

.





-5 :

-1 :

_____ :

R :

$$U = R.I$$

= U

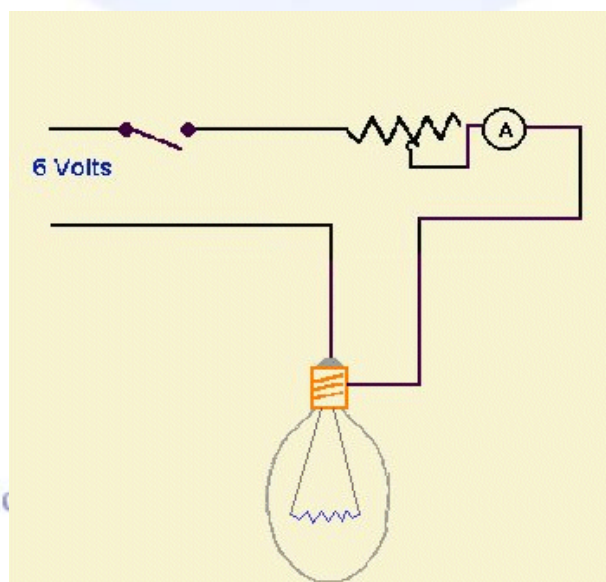
= I

-2 :

-1-2 :

:

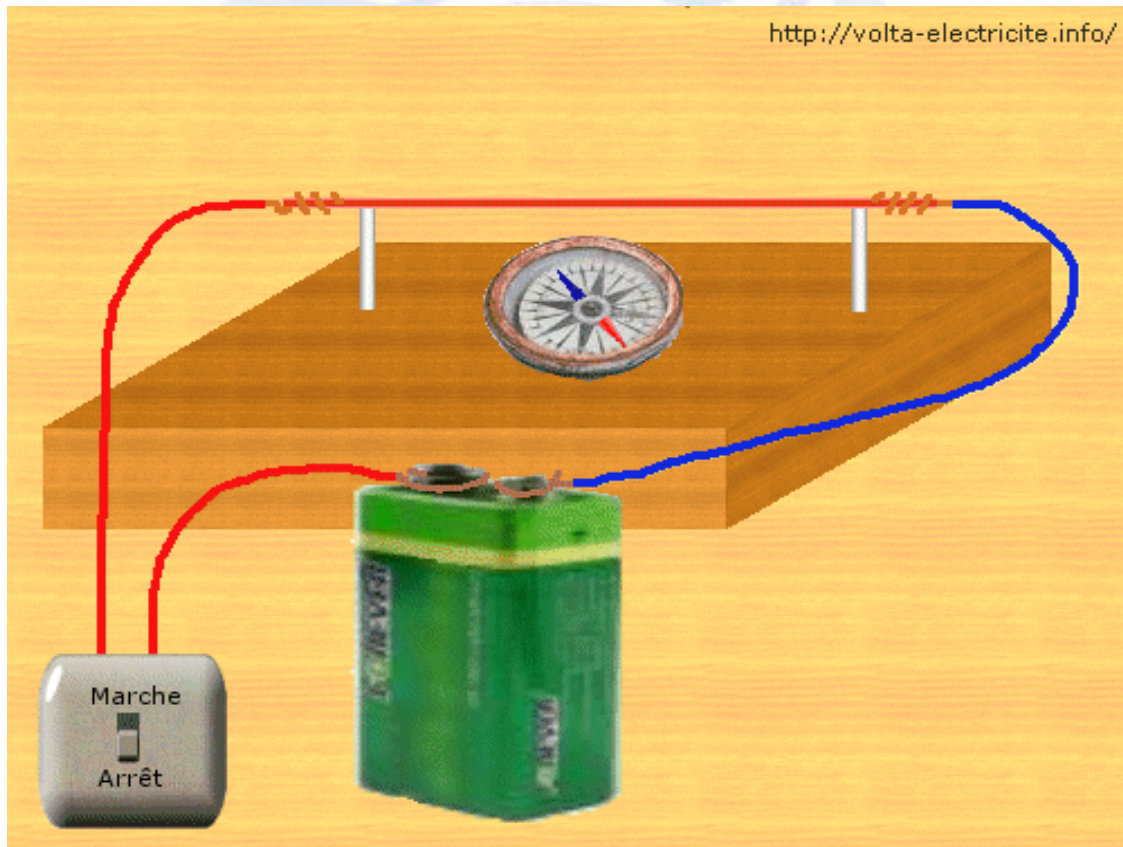
_____ :



