

EE2301 Class Assessment 10

1. In a MOSFET, it is understood that currents flow between:

Gate and Source	All 3 terminals
Gate and Drain	Drain and Source

2. In an E-type n-channel MOSFET, the substrate/body is an n-type semiconductor.

True	False
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3. In an E-type MOSFET, the channel appears between:

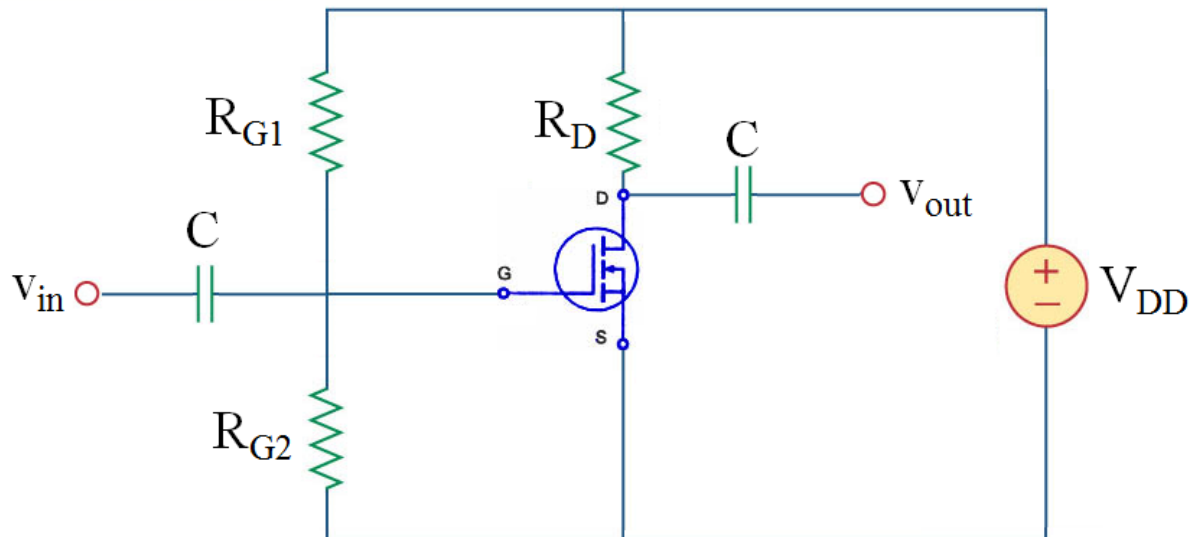
Gate and Source	Drain and Source	Gate and Drain
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4. In an E-type MOSFET (where the body is connected to the source), which of the following determines whether the device is switched on or off?

No answer text provided.	Drain-Source voltage
Gate-Drain voltage	Gate-Source voltage

5. In an E-type MOSFET, with respect to controlling the drain current, V_{GS} controls the **Conductance of the channel** while V_{DS} controls the **Voltage drop along the length of the channel**

Choices: "Voltage drop along the length of the channel", "Conductance of the channel", "Channel length"



6. With reference to the circuit in Fig 1, the function of the capacitors is to:

Block DC current from the input and output

Stabilize the input and output

Decrease the gain due to the filtering effect

Increase the gain due to the filtering effect

7. Given that $V_{DD} = 12V$, $R_D = 1k\Omega$, $R_{G2} = 100k\Omega$, $R_{G1} = 300k\Omega$, Drain-source current = $4mA$, V_{GS} is 3 in V, V_{DS} is 8 in V.

8. Find the input resistance of the amplifier in $k\Omega$. Ans: 75

9. Find the small signal gain of the amplifier given that for the MOSFET: $g_m = 20$ mS and $r_o = 4 k\Omega$. Ans: -16

10. To realize a linear amplifier, which bias condition is required for the E-type NMOS (where V_T is the threshold voltage)?

$V_{GS} > V_T$ and $V_{DS} > (V_{GS} - V_T)$

$V_{GS} > V_T$ and $V_{DS} < V_T$

$V_{GS} > V_T$ and $V_{DS} > V_T$

$V_{GS} > V_T$ and $V_{DS} < (V_{GS} - V_T)$