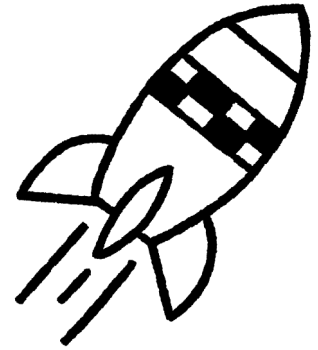


Koronto taagan: dallac (charge)

Sayniska

Cutub: Wareegyo taxane (Series circuits)



Natiijo

Waxaan qeexi karaa waxa dallacyadu yihiin iyo sida loogu kala wareejiyo walxaha qaarkood, iyaga oo siinaya dallacyo iska soo horjeeda.

Erayada muhiimka ah

atom

**dallac togan (positive
charge)**

**dallac taban (negative
charge)**

electron

Atomyadu waa walxaha ka sameysan curiyeyaasha kiimikada, oo ka kooban tirooyin isleeg oo protons togan iyo electrons taban.

Dallac togan waa nooc ka mid ah dallaca korantada oo soo jiita dallac taban.

Dallac taban waa nooc ka mid ah dallaca korantada oo soo jiita dallac togan.

Electrons waa walxo taban oo ku jira gudbiyeyaasha (conductors) oo qulqula si ay u soo saaraan qulqul koronto (electric current).

Qaabka casharka

Koronto taagan: dallac (charge)



Xaggee ayay ka timaadaa dallaca?



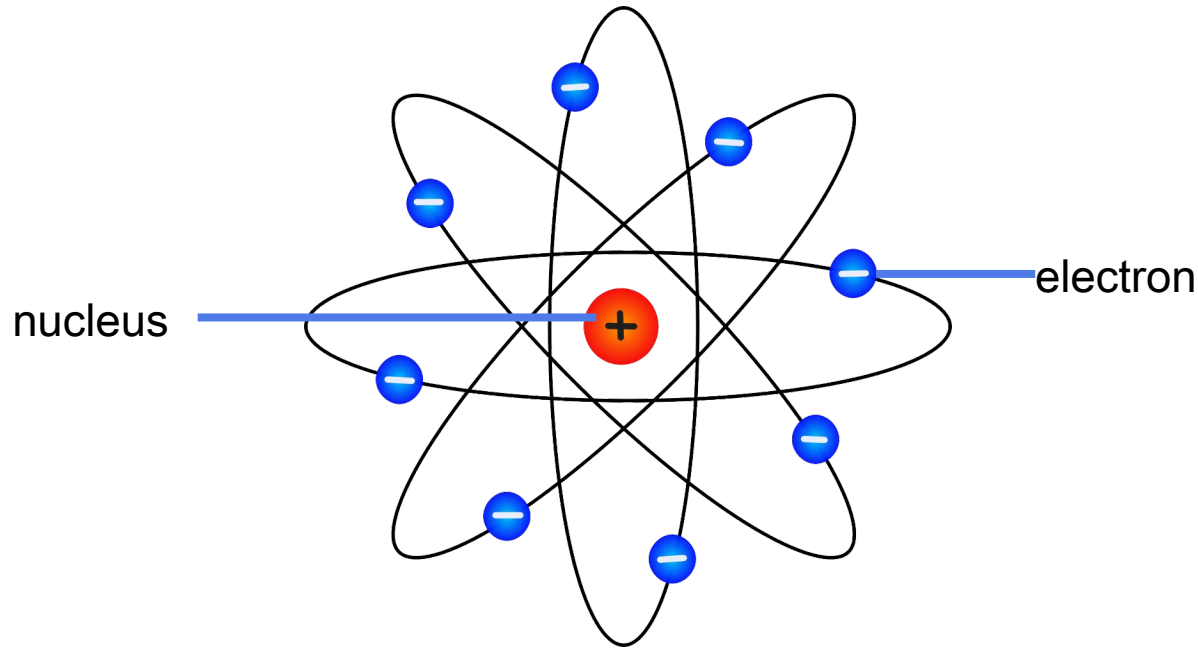
Sida dallacyadu u dhaqaaqaan



Isticmaalka iyo dhibaatooyinka korantada taagan (static electricity)

Xaggee ayay ka timaadaa dallaca?

Atom-ka mararka qaarkood waxaa lagu muujiyaa qaabkan:



Xaggee ayay ka timaadaa dallaca?