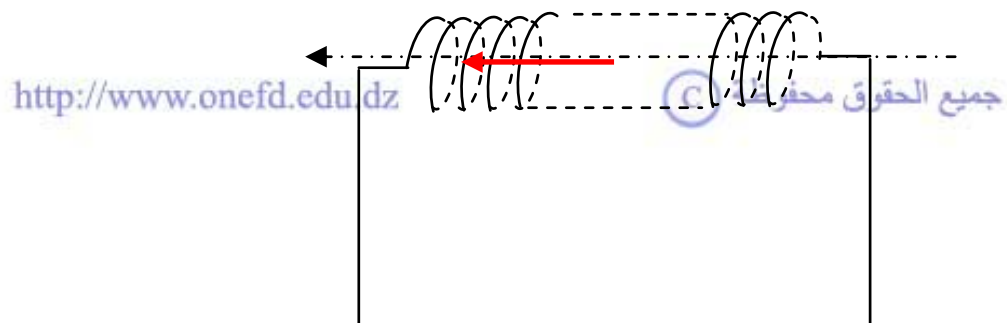
: _____

: -2-2

: _____

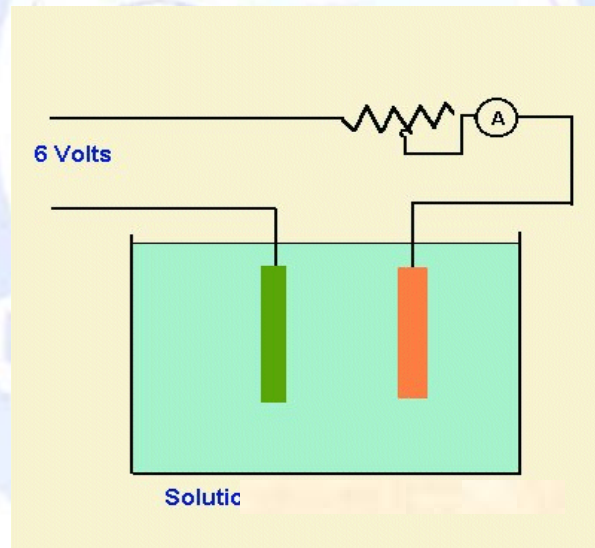


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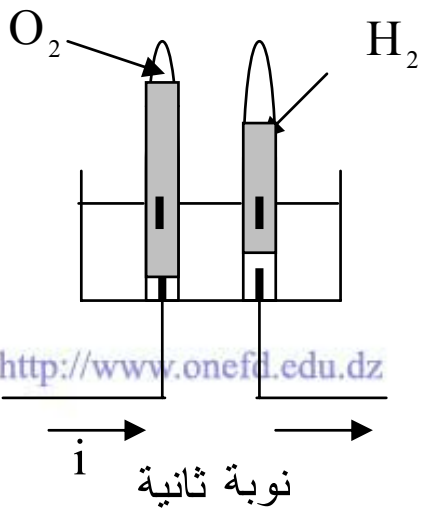


