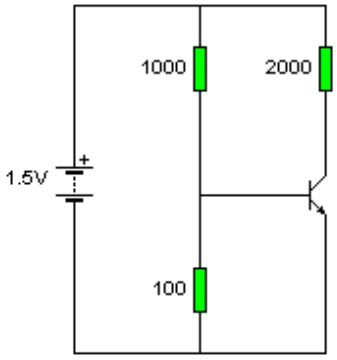
Departamento de Tecnoloxía

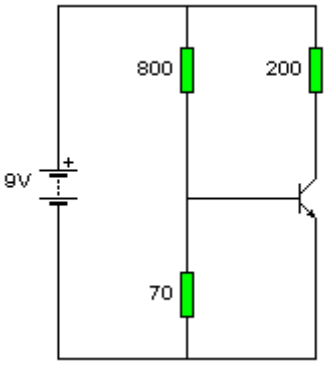
Curso 2010-11

Transistores

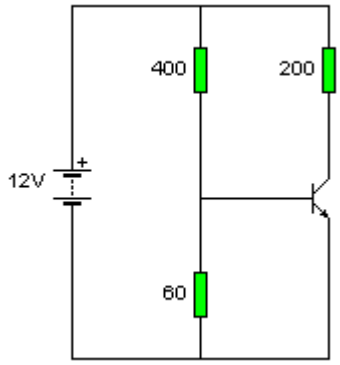
1. Resolve o seguinte circuíto (β = 100)



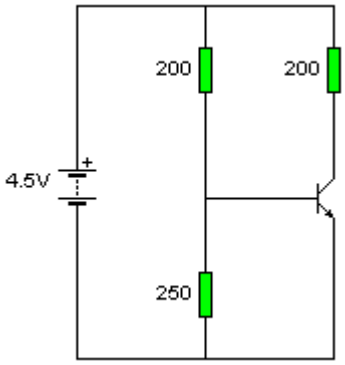
2. Resolve o seguinte circuíto (β = 30)



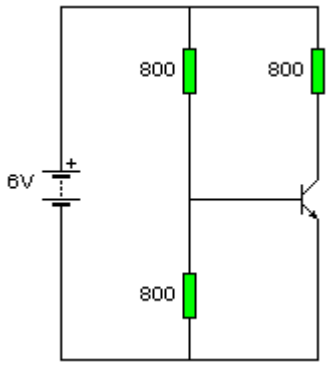
3. Resolve o seguinte circuíto (β = 30)



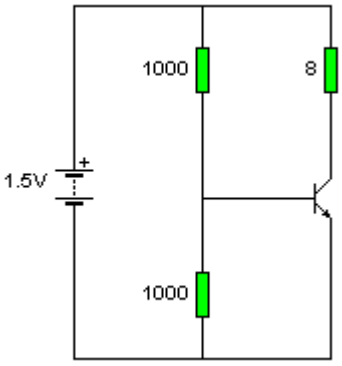
4. Resolve o seguinte circuíto (β = 300)



5. Resolve o seguinte circuíto (β = 100)



6. Resolve o seguinte circuíto (β = 60)



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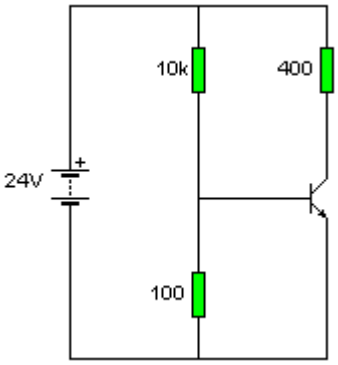
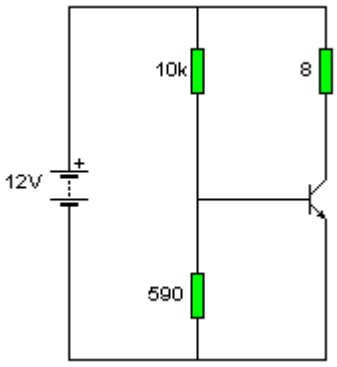
Curso 2010-11

Transistores

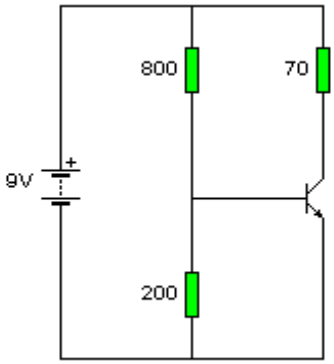
7. Resolve o seguinte circuíto (β = 100)



8. Resolve o seguinte circuíto (β = 50)



9. Resolve o seguinte circuíto (β = 30)



Pasos para a resolución:

1. Supoñemos zona activa: V_{BE} = 0,7 V
2. Calculamos I_1 e I_2:

$$I_1 = \frac{V_a - 0{,}7}{R_1}$$

$$I_2 = \frac{0{,}7}{R_2}$$

3. Comparamos I_1 e I_2:
   - Se $I_1 < I_2$ en zona de corte
   - Se $I_1 > I_2$ en zona activa
4. Calculamos I_B:

$$I_B = I_1 - I_2$$

5. Calculamos I_C:

$$I_C = \beta I_B$$

6. Calculamos a tensión que cae en R_C:

$$V_{R_C} = I_C R_C$$

   - Se $V_{RC} < V_a$ en zona activa
   - Se $V_{RC} > V_a$ en zona de saturación
7. Damos os valores das magnitudes:
   - I_B, I_C, I_E
   - V_{BE}, V_{CE}