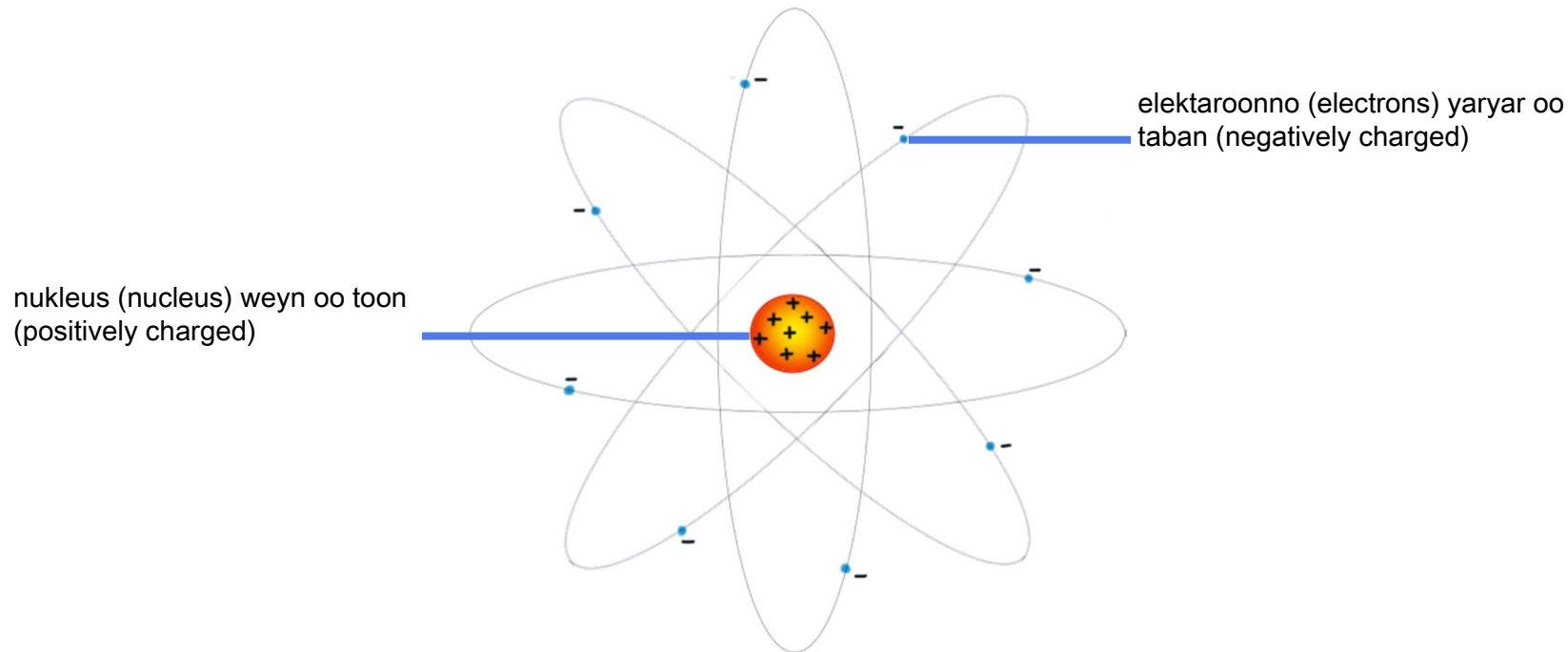
Waa maxay dallaca ku yaal nucleus-ka atom-ka?

a dhexdhexaad (neutral)

b taban (negative)

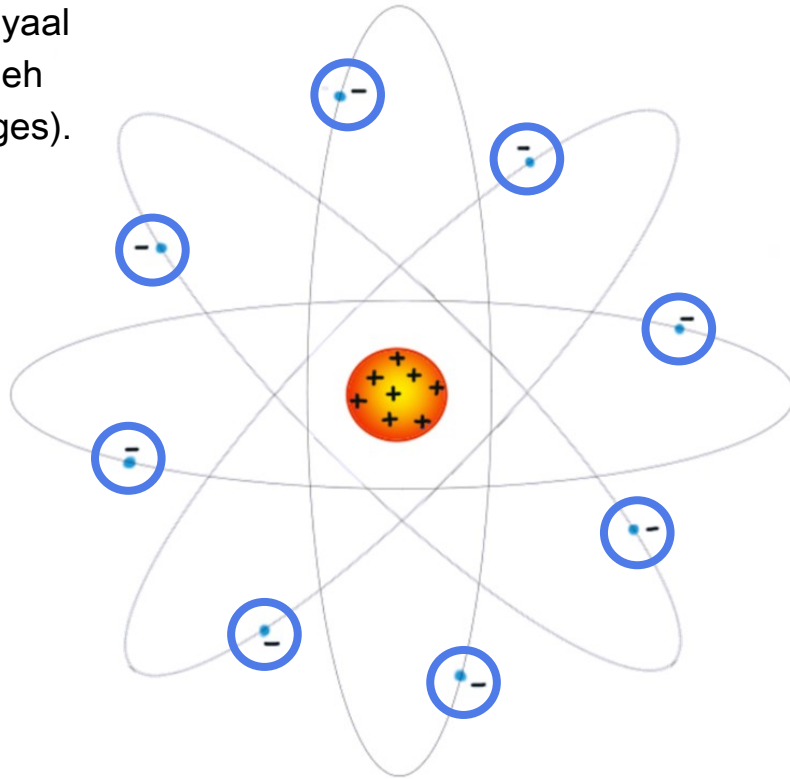
c toon (positive) ✓

Qaabka waxaa loo sawiri karaa si ka sax ah.