-3-2

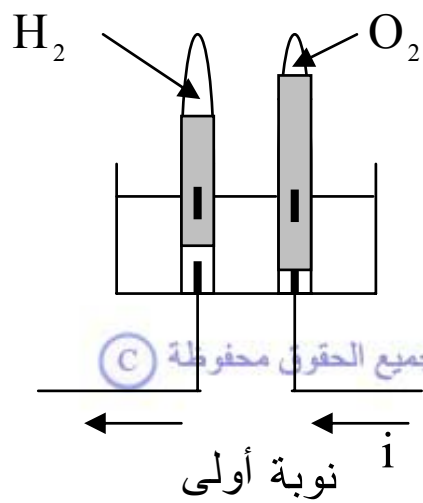
:



:



<http://www.onefdl.edu.dz>



جميع الحقوق محفوظة ©

-3

$$\frac{U}{I} = Z$$

$$U_{\text{eff}} = Z \cdot I_{\text{eff}}$$

(Ω)

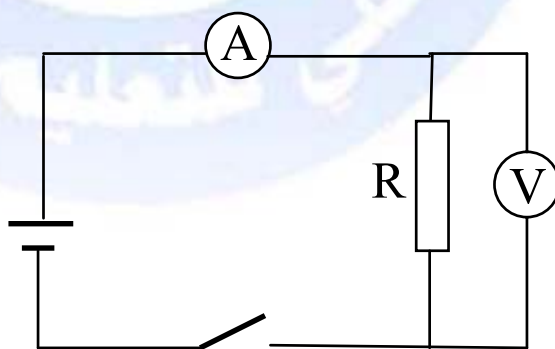
= Z

· Z_L

· Z_C

-1-3

R = 100 Ω



$$\frac{U_R}{I} = R$$

_____ :

:

$$\frac{U_{\text{eff}}}{I_{\text{eff}}} = R$$

f(Hz)	25	50	75	100
$U_{\text{eff}}(\text{V})$	120	120	120	120
$I_{\text{eff}}(\text{mA})$	1,2	1,2	1,2	1,2
$\frac{U_{\text{eff}}}{I_{\text{eff}}}(\Omega)$	100	100	100	100

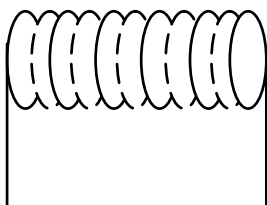
:

$$\frac{U_{\text{eff}}}{I_{\text{eff}}} = \text{Cte} = R$$

_____ :

Z = R

-2-3 _____ :



:

• (r)

• (L)

<http://www.onefd.edu> Hz

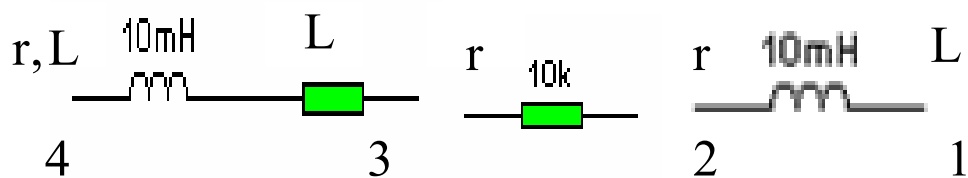
(Henry) جميع الحقوق محفوظة

(1) .

(r ≈ 0) r

(2) .
(4 3) .

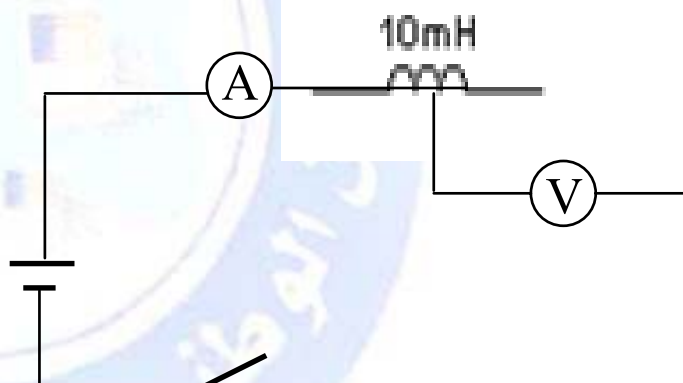
($L \approx 0$) L
 L r



: _____

: _____

:



