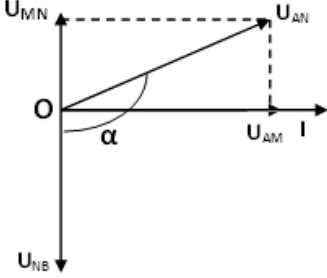
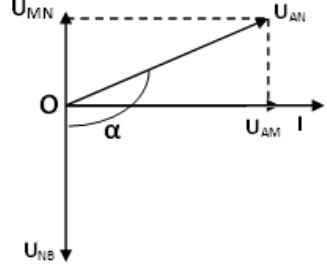
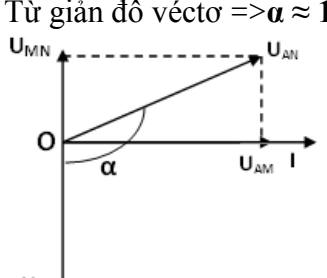


ĐÁP ÁN ĐỀ LÝ (2016-2017) PHẦN TỰ LUẬN

CÂU	GIẢI TÓM TẮT			ĐIỂM
	MÃ ĐỀ: L01;L04,L07;L10;L13;L16,L19,L22	MÃ ĐỀ: L02;L05,L08;L11;L14;L17,L20,L23	MÃ ĐỀ: L03;L06,L09;L12;L15;L18,L21,L24	
Câu 1	1. $T = 2\pi\sqrt{\frac{m}{k}} = 0,2 \text{ s}$	1. $T = 2\pi\sqrt{\frac{m}{k}} = 0,314 \text{ s}$	1. $T = 2\pi\sqrt{\frac{m}{k}} = 0,4 \text{ s}$	0,25 đ
	2. $A = 10 \text{ cm}; E = \frac{1}{2}kA^2 = 0,5 \text{ J}$	2. $A = 8 \text{ cm}; E = \frac{1}{2}kA^2 = 0,64 \text{ J}$	2. $A = 6 \text{ cm}; E = \frac{1}{2}kA^2 = 0,036 \text{ J}$	0,25 đ
	3. $t = 0 \begin{cases} x = -10 \text{ cm} \\ v = 0 \end{cases} \rightarrow \varphi = \pm\pi \text{ (rad)}$	3. $t = 0 \begin{cases} x = 8 \text{ cm} \\ v = 0 \end{cases} \rightarrow \varphi = 0 \text{ (rad)}$	3. $t = 0 \begin{cases} x = 0 \\ v < 0 \end{cases} \rightarrow \varphi = \frac{\pi}{2} \text{ (rad)}$	0,5 đ
Câu 2	1a. $\begin{cases} Z_L = \omega L = 100\pi \frac{1}{10\pi} = 10\Omega \\ Z_C = \frac{1}{\omega C} = \frac{1}{100\pi \cdot \frac{10^{-3}}{2\pi}} = 20\Omega \end{cases}$ $\Rightarrow Z = \sqrt{R^2 + (Z_L - Z_C)^2} = 20\Omega$	1a. $\begin{cases} Z_L = \omega L = 100\pi \frac{3}{20\pi} = 15\Omega \\ Z_C = \frac{1}{\omega C} = \frac{1}{100\pi \cdot \frac{10^{-3}}{\pi}} = 10\Omega \end{cases}$ $\Rightarrow Z = \sqrt{R^2 + (Z_L - Z_C)^2} = 10\Omega$	1a. $\begin{cases} Z_L = \omega L = 100\pi \frac{2}{5\pi} = 40\Omega \\ Z_C = \frac{1}{\omega C} = \frac{1}{100\pi \cdot \frac{10^{-3}}{2\pi}} = 20\Omega \end{cases}$ $\Rightarrow Z = \sqrt{R^2 + (Z_L - Z_C)^2} = 40\Omega$	0,25 đ
	1b. $R = 10\sqrt{3}\Omega = Z_L\sqrt{3} \Rightarrow U_{AM} = U_{MN}\sqrt{3}$ Từ giản đồ vectơ $\Rightarrow \alpha = 2\pi/3 \text{ (120}^\circ\text{)}$ 	1b. $Z_L = 15\Omega = R\sqrt{3} \Rightarrow U_{MN} = U_{AM}\sqrt{3}$ Từ giản đồ vectơ $\Rightarrow \alpha = 5\pi/6 \text{ (150}^\circ\text{)}$ 	1b. $R = 20\sqrt{3}\Omega; Z_L = 40\Omega \Rightarrow U_{MN} = \frac{2\sqrt{3}}{3}U_{AM}$ Từ giản đồ vectơ $\Rightarrow \alpha \approx 139^\circ \text{ (0,77}\pi \text{ rad)}$ 	0,25 đ
	2. $\begin{cases} U_{LC} = \sqrt{U_{AB}^2 - U_R^2} = 15 \text{ V} \\ Z_{LC} = \sqrt{(Z_L - Z_C)^2} = 10\Omega \\ I = \frac{U_{LC}}{Z_{LC}} = 1,5 \text{ A} \Rightarrow U_L = IZ_L = 15 \text{ V} \end{cases}$	2. $\begin{cases} U_{LC} = \sqrt{U_{AB}^2 - U_R^2} = 16 \text{ V} \\ Z_{LC} = \sqrt{(Z_L - Z_C)^2} = 5\Omega \\ I = \frac{U_{LC}}{Z_{LC}} = 3,2 \text{ A} \Rightarrow U_L = IZ_L = 48 \text{ V} \end{cases}$	2. $\begin{cases} U_{LC} = \sqrt{U_{AB}^2 - U_R^2} = 18 \text{ V} \\ Z_{LC} = \sqrt{(Z_L - Z_C)^2} = 20\Omega \\ I = \frac{U_{LC}}{Z_{LC}} = 0,9 \text{ A} \Rightarrow U_L = IZ_L = 36 \text{ V} \end{cases}$	0,5 đ