Tutorial #07

Junction Field Effect Transistors.

Q1. The device parameters of n-channel JFETs are :

$I_{DSS} = 10\,mA$; $V_{Pinch\text{-}OFF} = 4.0\,V$

Calculate the drain current I_D for $V_{GS} = 0\,V$; $-1.0\,V$ and $-4.0\,V$

Q2 A JFET produces gate current of 2nA when gate is reverse biased with 8V. Determine the resistance between gate and source.

Q3. A JFET is self biased with $V_{DD} = 20\,V$ and $I_{DSS} = 12\,mA$. The value of drain- and gate-resistance is $2k\Omega$ and $1M\Omega$ respectively. Determine the value of source-resistance for which the operating point lies at the middle of the load-line.

Q4. Determine the operating point corresponding to the voltage-divider biased circuit shown below :