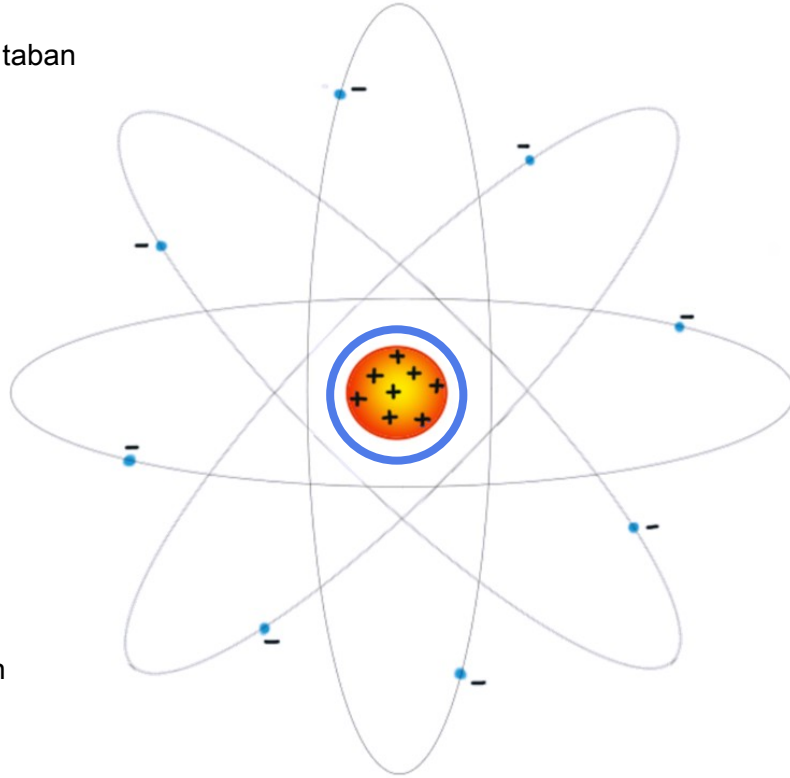
Xarig (charge) xaggee ka yimaadaa?

Atamkan (atom) waxaa ku yaal
8 elektaroon (electron) oo leh
xarig taban (negative charges).



Xarig (charge) xaggee ka yimaadaa?

Atamkan (atom) waxaa ku yaal 8 elektaroon (electron) oo leh xarig taban (negative charges).



Waxaa sidoo kale jira 8 xarig toon (positive charges).

Xarig (charge) xaggee ka yimaadaa?

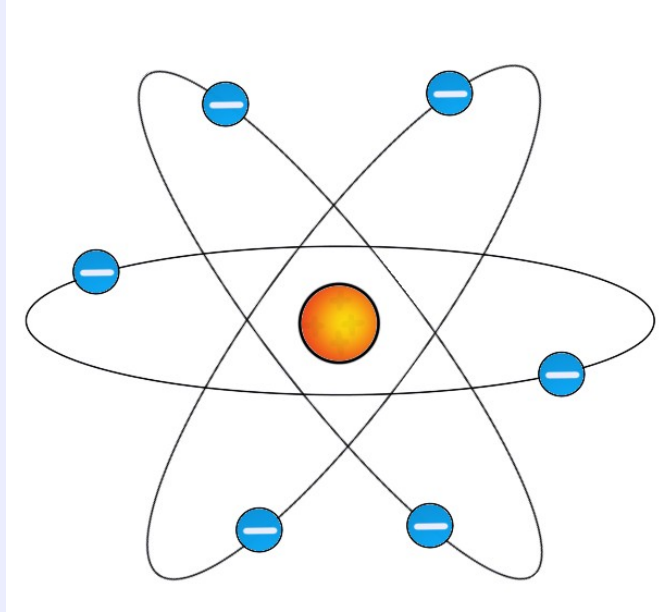
Imisa elektaroon (electron) ayaa ku jira atamka (atom) hoos ku sawiran?

a 2

b 4

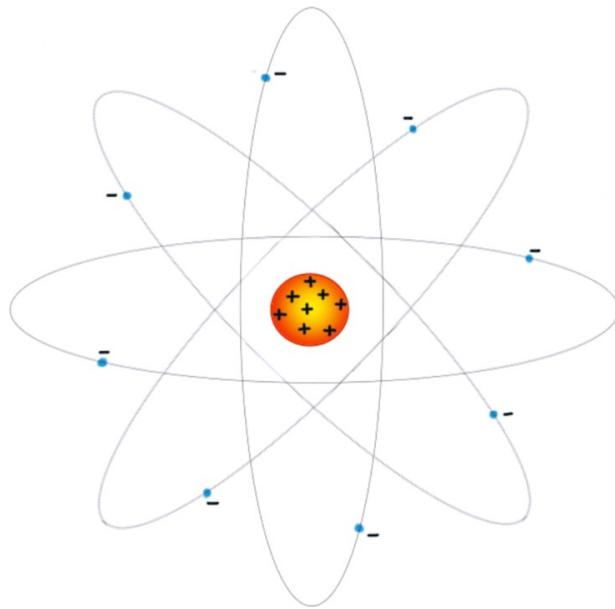
c 6 ✓

d 8



8 xarig toon (+) ayaa tirtiraya 8 xarig taban (-).

