

**ĐÁP ÁN**

**Câu 1 (2đ)**

a. 
$$\begin{cases} 10I_1 + 15I_2 = 8 \\ I_1 - I_2 - I_3 = 0 \\ -15I_2 + 5I_3 = 5 \end{cases} \quad 0.75đ$$

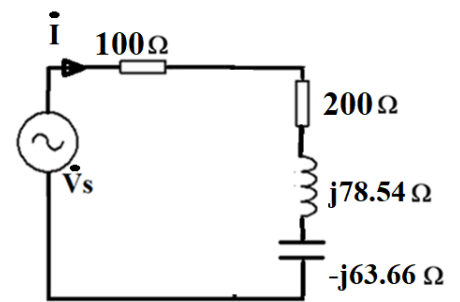
Nghiệm  $I_1 = 47/55 = 0.85A$ ;

$I_2 = -2/55 = -0.036A$

$I_3 = 49/55 = 0.891A \quad 0.75đ$

b.  $P_{\text{nguồn } 8V} = 376/55 = 6.84W \quad 0.25đ$

$P_{R2} = 12/605 = 0.02W \quad 0.25đ$



**Câu 2 (2đ)**

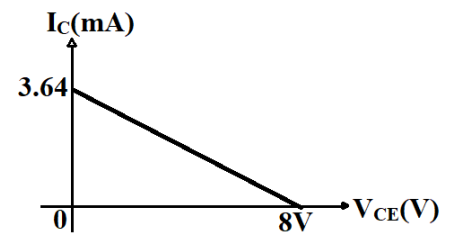
a. Vẽ mạch điện phức  $0.5đ$

$Z = 300 + 14.88j = 300.37 \angle 2.84^\circ (\Omega) \quad 0.5đ$

$I = 0.765 - 0.04j = 0.77 \angle -2.84^\circ (A) \quad 0.5đ$

$i(t) = 0.77 \sin(100\pi t - 2.84^\circ) (A) \quad 0.25đ$

b.  $S = 88.55VA \quad 0.25đ$



**Câu 3 (2đ)**

a.  $I_{BQ} = 7.684 \mu A \quad 0.25đ$

$I_{CQ} = 1.69mA \quad 0.25đ$

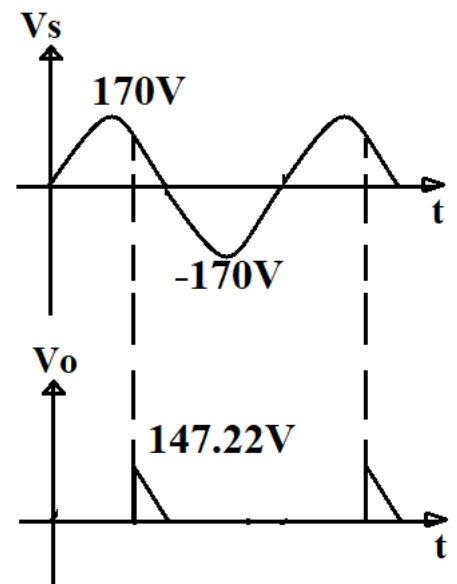
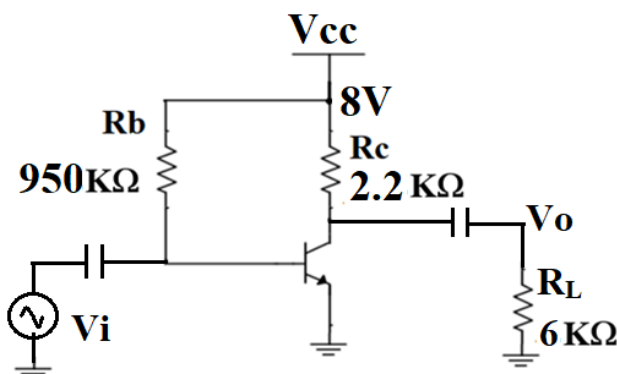
$V_{CEQ} = 4.28V \quad 0.5đ$

b. DCLL:  $I_C = -0.455V_{CE} + 3.64 (mA) \quad 0.25đ$

Vẽ DCLL  $0.25đ$

c.  $A_V = -104.6 \quad 0.25đ$

Vẽ mạch khuếch đại  $0.25đ$



Câu 4 (2đ)

- a. Vẽ  $V_s$  0.5đ  
Vẽ  $V_o$  0.5đ
- b.  $V_o(TB) = 13.53V$  0.5đ  
 $I_o(TB) = 0.68A$  0.5đ

Câu 5 (2đ)

- a.  $V_{o1} = -\frac{R_2}{R_1}V_i = -3V_i$  0.5đ  
 $V_o = (1 + \frac{R_4}{R_3})V_{o1} = 4V_{o1} = -12V_i$  0.5đ
- b.  $V_{o1} = -4.5\sin\omega t$  (V) 0.25đ  
Vẽ  $V_{o1}$  0.25đ  
 $V_o = 18\sin\omega t$  (V) 0.25đ  
Vẽ  $V_o$  0.25đ

