

Corrigé Travaux
 Dirigés Série N°3
 (JFET)

Exercice 1:

$$V_{en} = V_{gs} + I_d R_s$$

$$V_{sor} = I_d R_s$$

$$A_V = \frac{V_{SOR}}{V_{en}} = \frac{g_m V_{gs} R_s}{V_{gs} + g_m V_{gs} R_s} = \frac{g_m R_s}{1 + g_m R_s}$$

Avec : $R_s = R_s // R_{charge}$

AN : $A_V = 0.545$

$$R_{en} = R_G // R_{EN(grille)} = R_G // \left(\frac{V_{GS}}{I_{GSS}} \right)$$

AN : $R_{EN(grille)} = 0.3(10^{12})$

$$R_{en} \cong 10M$$

Exercice 2:

$$V_{en} = V_{gs} + I_d R_s$$

$$V_{sor} = I_d R_s$$

$$A_V = \frac{V_{SOR}}{V_{en}} = \frac{g_m V_{gs} R_s}{V_{gs} + g_m V_{gs} R_s} = \frac{g_m R_s}{1 + g_m R_s}$$

Avec : $R_s = R_s // R_{charge}$

AN : $A_V = 0.927$

$$R_{en} = R_G // R_{EN(grille)} = R_G // \left(\frac{V_{GS}}{I_{GSS}} \right)$$

AN : $R_{EN(grille)} = 1000M$

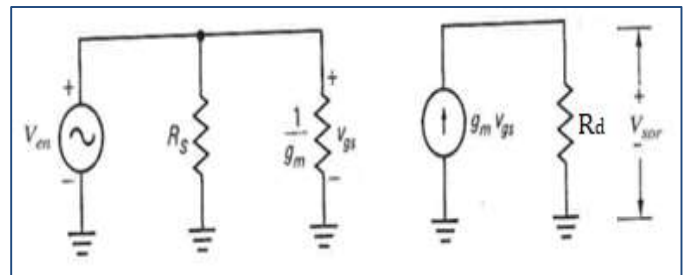
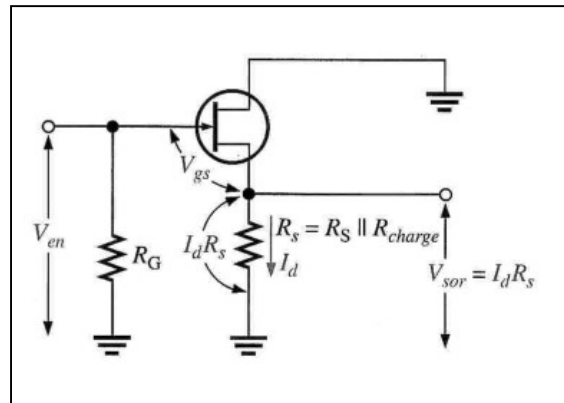
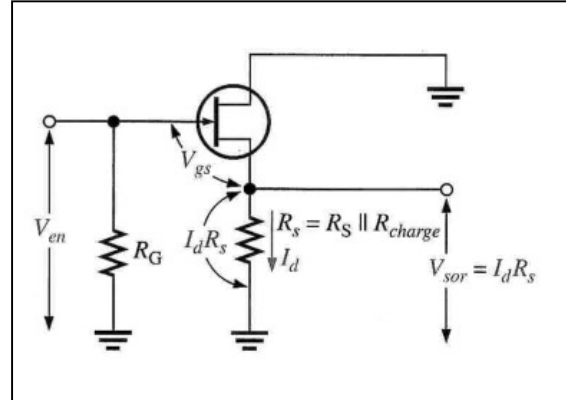
$$R_{en} \cong 4.7M$$

Exercice 3:

$$V_{en} = V_{gs}$$

$$V_{sor} = I_d R_d$$

$$A_V = \frac{V_{sor}}{V_{en}} = \frac{V_d}{V_{gs}} = \frac{g_m V_{gs} R_d}{V_{gs}} = g_m R_d$$



$$\text{Avec : } R_d = R_D // R_{char}$$

$$\text{AN : } A_v = 3.18$$

$$R_{en} = R_S // R_{EN(source)}$$

$$R_{EN(source)} = \frac{V_{en}}{I_{en}} = \frac{V_{gs}}{g_m V_{gs}} = \frac{1}{g_m}$$

$$\text{AN : } R_{EN(source)} \cong 285$$

$$R_{en} \cong 252.87$$