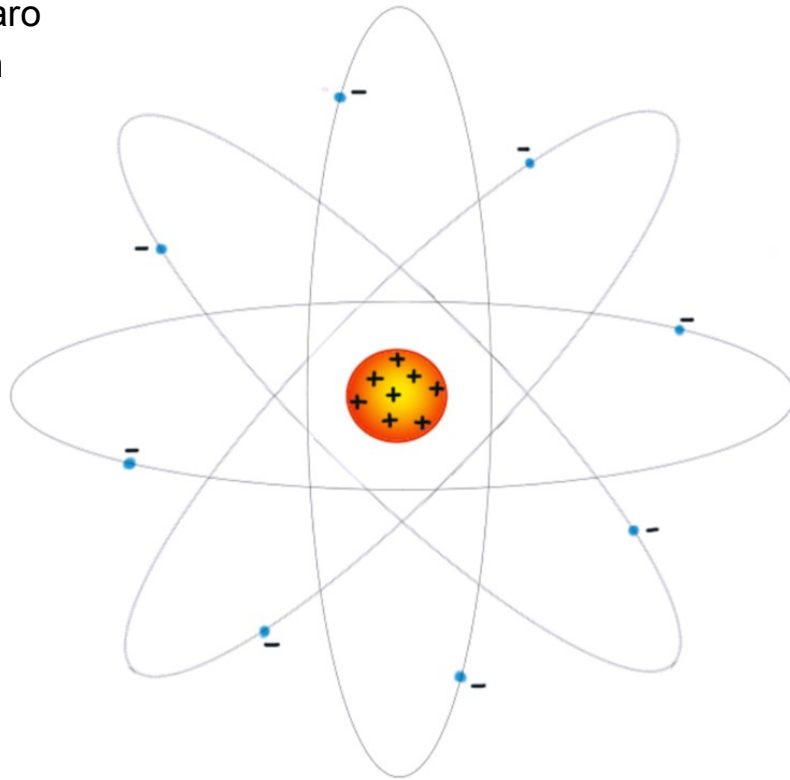
+8 iyo -8 wadartoodu waa 0. Atamku (atom) waa dhexdhexaad (neutral), marka guud ahaan xarig (charge) ma laha.



Inta badan atamka (atoms) waxay leeyihiin tiro siman oo xarig toon (positive) iyo taban (negative) ah – waa dhexdhexaad (neutral).

Xarig (charge) xaggee ka yimaadaa?

Way fududahay in laga saaro elektaroon (electron) taban (negative) oo ka baxsan atamka (atom).



Way adag tahay in laga saaro xarig toon (positive charge) oo ka yimid gudaha atamka (atom).

Xaggee ayay ka timaadaa kharashka (charge)?

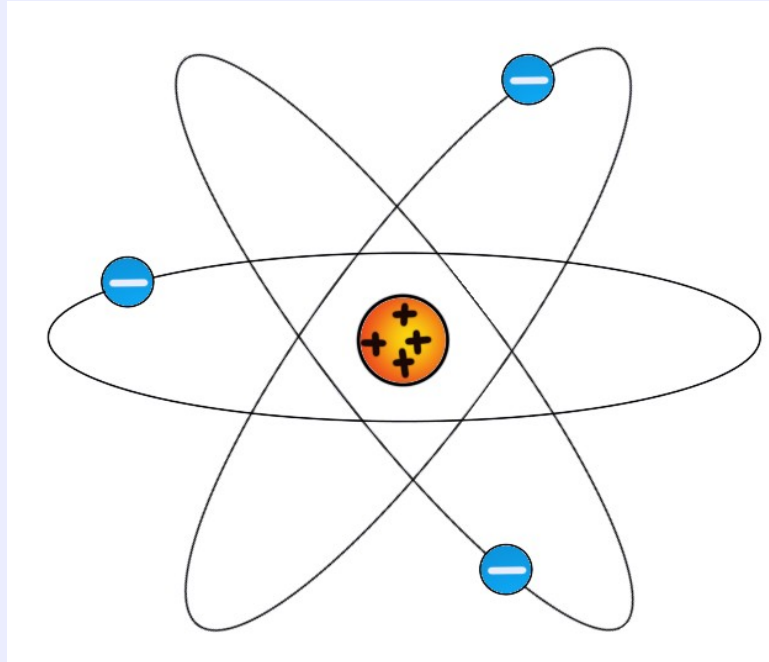
Waa maxay xariga (charge) guud ee atamka (atom) hoos ku sawiran?

a +1 ✓

b -1

c -3

d +4



- 1) Sharax sababta atamka badankoodu aan u lahayn kharash guud.
- 2) Sharax sababta ay u fudud tahay in laga saaro kharashyada taban (negative) atamka marka loo eego kuwa togan (positive).

1) Sharax sababta atamka badankoodu aan u lahayn kharash guud.

Atamka badankoodu waxay leeyihiin tiro siman oo kharashyo togan iyo taban ah. Tani waxay ka dhigan tahay in kharashka guud uu yahay dhexdhexaad (neutral) maadaama kharashyada togan ay tirtiraan kuwa taban.

2) Sharax sababta ay u fudud tahay in laga saaro kharashyada taban (negative) atamka marka loo eego kuwa togan (positive).

Waxay u fudud tahay in laga saaro kharashyada taban (electrons) atamka marka loo eego kuwa togan sababtoo ah electrons-ka waxay ku yaalliin bannaanka atamka oo way fududahay in laga saaro. Kharashyada togan waxay si adag ugu xiran yihiin bartamaha atamka.

Korantada taagan (static electricity): kharash (charge)



Xaggee ayay ka timaadaa kharashka (charge)?



Sida kharashyadu u dhaqaaqaan



Isticmaalka iyo dhibaatooyinka korantada taagan (static electricity)

Marka insulator-ka lagu xogo insulator kale, qaar ka mid ah electrons-ka waxaa laga saari karaa shayga kale.

Electrons-ka taban waxay ka tagaan tiro siman oo kharashyo togan ah.



