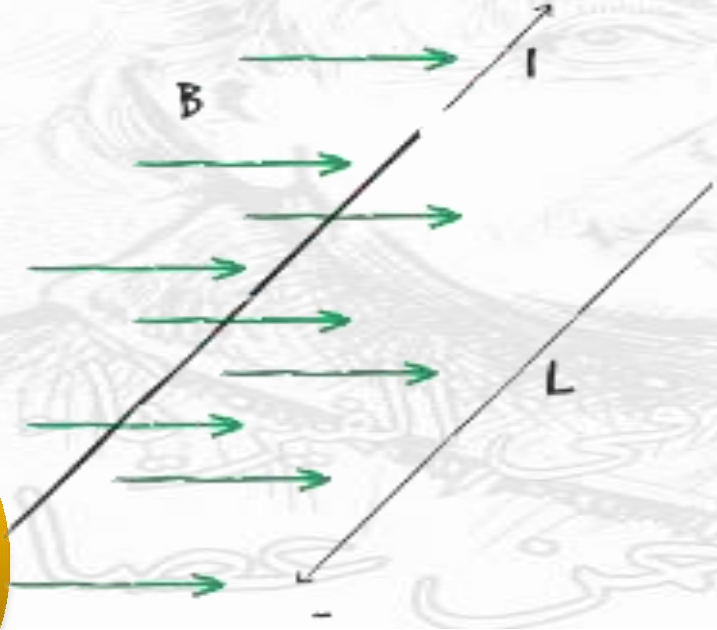
EINSTIEN
Abdelrahaman
0509886279

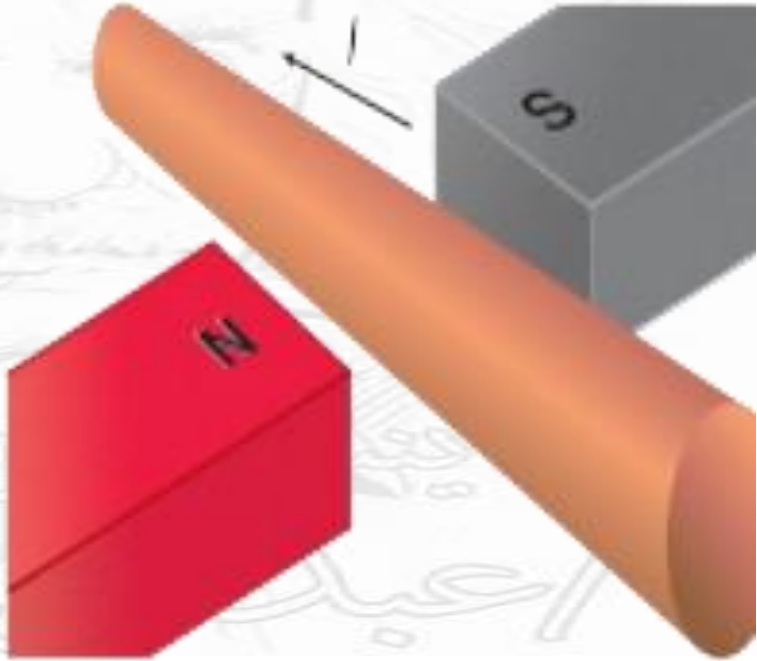
Q18

Apply the right-hand rule to find the direction of the force on a current-carrying wire placed in an external magnetic field.

