Pardeep:

L-1

29|07|2020

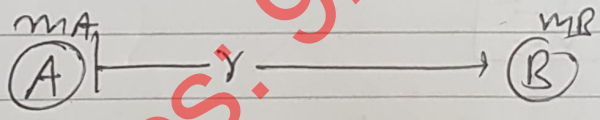
[Introduction of Physics]:

Q Explain the fundamental forces in Nature?

A: (4) Type of fundamental force

1. Gravitational force
2. Electrostatic force
3. Weak Nuclear force
4. Strong Nuclear force

* Gravitational force. → It is attractive force B/w two Bodies in universe [f_g]

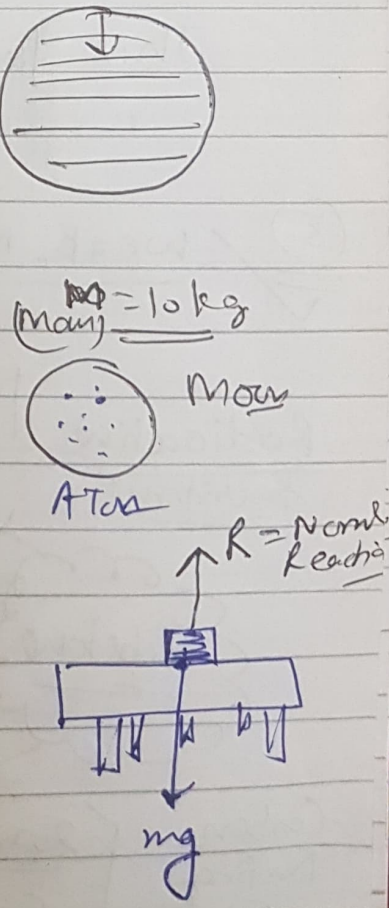


→ $f \propto m_A m_B$ (i)

→ $f \propto \frac{1}{r^2}$ (ii)

→ $f \propto \frac{m_A m_B}{r^2}$

→ $f = \frac{G m_A m_B}{r^2}$



* → It is valid for Microscopic particles.

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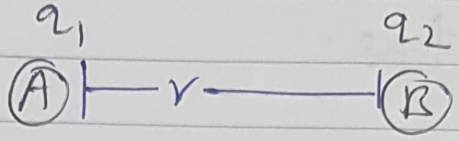
② Electrostatic force: This force is act B/w charges which is separated By distance (r)



$\rightarrow f \propto q_1 q_2$ — (1)

$\rightarrow f \propto \frac{1}{r^2}$ — (2)

$f \propto \frac{q_1 q_2}{r^2}$

$\rightarrow \boxed{f = \frac{K q_1 q_2}{r^2}}$

q_1	q_2	Rq
+	+	R
−	−	R
+	−	A
−	+	A

This force is attractive or Repulsive.

③ Weak Nuclear force: → Weak Nuclear force, By which particles Bind in Radioactive Substance

Radioactive Substance → rays → The property, By which Substance emit rays from itself for Stability called "Radioactivity"

Substance → α - rays
Substance → β - rays
Substance → γ - rays

Carbon Dating element: $\frac{2020}{C=100} \xrightarrow{50} \frac{2020}{50} \rightarrow \frac{2020}{0}$

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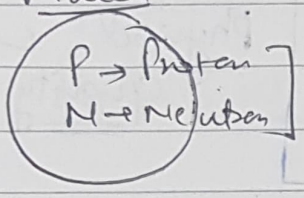
It is weakest force

④ Strong Nuclear force → The force By which Proton & Neutron Binds in Nucleus.
This is called "Strong Nuclear force"

Nucleus



It is Strongest force in Nature

① Meson + Hadrilton Mate
②

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