Maxay kharashka taban ugu sii hadhaa buufinka (balloon)?

a

caaggu waa dhegdheg

b

buufinku waa insulator

c

kharashka togan ayaa halkaas ku haya



Sida korontadu (charges) u dhaqaaqdo

Inta badan kama muujinno dhammaan korontada (charges) shayga si aan sawirka uga dhigin mid adag:

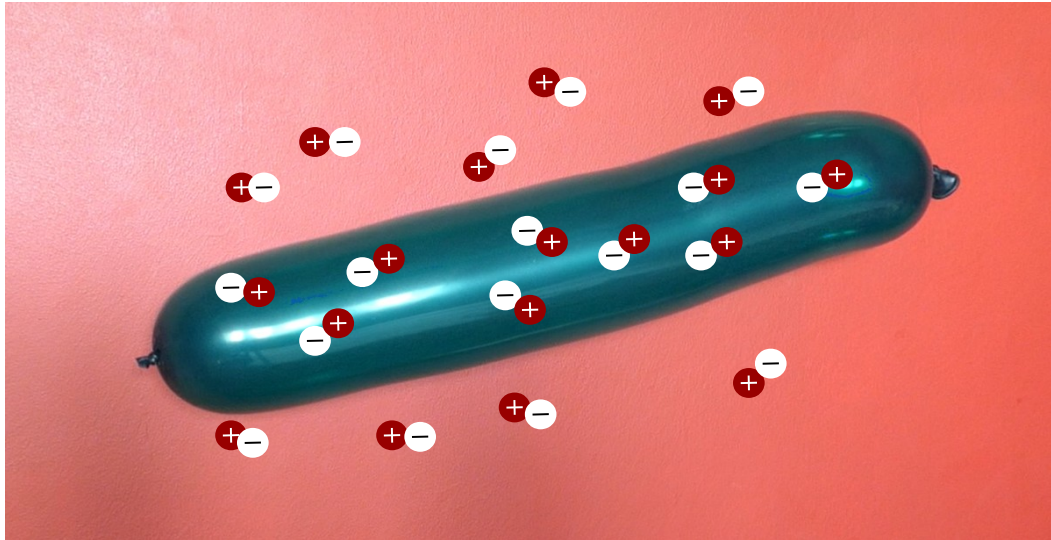
Xaqiiqdii, waxaa jira koronto (charges) badan oo togan (positive) iyo taban (negative) oo dhammaan shayga ku jira.

Qaar ka mid ah korontada (charges) ayaa keliya awood u leh inay ka dhaqaaqaan shay ilaa shay kale.



Sida korontadu (charges) u dhaqaaqdo

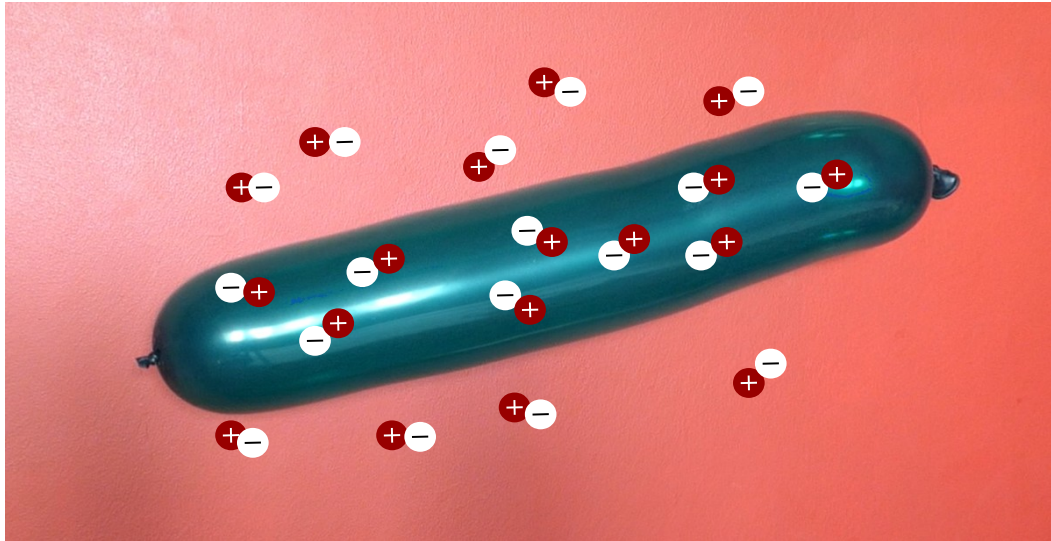
Shayga intooda badan, tirada korontada togan (positive charges) waxay u dheellitiran tahay tirada korontada taban (negative charges).