TERM2
12Gen

What is the direction of the force on the wire





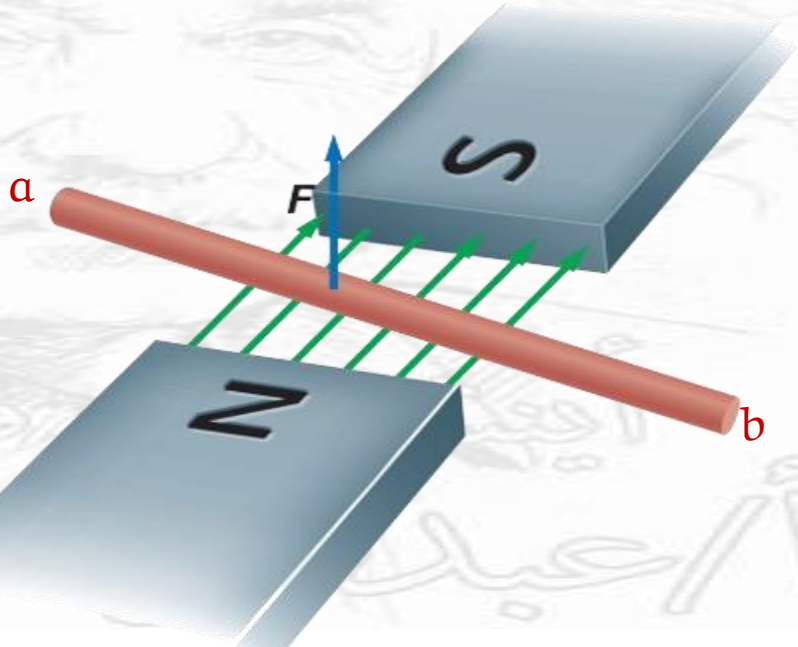
EINSTIEN
Abdelrahaman
0509886279

Q18

Apply the right-hand rule to find the direction of the force on a current-carrying wire placed in an external magnetic field.

TERM2
12Gen

What is the direction of the current on the wire



EINSTIEN
Abdelrahaman
0509886279

Q19

Explain how fuses, circuit breakers and ground-fault interrupters protect electric circuits and make them safe to operate.
Explain the importance of a voltage-divider circuit to achieve a desired potential difference . Describe the principle and working of a simple electric motor and the energy conversions that occur.

TERM2
12Gen

A fuse is a short piece of metal that acts as a safety device by melting and stopping the current when too large a current passes through it. Engineers design fuses to melt before other elements in a circuit are damaged.

A ground − fault interrupter (GFI) is a device that contains an electronic circuit that detects small current differences between the two wires in the cord connected to an appliance. An extra current path, such as one through water, could cause this difference. The GFI stops the current when it detects such differences. This often protects a person from electrocution.

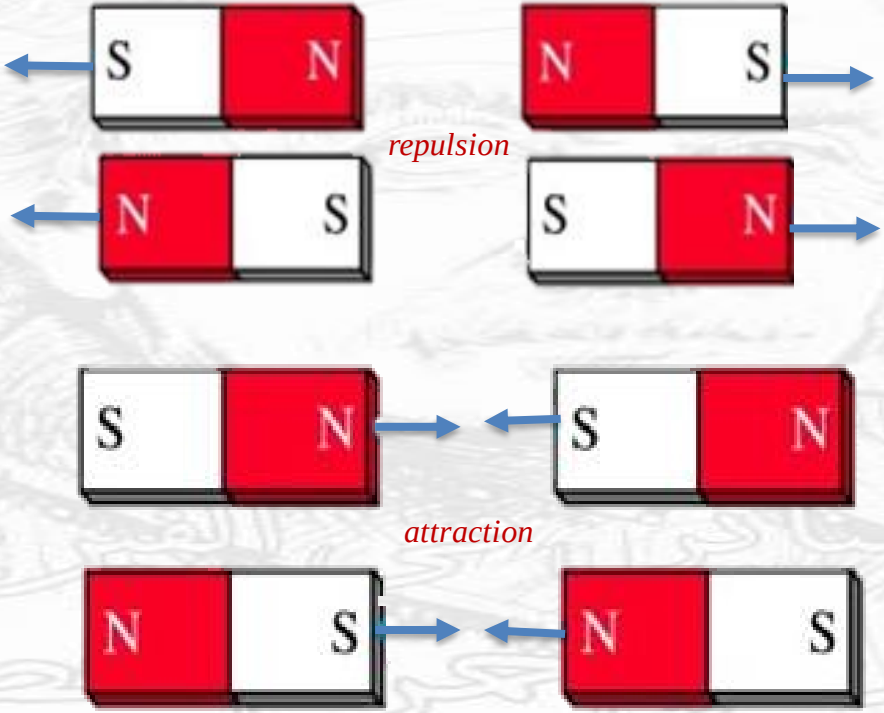
A circuit breaker, is an automatic switch that acts as a safety device by stopping the current if the current gets too large and exceeds a threshold value.

