PhysicsByAaryan

CSIR NET . GATE . JEST . BARC - Physics

FET - CSIR NET Physics PYQs

Electronics . All PYQs (2015-2025) with answer key

4 questions . Answer key included

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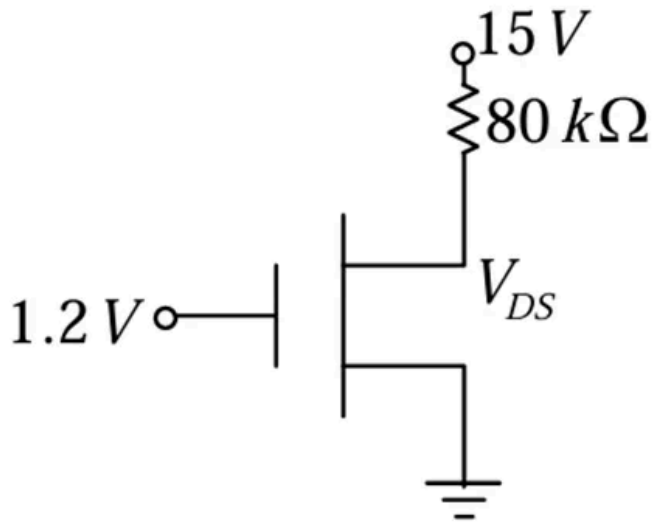
Q1. [Dec 2015] . 5.0 marks

Electronics > FET

CSIR NET	2015 Dec	5 M

Consider an n - MOSFET with the following parameters: current drive strength $K = 60\mu A/V^2$, breakdown voltage $BV_{DS} = 10$ V, ratio of effective gate width to the channel length $\frac{W}{L} = 5$ and threshold voltage $V_{\text{th}} = 0.5$ V. In the circuit given below, this n-MOSFET is operating in the



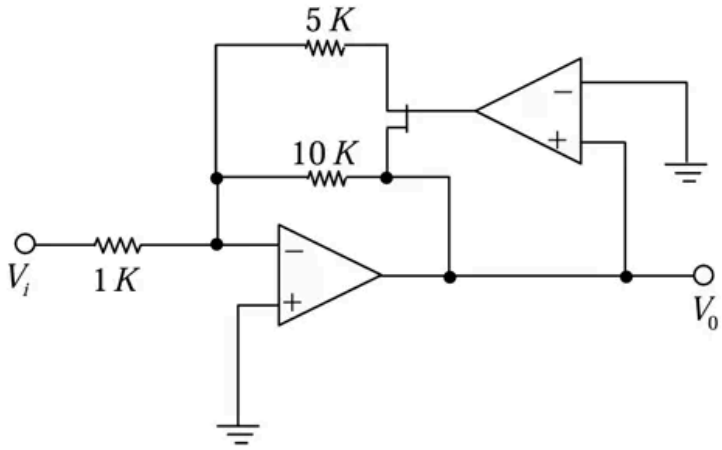
1. ohmic region
2. cut-off region
3. saturation region
4. breakdown

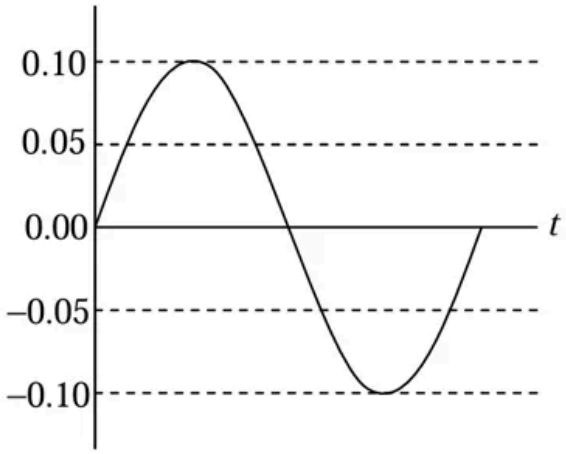
Q2. [June 2015] . 5.0 marks

Electronics > FET

CSIR NET	2015 June	5 M

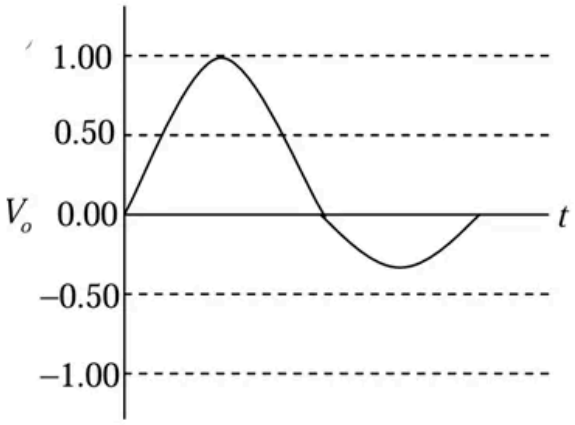
For the circuit and the input sinusoidal waveform shown in the figures below, which is the correct waveform at the output?



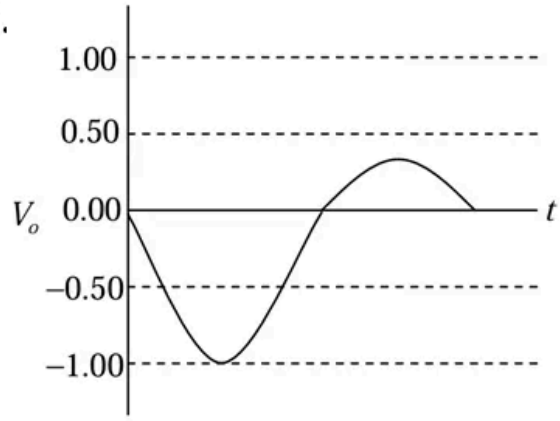


(The time scales in all plots are the same.)