L r

U_L }

$$\frac{U_L}{I} = r$$

: _____

$$\frac{U_{\text{eff}}}{I_{\text{eff}}} \neq R$$

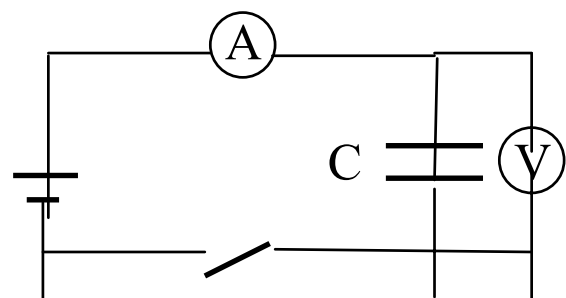
f(Hz)	25	50	75	100
$U_{\text{eff}}(\text{V})$	120	120	120	120
$I_{\text{eff}}(\text{mA})$	433,05	216,76	144,54	108,41
$Z = \frac{U_{\text{eff}}}{I_{\text{eff}}}(\Omega)$	277,10	553,60	830,22	1106,91

_____ :
 . $Z > R$ $Z \neq R$ •
 •
 •
 _____ :

_____ (r L)

$$Z = \sqrt{r^2 + 4\pi^2 f^2 . L}$$

_____ -3-3
 _____ :
 _____ :



f(Hz)	25	50	75	100
U _{eff} (V)	120	120	120	120
I _{eff} (A)	0,30	0,60	0,90	1,20
$Z = \frac{U_{\text{eff}}}{I_{\text{eff}}} (\Omega)$	400,00	200,00	133,33	100,00

_____ :

$$Z = \frac{U_{\text{eff}}}{I_{\text{eff}}} = \frac{1}{4\pi^2 f^2 \cdot C} :$$

_____ :

0

$$Z = \frac{1}{4\pi^2 f^2 \cdot C}$$

1:

(r L)

:
(1)

$$U = f(I)$$

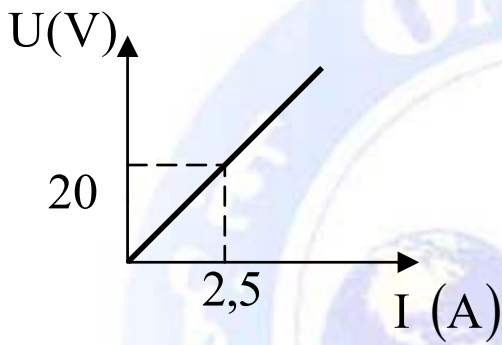
:1

$$f = 50 \text{ Hz}$$

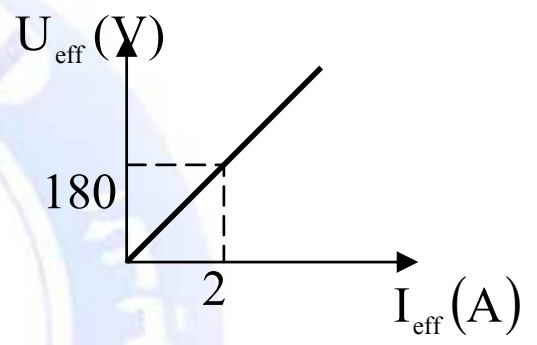
$$U_{\text{eff}} = f(I_{\text{eff}})$$

:2

(2)