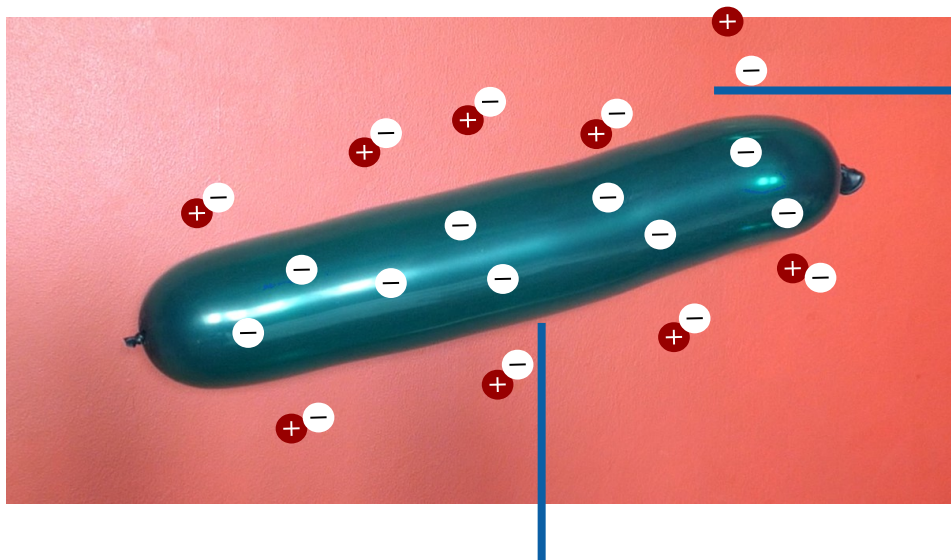
Tani waxay ka dhigan tahay in shayga intooda badan yihiin kuwa dhexdhexaad ah (neutral).

Sida korontadu (charges) u dhaqaaqdo

Marka shaygu yahay mid dhexdhexaad (neutral), inta badan kama muujinno korontada (charges).



Shaygu wuxuu noqdaa mid koronto leh (charged) oo keliya marka elektaroonnada (electrons) taban la dhaqaaajiyo.



elektaroonnada (electrons)
waxay ku dhaqaaqaan
buufinka, iyagoo ka dhigaya
mid koronto taban leh
(negatively charged)

derbigu wuxuu noqdaa mid koronto togan leh (positively charged)

Waa maxay korontada (charge) marada haddii loo isticmaalo in lagu xoqo xisaabiyaha (ruler) kaas oo markaas noqda mid koronto togan leh (positively charged)?

a

togan (positive)

b

taban (negative)



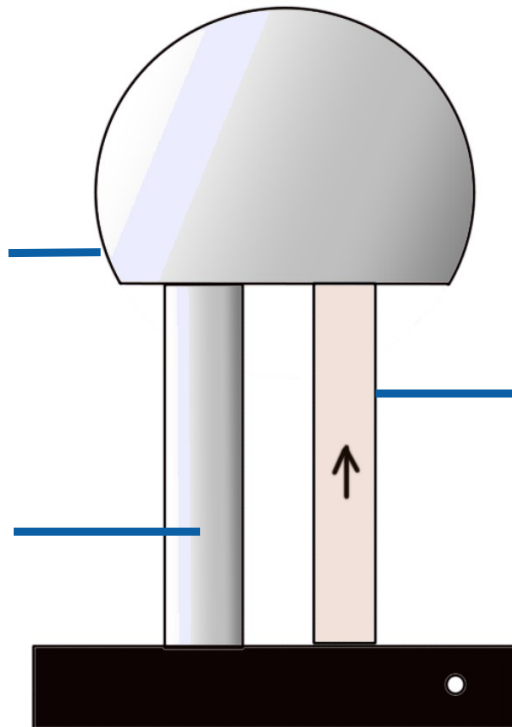
c

dhexdhexaad (neutral)

Matoorka Van der Graaff waxaa loo isticmaali karaa in lagu dhaliyo koronto taagan (static charge)

Qolofka birta ah ee godan wuxuu gudbiyaa oo ururiyaa (charge) kharashka.

Taageeradu waa caag mana gudbis.



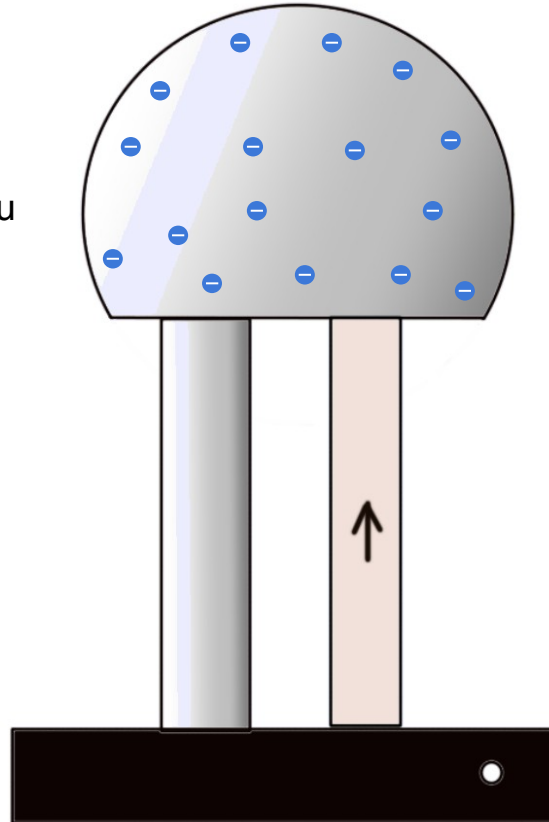
Suunka caagga ah wuxuu ku xaqmaa roogagga gudaha wuxuuna keenaa in kharashku ururo.

Sida kharashku u dhaqaaqo

Kharashku wuxuu ku ururaa dusha sare ee qolofka.

Kharashyadu is-celiyaan oo si siman u fidaan.

