

Prob B.I.1. $V_{GG} = 2.366 \text{ V}$, $I_{D1} = 343 \mu\text{A}$.

1. $I_{D1} = 5.6 \mu\text{A}$, $V_{DS1} = 4.944 \text{ V}$
2. $I_{D1} = 375.6 \mu\text{A}$, $V_{DS1} = 1.244 \text{ V}$
3. $I_{D1} = 445.7 \mu\text{A}$, $V_{DS1} = 0.534 \text{ V}$

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Prob B.I.2. $V_{GG} = 1.842 \text{ V}$, $I_{D1} = -274 \mu\text{A}$.

1. $I_{D1} = -360.5 \mu\text{A}$, $V_{DS1} = -1.395 \text{ V}$
2. $I_{D1} = -137.6 \mu\text{A}$, $V_{DS1} = -3.624 \text{ V}$
3. $I_{D1} = -0.54 \mu\text{A}$, $V_{DS1} = -4.994 \text{ V}$

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Prob B.I.3.

- A) $V_{GS1} = 2.21 \text{ V}$, $I_{D1} = 279 \mu\text{A}$.
- B) $V_{GS1} = -2.884 \text{ V}$, $I_{D1} = -211.6 \mu\text{A}$.

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Prob B.I.4.

- A) $g_m = 340 \mu\text{A/V}$, $r_o = 1.24 \text{ M}\Omega$
- B) $g_m = 120.7 \mu\text{A/V}$, $r_o = 2.2 \text{ M}\Omega$
- C) $g_m = 248.4 \mu\text{A/V}$, $g_{mb} = 41.87 \mu\text{A/V}$, $r_o = 2.32 \text{ M}\Omega$
- D) $g_m = 79.7 \mu\text{A/V}$, $g_{mb} = 15.7 \mu\text{A/V}$, $r_o = 5 \text{ M}\Omega$

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Prob B.I.5.

- A) $C_{gs} = 46.2 \text{ fF}$, $C_{gd} = 1.92 \text{ fF}$, $C_{gb} = 0.4 \text{ fF}$, $C_{db} = 10 \text{ fF}$, $C_{sb} = 20 \text{ fF}$
- B) $C_{gs} = 37.35 \text{ fF}$, $C_{gd} = 1.92 \text{ fF}$, $C_{gb} = 0.32 \text{ fF}$, $C_{db} = 9.156 \text{ fF}$, $C_{sb} = 14.187 \text{ fF}$