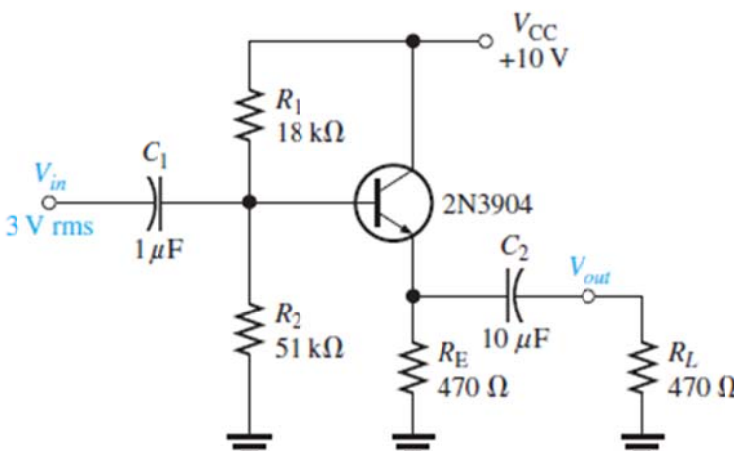
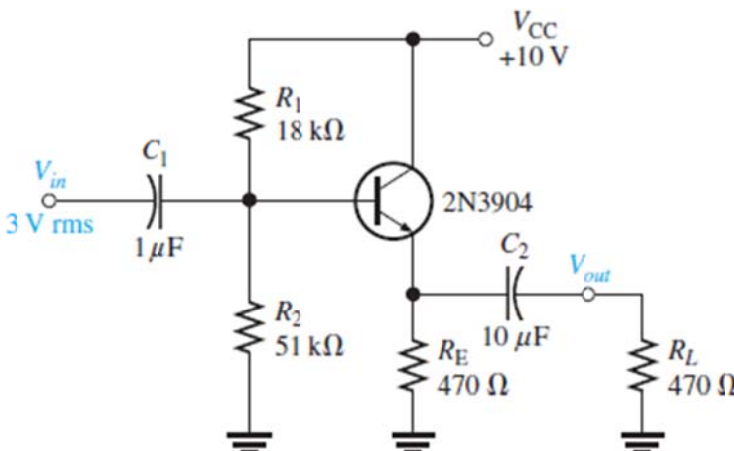


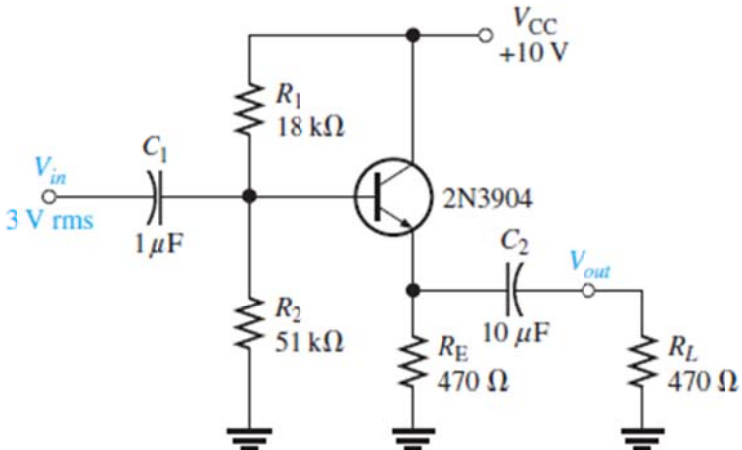
Electronic Circuits II - Tutorial 06

BJT Amplifiers 2

#		
1	An emitter-follower is a CC amplifier.	T
2	A CC amplifier has high voltage gain.	F
3	A Darlington pair consists essentially of two CC amplifiers.	T

MCQ

#	Question	Answer
1	 <p>If C2 in Figure is shorted, the average value of the output voltage will (a) increase (b) decrease (c) not change</p>	a
2	 <p>If the value of RE in Figure is increased, the voltage gain will (a) increase (b) decrease (c) not change</p>	c

3	 <p>If the value of C_1 in Figure is increased, V_{out} will (a) increase (b) decrease (c) not change</p>	c
4	<p>A small-signal amplifier (a) uses only a small portion of its load line (b) always has an output signal in the mV range (c) goes into saturation once on each input cycle (d) is always a common-emitter amplifier</p>	a
5	<p>The parameter h_{fe} corresponds to (a) β_{DC} (b) β_{ac} (c) r'_e (d) r'_c</p>	b
6	<p>If the dc emitter current in a certain transistor amplifier is 3 mA, the approximate value of r'_e is (a) 3 kΩ (b) 3 Ω (c) 8.33 Ω (d) 0.33 kΩ</p>	c
7	<p>A certain common-emitter amplifier has a voltage gain of 100. If the emitter bypass capacitor is removed, (a) the circuit will become unstable (b) the voltage gain will decrease (c) the voltage gain will increase (d) the Q-point will shift</p>	b
8	<p>For a common-emitter amplifier, $R_C = 1.0 \text{ k}\Omega$, $R_E = 390 \Omega$, $r'_e = 15 \Omega$, and $\beta_{ac} = 75$. Assuming that R_E is completely bypassed at the operating frequency, the voltage gain is (a) 66.7 (b) 2.56 (c) 2.47 (d) 75</p>	a
9	<p>For a common-emitter amplifier, $R_C = 1.0 \text{ k}\Omega$, $R_E = 390 \Omega$, $r'_e = 15 \Omega$, and $\beta_{ac} = 75$. if the frequency is reduced to the point where $X_{C(bypass)} = R_E$, the voltage gain - - (a) remains the same (b) is less (c) is greater</p>	b
10	<p>In a common-emitter amplifier with voltage-divider bias, $R_{in(base)} = 68 \text{ k}\Omega$, $R_1 = 33 \text{ k}\Omega$, and $R_2 = 15 \text{ k}\Omega$. The total ac input resistance is (a) 68 kΩ (b) 8.95 kΩ (c) 22.2 kΩ (d) 12.3 kΩ</p>	b
11	<p>A CE amplifier is driving a 10 kΩ load. If $R_C = 2.2 \text{ k}\Omega$ and $r'_e = 10 \Omega$, the voltage gain is approximately (a) 220 (b) 1000 (c) 10 (d) 180</p>	d

12	For a common-collector amplifier, $R_E = 100 \Omega$, $r'_e = 10 \Omega$, and $\beta_{ac} = 150$. The ac input resistance at the base is (a) 1500Ω (b) $15 \text{ k}\Omega$ (c) 110Ω (d) $16.5 \text{ k}\Omega$	d
13	For a common-collector amplifier, $R_E = 100 \Omega$, $r'_e = 10 \Omega$, and $\beta_{ac} = 150$. If a 10 mV signal is applied to the base of the emitter-follower circuit, the output signal is approximately (a) 100 mV (b) 150 mV (c) 1.5 V (d) 10 mV	d
14	In a certain emitter-follower circuit, the current gain is 50. The power gain is approximately (a) $50A_v$ (b) 50 (c) 1 (d) answers (a) and (b)	d
15	In a Darlington pair configuration, each transistor has an ac beta of 125. If R_E is 560Ω , the input resistance is (a) 560Ω (b) $70 \text{ k}\Omega$ (c) $8.75 \text{ M}\Omega$ (d) $140 \text{ k}\Omega$	c



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