Laborator 5 Electricitate

(a) $C = ?$

   $d - cnst$

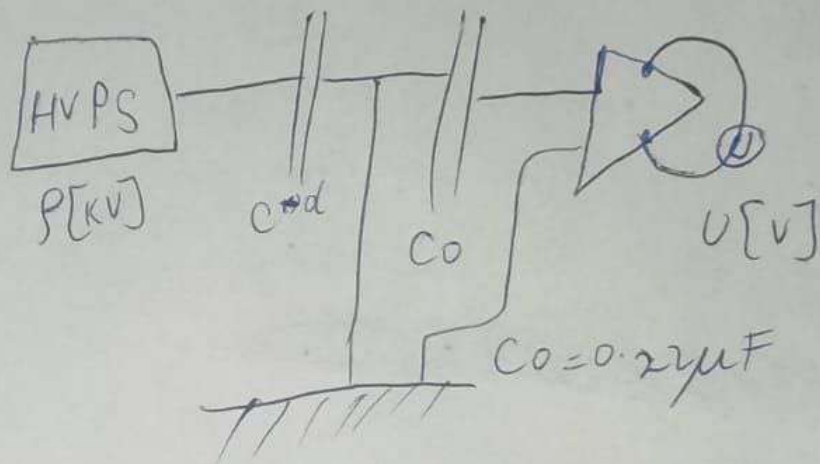(b) $C \sim \dfrac{1}{d}$

   $\varrho - cnst$

(c) $\varepsilon_r = \dfrac{C_{izolator}}{C_{aer}}$

   $d - cnst$

   $\varrho - cnst$

$d = 0,5$ cm

HVPS $\varrho [kV]$ $c \cdot d$ C_0 $U[V]$

$C_0 = 0.22 \mu F$

rezistază Condensatorul C_0

tabela

1. $\varrho = 1,1$ kV	$U = 0,32$ V	$d = 0,9$ cm
2. $\varrho = 1,4$ kV	$U = 0,42$ V	$d = 0,9$ cm
3. $\varrho = 1,7$ kV	$U = 0,52$ V	$d = 0,9$ cm
4. $\varrho = 2$ kV	$U = 0,62$ V	$d = 0,9$ cm
5. $\varrho = 2,3$ kV	$U = 0,72$ V	$d = 0,9$ cm
6. $\varrho = 2,6$ kV	$U = 0,80$ V	$d = 0,9$ cm
7. $\varrho = 2,9$ kV	$U = 0,86$ V	$d = 0,9$ cm
8. $\varrho = 3,2$ kV	$U = 0,98$ V	$d = 0,9$ cm

$C_0 = \dfrac{Q}{\varrho}$

$Q = C_0 \varrho = 0,22 \cdot 10^{-6} \cdot$
$1100 = 9,22 \cdot 10^{-6}$.
$11 \cdot 10^2 = 11 \cdot 0,22 \cdot 10$
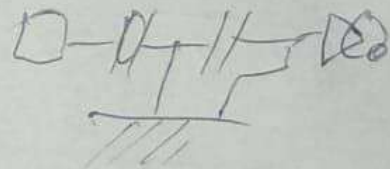$\boxed{Q = 2,42 \cdot 10^{-4}}$

tabel ⓑ

1. $\xi = 2\,kV$; $U = 1\,V$; $d = 0,5\,cm$
2. $\xi = 2\,kV$; $U = 9,8\,V$; $d = 0,8\,cm$
3. $\xi = 2\,kV$; $U = 0,66\,V$; $d = 1,1\,cm$
4. $\xi = 2\,kV$; $U = 0,48\,V$; $d = 1,4\,cm$
5. $\xi = 2\,kV$; $U = 0,44\,V$; $d = 1,7\,cm$
6. $\xi = 2\,kV$; $U = 0,4\,V$; $d = 2\,cm$
7. $\xi = 2\,kV$; $U = 0,38\,V$; $d = 2,1\,cm$

$$C = \frac{Q}{\varphi}$$

tabel ⓒ

1. $\xi = 5\,kV$; $U = 3,8\,V$; $d = 1\,cm$ — izolator plastic
2. $\xi = 5\,kV$; $U = 1,3\,V$; $d = 1\,cm$ — izolator aer
3. $\xi = 2,5\,kV$; $U = 2\,V$; $d = 1\,cm$ — plastic
4. $\xi = 2,5\,kV$; $U = 0,74\,V$; $d = 1\,cm$ — aer