44

淡江大學 102 學年度日間部轉學生招生考試試題

系別：電機工程學系三年級　　科目：電　子　學

考試日期：7 月 24 日(星期三) 第 1 節　　本試題共　5　大題，　2　頁

1. As depicted in Fig. 1, (a) Compute the Rin, Rout and voltage gain of Common-Emitter for $V_A=\infty$. (b) Compute the Rin and Rout of Common-Emitter for $V_A\neq\infty$. (20%)

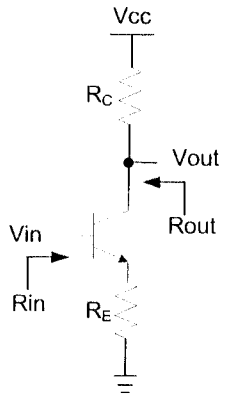


Fig.1

2. As depicted in Fig. 2, (a) Compute the Rin, Rout and voltage gain of Common-Base for $V_A=\infty$. (b) Compute the Rin and Rout of Common-Base for $V_A\neq\infty$. (20%)

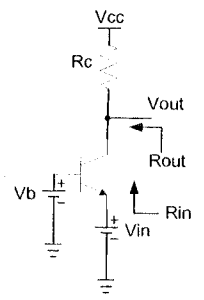


Fig. 2

3. If the collector and base of a bipolar transistor are tied together, a two-terminal device results. Determine the small-signal impedance of the devices shown in Fig. 3. Assume $V_A=\infty$. (20%)

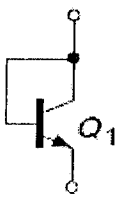


Fig.3

4. As shown in Fig. 4, (a) Compute the Rin, Rout and voltage gain of Common-Emitter by using small signal model under $V_A=\infty$. (b) Compute the Rin, Rout and voltage gain of Common-Emitter by using small signal model under $V_A<\infty$. (20%)

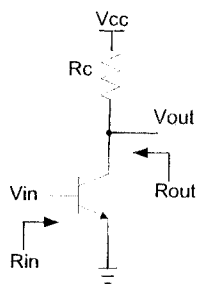


Fig.4

本試題雙面印刷

背面尚有試題

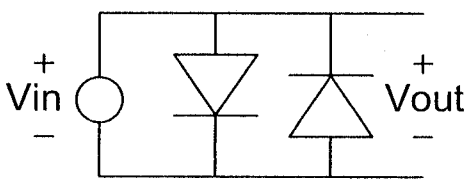
44-2

淡江大學 102 學年度日間部轉學生招生考試試題

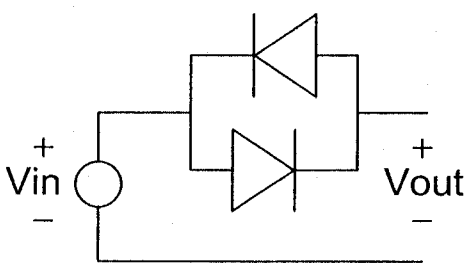
系別：電機工程學系三年級　　科目：電　子　學

考試日期：7 月 24 日(星期三) 第 1 節　　本試題共　5　大題，　2　頁

5. Plot the output/input characteristics of the circuits depicted in Fig. 5 (a)and (b). Assume V_{D_on} = 0.8V. (20%)



(a)



(b)