مخطط 1



مخطط 2

/1

a₂ a₁

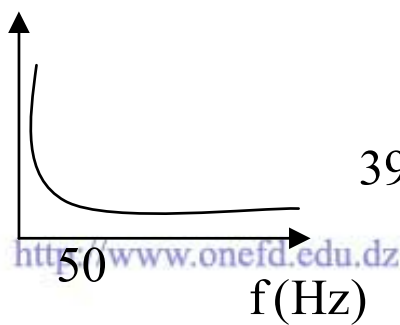
/2

L Z_L r

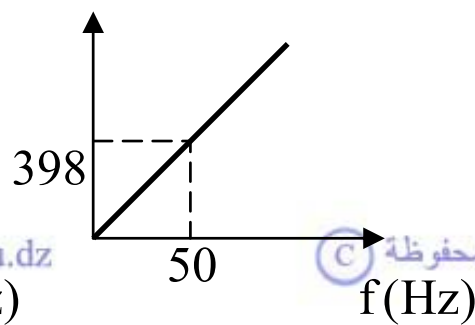
/3

2:

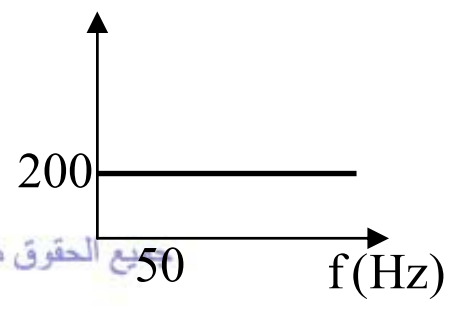
$$Z_R = f(f) ; Z_C = f(f) ; Z_L = f(f)$$



البيان (3)



البيان (2)



البيان (1)

/1

R /2

3:

(1) (2) (3)

:(1)

:(2)

/1



:1

/1

: 1

$$(1) \quad \dots \frac{U}{I} = a_1 \quad U = a_1 \cdot I$$

$$(2) \quad \dots \frac{U}{I} = R$$

$$(3) \dots a_1 = R : (2) (1)$$

: 2

$$(4) \quad \dots \frac{U_{\text{eff}}}{I_{\text{eff}}} = a_2 \quad U_{\text{eff}} = a_2 \cdot I_{\text{eff}}$$

$$(5) \quad \dots \frac{U_{\text{eff}}}{I_{\text{eff}}} = Z$$

$$: (4) (3)$$

$$(6) \quad \dots a_2 = Z$$

/2

$$a_1 = \frac{\Delta U}{\Delta I} = \frac{20 - 0}{2,5 - 0} = 8 \Omega$$

$$a_2 = \frac{\Delta U_{\text{eff}}}{\Delta I_{\text{eff}}} = \frac{180 - 0}{2 - 0} = 90 \Omega$$

$$a_1 \neq a_2$$

$$\underline{L, Z, r} \quad /3$$

$$R = 8 \Omega : (3)$$

$$Z = 90 \Omega : (6)$$

$$Z^2 = r^2 + 4\pi^2 f^2 .L$$

$$L = \frac{Z^2 - r^2}{4\pi^2 .f^2}$$

$$L = \frac{90^2 - 8^2}{4.\pi^2 .50^2} = 0,081H$$

$$L = 0,081 H$$

:2

(1)

:

$$.Z = R$$

$$Z = Cte$$

(2)

:

$$(1)... Z = a . f$$

$$(2)... Z = \sqrt{r^2 + 4\pi^2 f^2 .L} :$$

$$r = 0$$

$$(3)... Z = 2\pi\sqrt{L}.f : (2)$$

$$\frac{1}{2} \\ R = 200 \Omega$$

$$: (3) (1)$$

$$(4)... a = 2\pi.\sqrt{L}$$

$$:(2)$$

$$a = \frac{\Delta Z}{\Delta f} = \frac{398 - 0}{50 - 0} = 7,96\Omega / Hz$$

$$L = \frac{a^2}{4\pi^2} : (4)$$

$$L = \frac{7,96}{4\pi^2} = 0,20H$$

$$L = 0,2H$$

3:

:(1)

:(2)

:(3)

