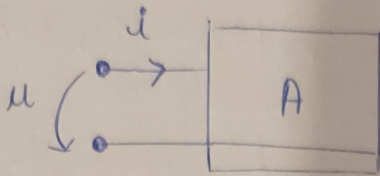


TEMĂ CURS 13

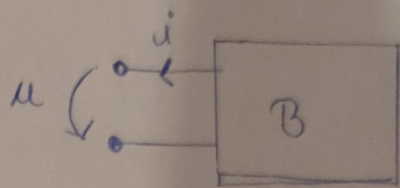
①



regula de la receptoare



putere primită (absorbită) de
dipol la borne



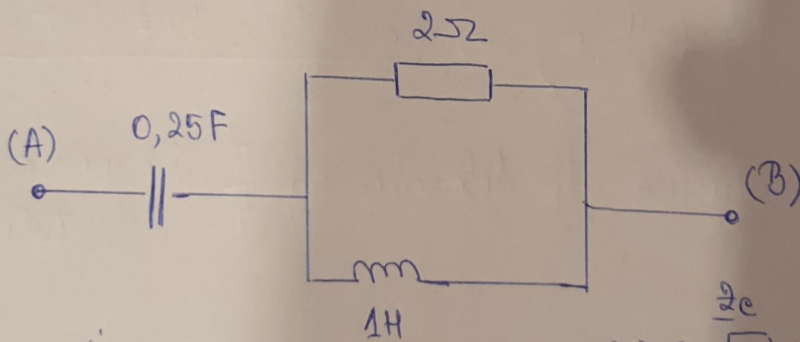
regula de la generator



putere cedată de dipol
pe la borne.

② Calculați mărimile \underline{Z}_{AB} , R_{AB} , X_{AB} , \underline{Y}_{AB} , G_{AB} , B_{AB} , \underline{Y}_{AB} .

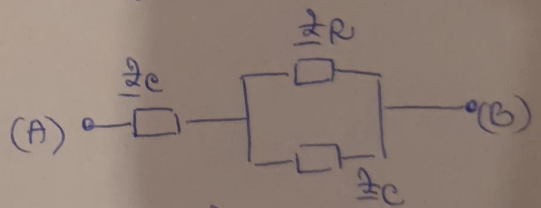
$\omega = 2 \text{ rad/s}$. \underline{I}_{ef} , \underline{U}_{ef}



$$\underline{Z}_C = \frac{-j}{\omega C} = \frac{-j}{2 \cdot 0,5} = -2j$$

$$\underline{Z}_L = j\omega L = 2j$$

$$\underline{Z}_R = 2$$



$$\Rightarrow \underline{Z}_{AB} = \underline{Z}_C + \frac{\underline{Z}_R \cdot \underline{Z}_L}{\underline{Z}_R + \underline{Z}_L} = -2j + \frac{2j \cdot 2j}{2j + 2} =$$

$$= -2j + \frac{2j}{j+1} = -2j + \frac{2j(j-1)}{-2} =$$

$$= -2j - 2j(j-1) = -2j + 1 + j = 1 - j$$

$$\underline{Z}_{AB} = 1 - j \Rightarrow R_{AB} = 1, X_{AB} = -1$$

$$\underline{Y}_{AB} = \frac{1}{\underline{Z}_{AB}} = \frac{1}{1-j} = \frac{1+j}{2}$$

(admitanță complexă)

→ rezistență de curent alt. → reactanță complexă

→ impedanță complexă

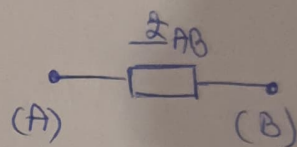
$$G_{AB} = \frac{1}{2} \text{ susceptanță } ; B = \frac{1}{2} \text{ conductanță}$$

$$Y_{AB} = \sqrt{\frac{1}{4} + \frac{1}{4}} = \frac{\sqrt{2}}{2}$$

$$\underline{Z}_{AB} = 1 - j = \sqrt{2} \cdot e^{j \cdot \frac{3\bar{u}}{4}} = \sqrt{2} \left(\cos \frac{3\bar{u}}{4} + j \sin \frac{3\bar{u}}{4} \right)$$

$$\varphi = \arctg \frac{-1}{1} = -\frac{\bar{u}}{4}$$

$$\sin(\bar{u} - \frac{\bar{u}}{4}) = \sin \frac{\bar{u}}{4} = \frac{1}{\sqrt{2}}$$



$$\varphi = -\frac{\bar{u}}{4} \in (-\frac{\bar{u}}{2}, 0) \Rightarrow \text{caracter rezistiv capacitiv}$$

$$\varphi = -\frac{\bar{u}}{4} \Rightarrow \text{Tensiunea este defazată cu } \frac{\bar{u}}{4} \text{ în urma curen-
tului}$$

$$\frac{U_{ef}}{I_{ef}} = \sqrt{2} \Omega$$