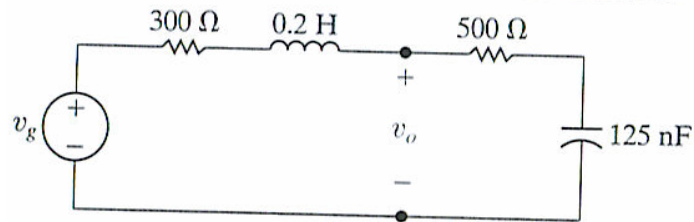


**KING FAHD UNIVERSITY OF PETROLEUM & MINERALS**  
**ELECTRICAL ENGINEERING DEPARTMENT**  
**EE-201 ELECTRIC CIRCUITS**  
**Dr. Ibrahim O. Habiballah**

Sec: 8    Quiz # 7    Ser. #    Name:

I.D.#

Find  $v_o(t)$  by voltage divider;  $v_g(t) = 100 \cos 8000t$  V.



**Solution**

$$\mathbf{V}_o = \mathbf{V}_g \frac{Z_o}{Z_T} = \frac{500 - j1000}{300 + j1600 + 500 - j1000} (100 \angle 0^\circ) = 111.8 \angle -100.3^\circ \text{ V}$$

$$v_o = 111.8 \cos(8000t - 100.3^\circ) \text{ V}$$