EINSTIEN
Abdelrahaman
0509886279

Q19

Describe the forces that occur when like or unlike poles of two permanent magnets are brought close together (in terms of the interaction between the magnetic fields and the orientation of the magnetic field lines).

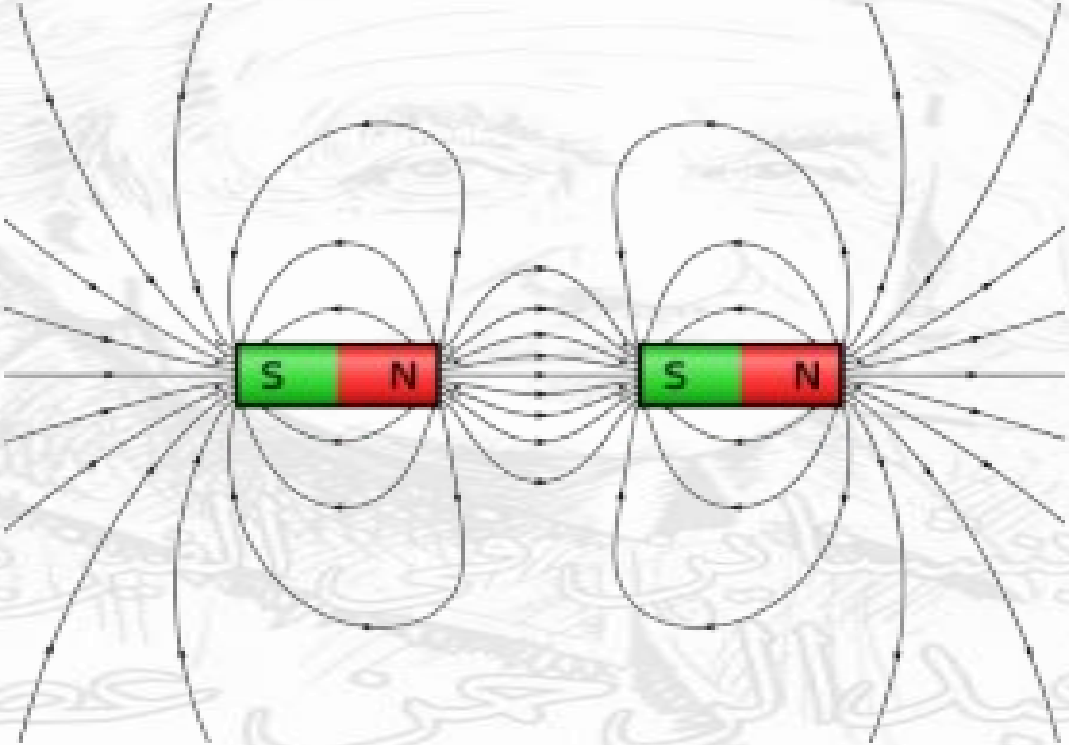
TERM2
12Gen



EINSTIEN
Abdelrahaman
0509886279

Q19

Describe the forces that occur when like or unlike poles of two permanent magnets are brought close together (in terms of the interaction between the magnetic fields and the orientation of the magnetic field lines).



