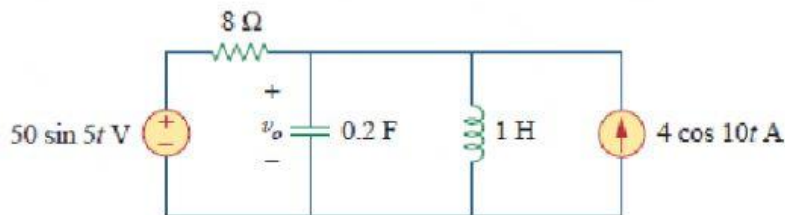


แบบฝึกหัดที่ 13	เรื่อง Superposition(2)	
รหัส 30104-1003	วิชา วงจรไฟฟ้า 2	
ชื่อ-สกุล	ชั้น	เลขที่

จงหาค่า  $v_o$  จากรูปวงจรต่อไปนี้ โดยใช้ Superposition theorem



**วิธีทำ** จากรูปวงจร แยกคิดผลของวงจรครั้งละ 1 แหล่งจ่าย (Shot circuit , Open circuit )

1. คิดผลของ  $v_s = 50 \sin 5t V$  ดังนั้นแหล่งจ่าย  $i_s = 4 \cos 10t A$  จึงต้อง .....

$$V'_s = \boxed{\phantom{00}} \angle \boxed{\phantom{00}}^\circ \quad \omega' = \boxed{\phantom{00}} \quad \boxed{\phantom{00}}$$

$$X'_C = \frac{\boxed{\phantom{00}}}{\omega' \boxed{\phantom{00}}} = \frac{\boxed{\phantom{00}}}{\boxed{\phantom{00}} \boxed{\phantom{00}}} = \boxed{\phantom{00}} \Omega$$

$$X'_L = j\omega' \boxed{\phantom{00}} = j \boxed{\phantom{00}} \boxed{\phantom{00}} = \boxed{\phantom{00}} \Omega$$

$$Z'_1 = X'_C // \boxed{\phantom{00}} = (\boxed{\phantom{00}} \boxed{\phantom{00}} j5) \boxed{\phantom{00}} (\boxed{\phantom{00}} \boxed{\phantom{00}})$$

$$= \boxed{\phantom{00}} \boxed{\phantom{00}} = \boxed{\phantom{00}} \angle \boxed{\phantom{00}}^\circ \quad \boxed{\phantom{00}} \angle \boxed{\phantom{00}}^\circ$$

$$= \boxed{\phantom{00}} \angle \boxed{\phantom{00}}^\circ \Omega$$

หา  $V'_o = \frac{\boxed{\phantom{00}}}{R \boxed{\phantom{00}}} \boxed{\phantom{00}} \quad (\text{ใช้ VDR.})$

$$= \frac{\boxed{\phantom{00}}}{\boxed{\phantom{00}} \boxed{\phantom{00}}} \boxed{\phantom{00}}$$

$$= \boxed{\phantom{00}} \angle \boxed{\phantom{00}}^\circ \quad \boxed{\phantom{00}} \angle \boxed{\phantom{00}}^\circ$$

$$= \boxed{\phantom{00}} \angle \boxed{\phantom{00}}^\circ \quad \boxed{\phantom{00}}$$

ดังนั้น  $v'_o = \boxed{\phantom{00}} (\boxed{\phantom{00}} \angle \boxed{\phantom{00}}^\circ) \quad \boxed{\phantom{00}}$

2. คิดผลของ  $i_s = 4 \cos 10t A$  ดังนั้นแหล่งจ่าย  $v_s = 50 \sin 5t A$  จึงต้อง .....

$$I_s = \boxed{\phantom{00}} \angle \boxed{\phantom{00}}^\circ \quad ; \quad \omega'' = \boxed{\phantom{00}} \quad \boxed{\phantom{00}}$$

$$X_C'' = \frac{\boxed{\phantom{000}}}{\omega'' \boxed{\phantom{000}} \boxed{\phantom{000}}} = \frac{\boxed{\phantom{000}}}{\boxed{\phantom{000}} \boxed{\phantom{000}} \boxed{\phantom{000}}} = \boxed{\phantom{000}} \Omega$$

$$X_L'' = j\omega'' \boxed{\phantom{000}} = j \boxed{\phantom{000}} \boxed{\phantom{000}} \boxed{\phantom{000}} = \boxed{\phantom{000}} \Omega$$

$$G = 1 \boxed{\phantom{000}} \boxed{\phantom{000}} = \boxed{\phantom{000}} \boxed{\phantom{000}} \boxed{\phantom{000}} = \boxed{\phantom{000}} \boxed{\phantom{000}}$$

$$B_L = 1 \boxed{\phantom{000}} \boxed{\phantom{000}} = \boxed{\phantom{000}} \boxed{\phantom{000}} \boxed{\phantom{000}} = \boxed{\phantom{000}} \boxed{\phantom{000}}$$

$$B_C = 1 \boxed{\phantom{000}} \boxed{\phantom{000}} = \boxed{\phantom{000}} \boxed{\phantom{000}} \boxed{\phantom{000}} = \boxed{\phantom{000}} \boxed{\phantom{000}}$$

$$Y_T = \boxed{\phantom{000}} \boxed{\phantom{000}} \boxed{\phantom{000}} - jB_L = \boxed{\phantom{000}} \boxed{\phantom{000}} \boxed{\phantom{000}} \boxed{\phantom{000}} \boxed{\phantom{000}} \\ = \boxed{\phantom{000}} \boxed{\phantom{000}} \boxed{\phantom{000}} = \boxed{\phantom{000}} \angle \boxed{\phantom{000}}^\circ \boxed{\phantom{000}}$$

หา  $V_o'' = \boxed{\phantom{000}} \boxed{\phantom{000}} Y_T$

$$= \boxed{\phantom{000}} \angle \boxed{\phantom{000}}^\circ \boxed{\phantom{000}} \boxed{\phantom{000}} \angle \boxed{\phantom{000}}^\circ$$

$$= \boxed{\phantom{000}} \angle \boxed{\phantom{000}}^\circ \boxed{\phantom{000}}$$

ดังนั้น  $v_o'' = \boxed{\phantom{000}} (\boxed{\phantom{000}} \boxed{\phantom{000}}^\circ) \boxed{\phantom{000}}$

### 3. รวมผลของแต่ละแหล่งจ่าย

$$v_o = v_o' \boxed{\phantom{000}} \boxed{\phantom{000}} \\ = \boxed{\phantom{000}} (\boxed{\phantom{000}} \boxed{\phantom{000}}^\circ) \boxed{\phantom{000}} \boxed{\phantom{000}} (\boxed{\phantom{000}} \boxed{\phantom{000}}^\circ) \boxed{\phantom{000}} \text{ *Ans.* }$$