

Answers to EEE210 Midterm (repeat) AY2016-2017

1.

$$V_o = \begin{cases} (6V_i + 12)/11 & \text{if } V_i > -2 \text{ V} \\ (3V_i + 6)/4 & \text{if } V_i < -2 \text{ V} \end{cases}$$

2. $t_p = (2.2 \text{ ms}) \ln\left(\frac{3}{0.91}\right) = 2.62443 \text{ ms}.$

3. $v_o(t) = \frac{-g_m(R_3 \parallel R_4)}{1 + g_m R_2} v_i(t)$

4.

$$I_D = 9.654 \text{ mA}$$

$$V_{GS} = 2.359 \text{ V}$$

$$V_{DS} = 1.877 \text{ V}$$

5. $V_{i2} = 0.2576351 \text{ V}.$