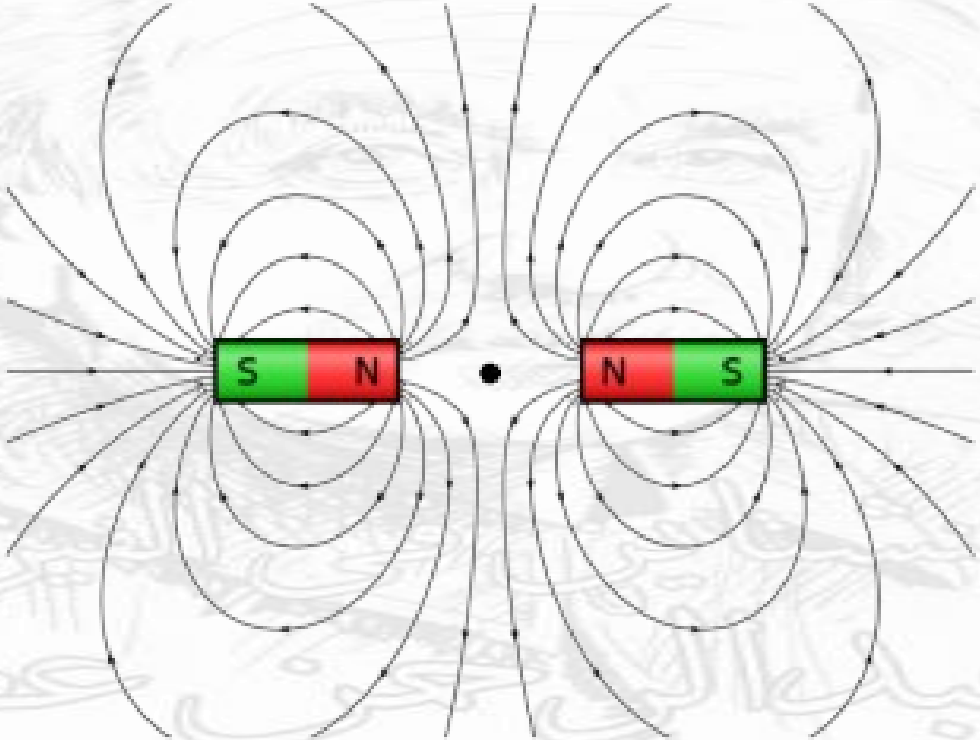
TERM2
12Gen

EINSTIEN
Abdelrahaman
0509886279

Q19

Describe the forces that occur when like or unlike poles of two permanent magnets are brought close together (in terms of the interaction between the magnetic fields and the orientation of the magnetic field lines).

TERM2
12Gen



EINSTIEN
Abdelrahaman
0509886279

Q20

Apply the equation $F = qvBsin(\theta)$ to calculate the magnitude of the force acting on a charged particle moving in a magnetic field.

TERM2
12 Gen

A uniform magnetic field of $0.25\ T$ *points vertically.*
A proton enters the field with a horizontal velocity of $4.0 \times 10^6\ m/s$.
What are the magnitude force exerted on the proton ?

.....
.....
.....
.....
.....
.....

EINSTIEN
Abdelrahaman
0509886279

Q20

Apply the equation $F = qvBsin(\theta)$ to calculate the magnitude of the force acting on a charged particle moving in a magnetic field.

TERM2
12 Gen

A 7.12 μ*C charge is moving at the speed* $3.0 \times 10^8 m/s$ *a magnetic field of* 4.02 *mT*. *What is the force on the charge*?

.....

.....

.....

.....

.....

.....

EINSTIEN
Abdelrahaman
0509886279

Q20

Apply the equation $F = qvBsin(\theta)$ to calculate the magnitude of the force acting on a charged particle moving in a magnetic field.

TERM2
12 Gen

A magnetic field of $16\,T$ *acts in a direction due west. An electron is traveling due south at* $8.1 \times 10^5\ m/s$. *What are the magnitude and direction of the force acting on the electron?*

.....

.....

.....

.....

.....

.....

EINSTIEN
Abdelrahaman
0509886279

Q20

Apply the equation $F = qvBsin(\theta)$ to calculate the magnitude of the force acting on a charged particle moving in a magnetic field.

TERM2
12Gen

An electron is traveling at right angles to a magnetic field at a speed of 4.0×10^4 *m/s. The force oneach particle is* $6.4 \times 10^{-16} N$.
What is the magnetic field strength?