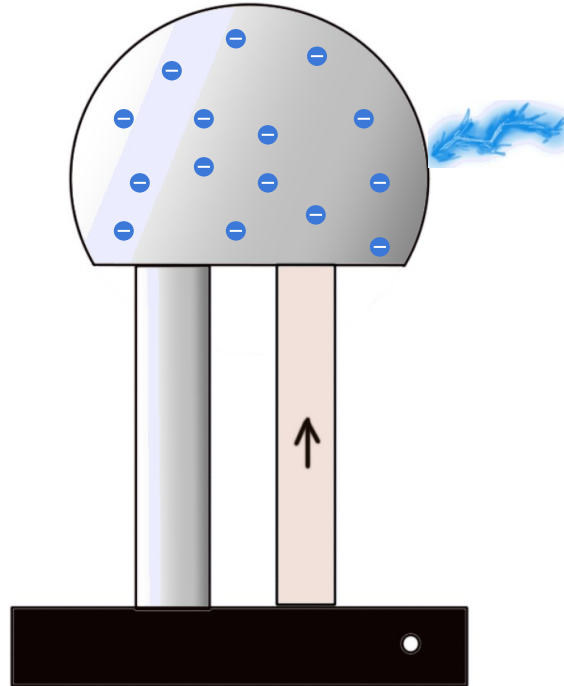
Qolofku waa mid go'doonsan oo hawadu ku wareegsan tahay, sidaas darteed kharashku ma qulquli karo.



Sida kharashku u dhaqaaqo

Marka kharash badan ururo, elektaroonnada (electrons) waxay ka boodi karaan qolofka iyangoo dhimbilo (spark) ah.

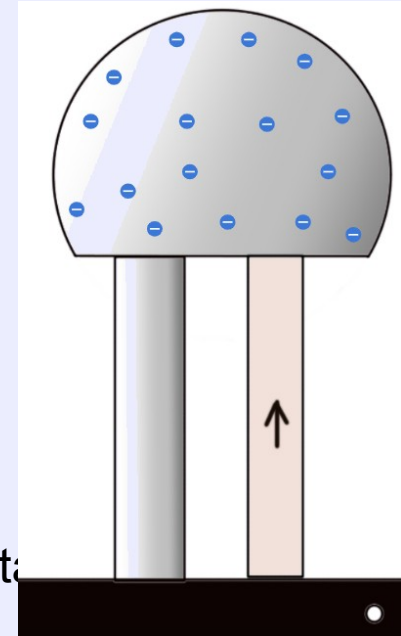
Taabashada qolofka waxay u oggolaanaysaa kharashka inuu ku qulqulo gacantaada oo ku soo gaadho jidhkaaga.



Sida kharashku u dhaqaaqo

Kee ka mid ah weedhahan soo socda ayaa sharxaya sababta kharashka ku yaal koronto-dhaliyaha Van der Graaff uu si siman ugu fido qolofka?

- a** elektaroonnadu is-jiidaan
- b** elektaroonnadu is-celiyaan ✓
- c** qolofku waa gudbiye (conductor) ✓
- d** elektaroonnadu waxay ku dheggan yihiin qolofka birta



Suad waxay taabataa koronto-dhaliyaha
Van der Graaff ka dibna way shidaysaa.
Sharax sababta timaheeda u fidaan.

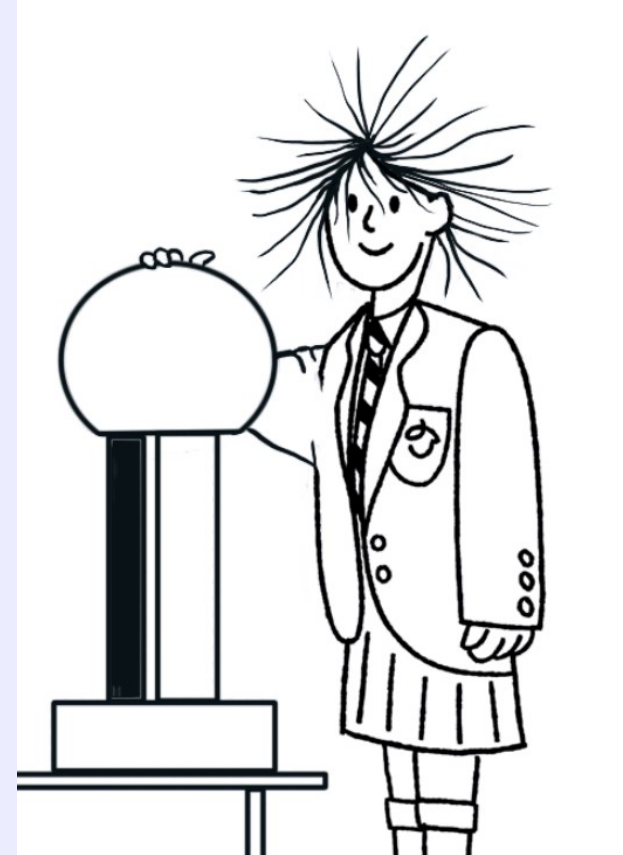


Suad waxay taabataa koronto-dhaliyaha Van der Graaff ka dibna way shidaysaa.

Sharax sababta timaheeda u fidaan.

Marka Suad taabato koronto-dhaliyaha oo la shido, kharashku wuxuu ku soo dhaqaaqaa iyada oo ku faafaya jirkeeda.

Dhammaan timaheeda waxay yeelan doonaan nooc isku mid ah oo kharash ah. Tani waxay keentaa in timaha kala duwan ay is-celiyan oo dib u soo baxaan.