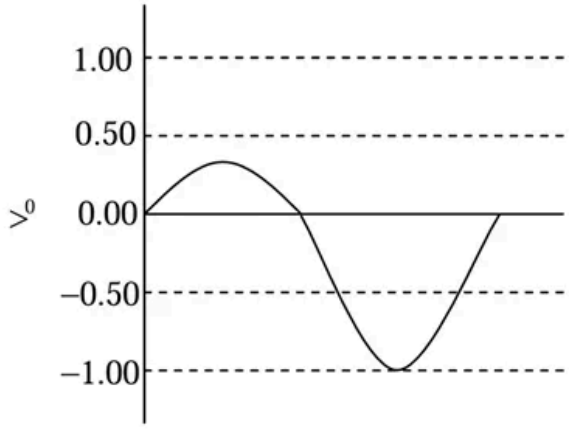
1



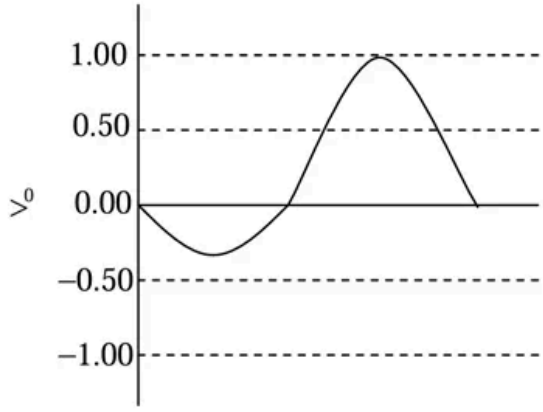
2.



3



4.



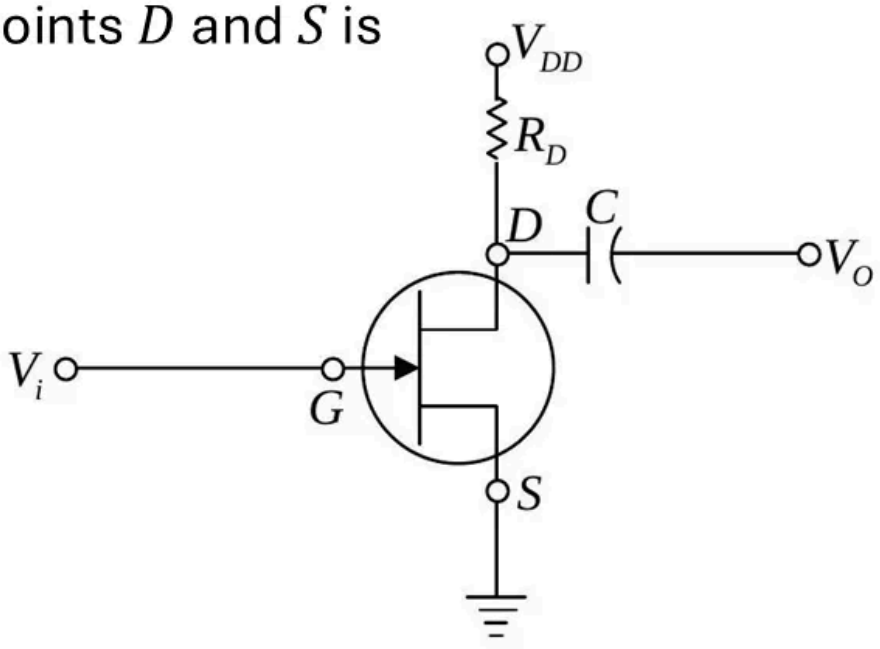
Q3. [June 2017] . 3.5 marks

Electronics > FET

CSIR NET	2017 June	3.5M

In the n-channel JFET shown in figure below, $V_i = -2V, C = 10pF, V_{DD} = +16V$ and $R_D = 2k\Omega$. If the drain D - source S saturation current I_{DSS} is $10mA$ and the pinch-off voltage V_P is $-8V$, then the voltage across points D and S is

1. 11.125 V
2. 10.375 V
3. 5.75 V
4. 4.75 V



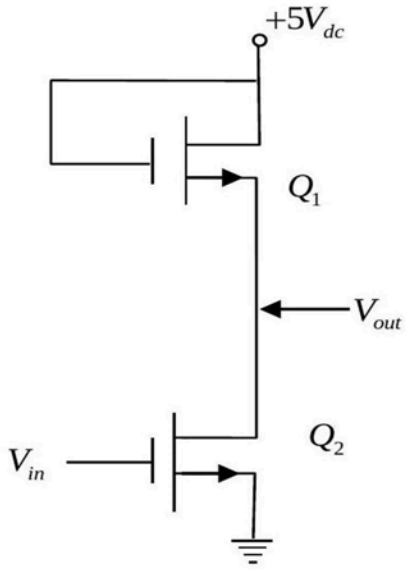
Q4. [June 2022] . 3.5 marks

Electronics > FET

CSIR NET	2022 June	3.5M

The circuit containing two n-channel MOSFETs shown below, works as

1. a buffer
2. a non-inverting amplifier
3. an inverter
4. a rectifier



Answer Key

4 questions . Subject and topic for quick revision

Q. No	Subject	Topic	Answer
Q1	Electronics	FET	**3**
Q2	Electronics	FET	**2**
Q3	Electronics	FET	**4**
Q4	Electronics	FET	**3**

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