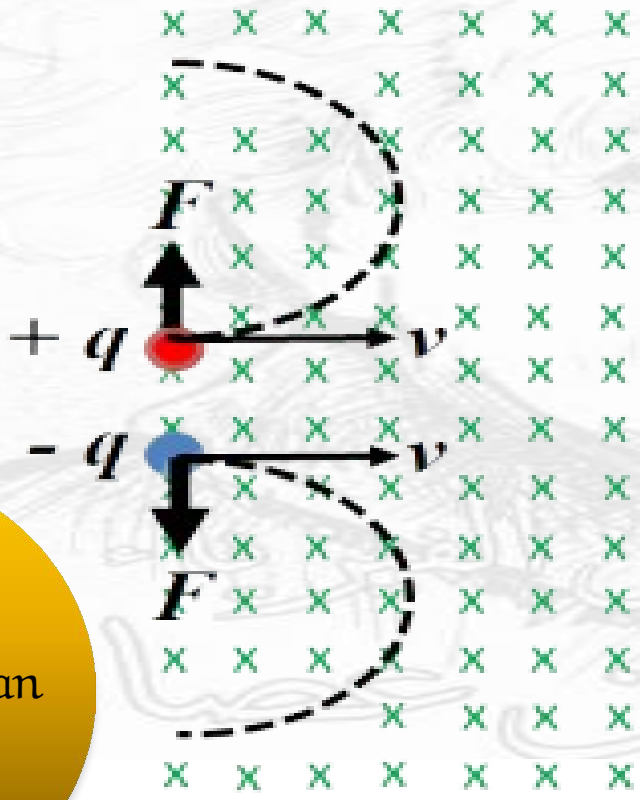
.....
.....
.....
.....
.....
.....

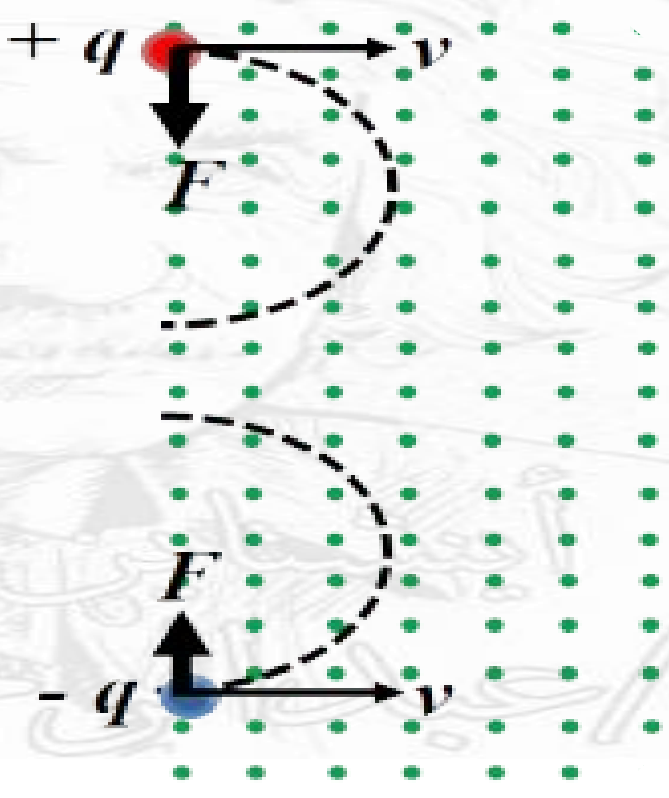
EINSTIEN
Abdelrahaman
0509886279

Q20

Apply the right-hand rule to determine the direction of the force acting on a charged particle moving in a magnetic field.

TERM2
12Gen





EINSTIEN
Abdelrahaman
0509886279

Q20

Apply the equation $F = qvBsin(\theta)$ to calculate the magnitude of the force acting on a charged particle moving in a magnetic field.

TERM2
12 Gen

at a right angle through a $0.61\ T$ *magnetic field. What is the particle's velocity*
An electron particle experiences a force of $4.1 \times 10^{-13} N$ *when it travels*

.....

.....

.....

.....

.....

.....

EINSTIEN
Abdelrahaman
0509886279