

# **23-mavzu: Magnit maydonning tokli o‘tkazgich va elektr zaryadlariga ta’siri.**

## **REJA:**

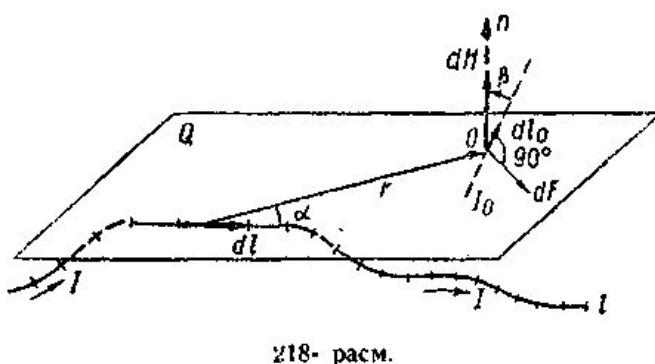
- 1. Amper kuchi.**
- 2. Parallel toklarning o‘zaro ta’siri.** Magnit maydonni xarakatdagi zaryadga ta’siri.  
Lorens kuchi. Bir jinsli magnit maydonida zaryadli zarralar harakati.
- 3. Xoll effekti.**
- 4. Tezlatgichlar**

# 1. Amper kuchi.



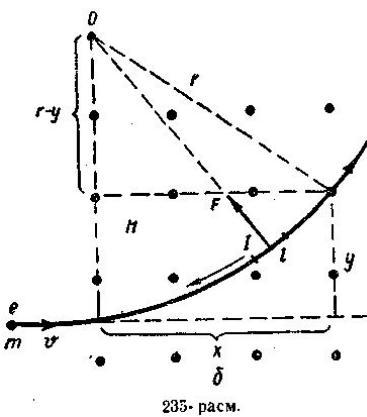
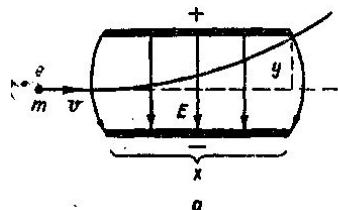
$$dH = \frac{Idl \sin \alpha}{4\pi r^2}$$

$$dF_{12} = \frac{\mu_0 I I_0 \cdot dl \cdot dl_0 \sin \alpha \sin \beta}{4\pi r^2}$$

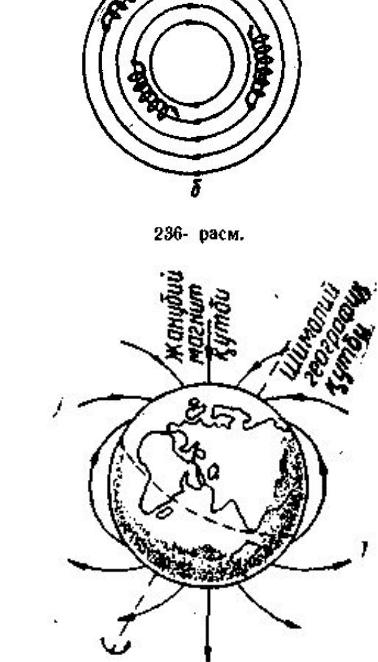
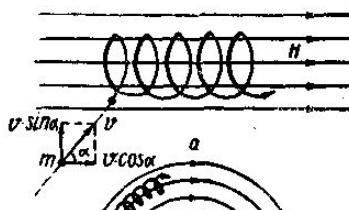


$$dF_{12} = \mu_0 I_0 dl_0 dH \sin \beta$$

## 2. Parallel toklarning o‘zaro ta’siri. Magnit maydonni xarakatdagi zaryadga ta’siri. Lorens kuchi. Bir jinsli magnit maydonida zaryadli zarralar harakati.



$$F = eE = ma$$



237- расм.

$$y = \frac{ax^2}{2v^2} \quad y = \frac{e}{m} \frac{E}{2v^2} x^2 \quad y = \frac{at^2}{2}$$

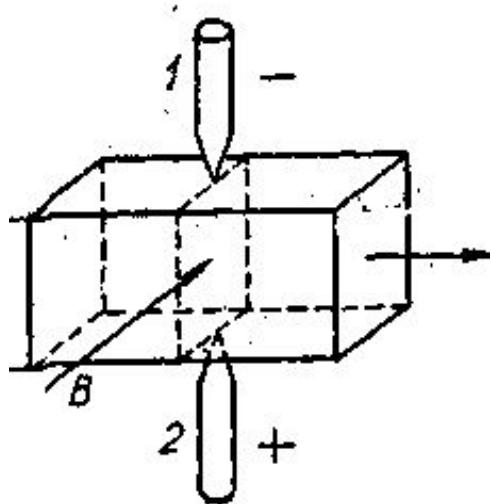
$$F = \mu_0 I H l \quad t = \frac{v}{x} \quad ev\mu_0 H = \frac{mv^2}{r}$$