Korantada taagan: kharash



Xaggee ayay kharashku ka yimaadaa?



Sida kharashku u dhaqaaqo



Isticmaalka iyo dhibaatooyinka korantada taagan (static electricity)

Hillaaca waxaa keena ururinta kharashka taagan.

Qas ku jira daruurtu waxay keentaa in kharashku ururo.

Marka kharashku gaaro heer sare oo ku filan, wuxuu ku boodaa hawada sida hillaac.



Isticmaalka iyo dhibaatooyinka korantada taagan

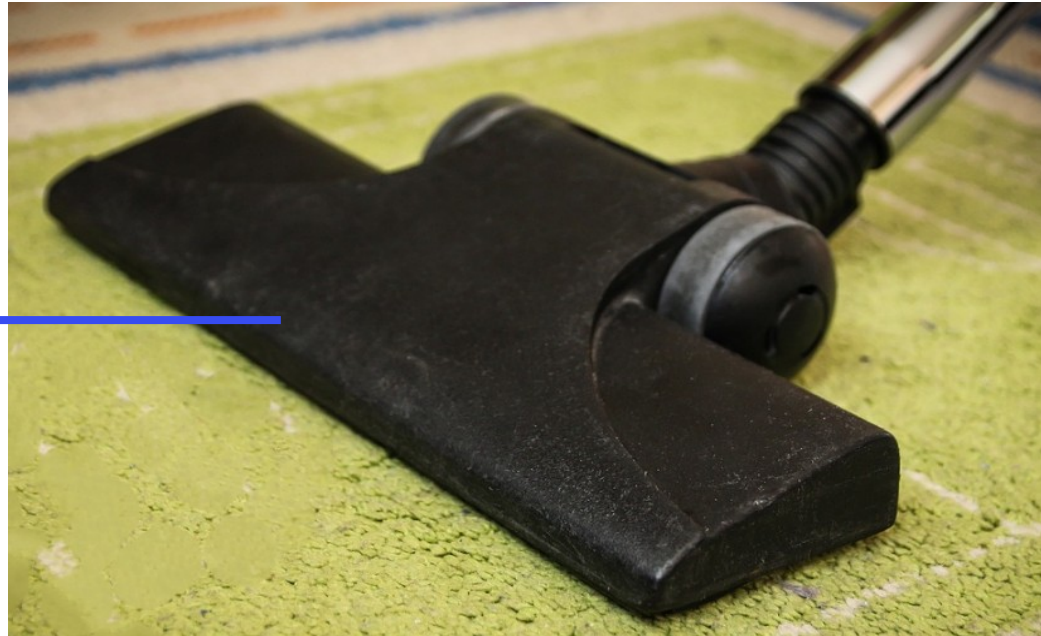
Mararka qaarkood waxaan dareemi karnaa sii-daynta korantada (ama dhimbilo) markaan taabano walxaha.



Is-jiidashada dharka ama roogagu waxay badanaa sabab u tahay ururinta kharashka taagan.

Qaybta vacuum cleaner waxay yeelataa kharash taagan sababtoo ah is-jiidashada hawada dhex marta.

Kharashka taagan wuxuu soo
jiitaa boodhka.



Isticmaalka iyo dhibaatooyinka korantada taagan

Daabacayaasha laser waxay isticmaalaan kharash taagan si ay u soo jiitaan toner-ka (khadka budada ah) meelaha saxda ah.



Roolerku wuxuu ururiyaa qaab kharash taagan oo soo jiita toner-ka.

Kee ka mid ah kuwan soo socda waa saameyn faa'iido leh oo korantada taagan?

a

boodhka ku dheggan qalabka

b

hillaac (lightning strikes)

c

daabacayaasha laser (laser printers) ✓

d

helisti shoogga taagan (static shocks)

Maamulaha hudheelku wuxuu rabaa inuu ku rakibo roog cusub oo adag oo ka samaysan nylon.

Sharax sababta ay tani u keeni karto dhibaato.



Maamulaha hudheelku wuxuu rabaa inuu ku rakibo roog cusub oo adag oo ka samaysan nylon.

Sharax sababta ay tani u keeni karto dhibaato.

Marka dadku ku socdaan roogga, waxaa jiri doona is-jiid (friction) oo u dhexeeya kabahooda iyo roogga.

Roogga nylon waa insulater (insulator) wuxuuna ku fiican yahay inuu keeno koronto taagan (static charge) oo urursan.

Martida hudheelka ayaa laga yaabaa inay helaan shoog taagan (static shocks) sababtoo ah ururinta korontadan.



Soo koobid Korantada taagan (static electricity): koronto (charge)

Atomyada (atoms) caadi ahaan waxay ka kooban yihiin tirooyin isleeg oo protons ah oo leh koronto togan iyo electrons ah oo leh koronto taban.

Korantada taban (electrons) waxaa laga wareejin karaa atomka iyadoo la xoqo.

Walxuhu waxay noqon karaan kuwa koronto taban leh iyagoo helaya electrons, ama koronto togan leh iyagoo luminaya electrons.

Generator-ka Van de Graaff wuxuu dhali karaa koronto taagan (static charge) iyadoo la adeegsanayo is-jiid (friction).

Korantada taagan (static electricity) badanaa waxay noqon kartaa dhibaato, laakiin waxay kaloo noqon kartaa mid faa'iido leh.