$$F = IBl = \mu_0 \mu I H l \quad T = \frac{s}{v} = \frac{2\pi R}{v}$$

$$F = ev\mu_0 H \quad r = \frac{mv}{e\mu_0 H} \quad I = \frac{e}{t}$$

$$F = \mu_0 H \frac{e}{l} \quad T = \frac{2\pi m}{\omega}$$

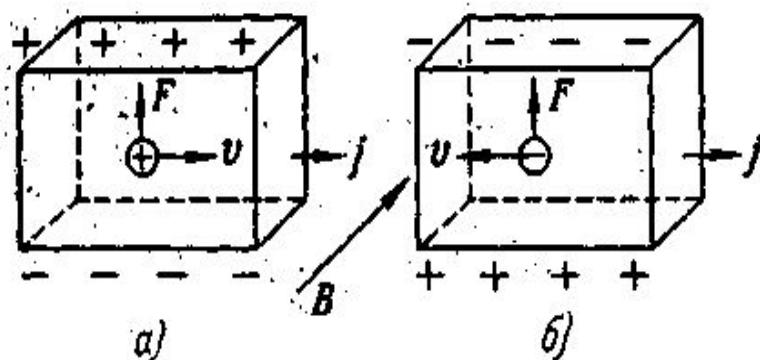
### 3. Холл эффекти.



257-расм. Холл эффекти.

$$j = env \quad R = \frac{1}{ne}$$

$$U = Ed = vBd$$

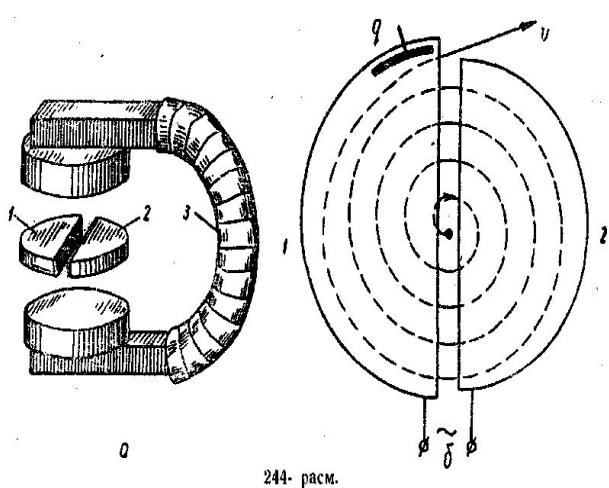
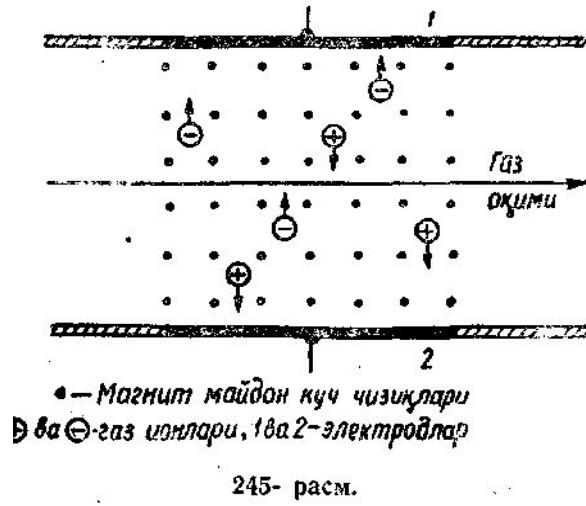


258-расм. Холл эффектида күндаланғ потенциаллар фарқиниң шорасы үтказгычдаги заряд ташувчилар ишорасига бөллиқ бўлади.

$$U = RdjB$$

$$U = \frac{1}{ne} djB$$

# 4. Tezlatgichlar



TSiklotronning printsipial sxemasi 244.a-rasmida tasvirlangan. Kuchli 3 elektromagnitniig qutb uchlari orasida tezlatuvchi vakuum kamera joylashtirilgan (u rasmda ko'rsatilmagan), kamerada yarim doira shaklidagi ikkita 1 va 2 metall qutichalar joylashtiriladi, bu qutichalar *duantlar*\* deb ataladi. Duantlarga  $T$  davrli o'zgaruvchan kuchlanish beriladi, bu kuchlanish duantlar orasidagi oraliqda xuddi shunday davrli o'zgaruvchan elektr maydoni vujudga keltiradi. Elektromagnitning magnit maydoni duantlarning elektr maydoniga perpendikular bo'ladi.

$$T = \frac{2\pi m}{e\mu_0 H}$$