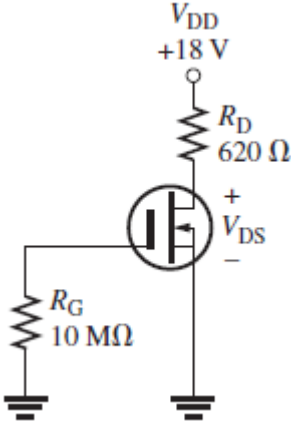
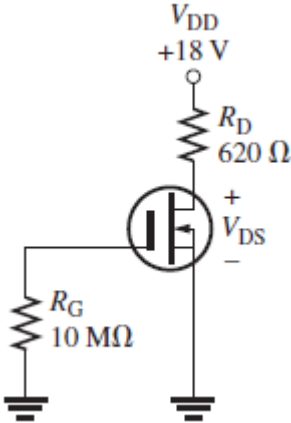


# Electronic Circuits II - Tutorial 05

1	A D-MOSFET has a physical channel and an E-MOSFET has an induced channel.	T
2	ESD means <i>electronic semiconductor device</i> .	F
3	MOSFETs must be handled with care.	T

MCQ

#	Question	Answer
1	<p>If the value of <math>R_G</math> in Figure is increased, <math>V_G</math> will</p>  <p>(a) increase (b) decrease (c) not change</p>	c
2	<p>If the value of <math>\mu_{DSS}</math> in Figure is increased, <math>V_{DS}</math> will</p>  <p>(a) increase (b) decrease (c) not change</p>	b
3	<p>A certain <math>p</math>-channel E-MOSFET has a <math>I_D</math> if <math>V_{GS} = 0</math> V, the drain current is</p> <p>(a) 0 A (b) <math>I_{D(on)}</math> (c) maximum (d) <math>\mu_{DSS}</math></p>	a
4	<p>A certain <math>p</math>-channel E-MOSFET has a <math>I_D</math> if <math>V_{GS} = 0</math> V, the drain current is</p> <p>(a) 0 A (b) <math>I_{D(on)}</math> (c) maximum (d) <math>\mu_{DSS}</math></p>	a





<p>Q2</p>	<p>Determine in which mode (depletion, enhancement or neither) each D-MOSFET in Figure is biased.</p> <p>(a)                      (b)                      (c)                      (d)</p>
<p>Sol 2</p>	<p>.....</p> <p>... (a) Depletion      (b) Enhancement .....</p> <p>... (c) Zero bias      (d) Depletion .....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>



كلية الهندسة

Faculty of Engineering

FACULTY OF ENGINEERING  
AHRAM CANADIAN UNIVERSITY



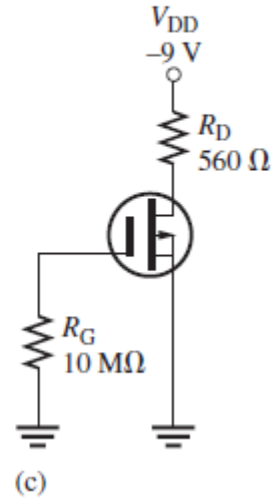
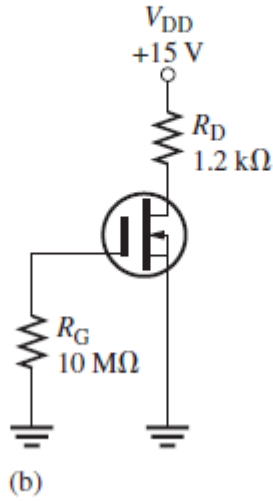
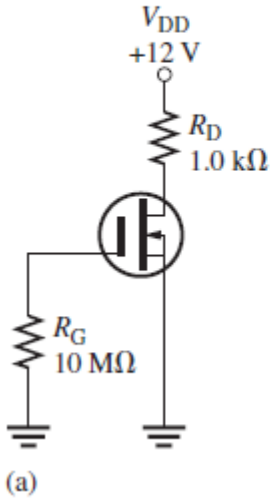
جامعة الأهرام الكندية  
AHRAM CANADIAN UNIVERSITY

A large rectangular area with a dotted grid pattern, intended for writing or drawing.



Q3

Determine  $V_{DS}$  for each circuit in Figure 1.  $I_{DSS} = 8 \text{ mA}$ .



Sol  
3

.....  
... (a) 4 V    (b) 5.4 V    (c) -4.52 V    .....

.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....



كلية الهندسة

Faculty of Engineering

FACULTY OF ENGINEERING  
AHRAM CANADIAN UNIVERSITY



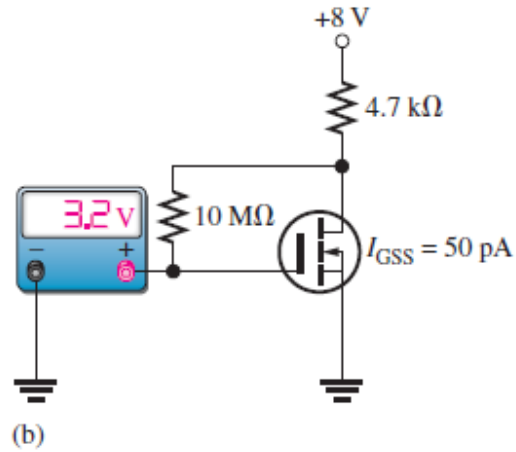
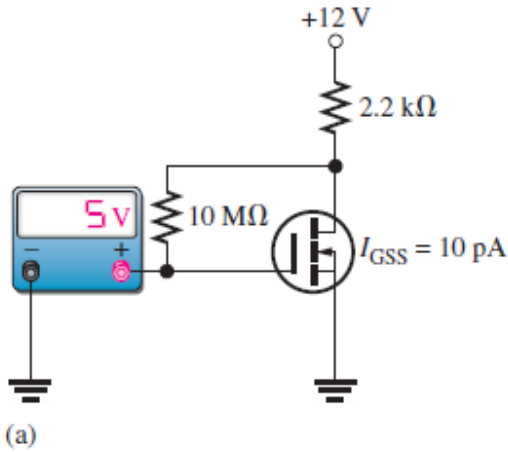
جامعة الأهرام الكندية  
AHRAM CANADIAN UNIVERSITY

A large rectangular area with a vertical margin on the left and horizontal dotted lines for writing.



Q  
4

Based on the  $V_{GS}$  measurements, determine the drain current and drain-to-source voltage for each circuit in Figure



So  
14

... (a) 5 V, 3.18 mA      (b) 3.2 V, 1.02 mA





كلية الهندسة

Faculty of Engineering

FACULTY OF ENGINEERING  
AHRAM CANADIAN UNIVERSITY



جامعة الأهرام الكندية  
AHRAM CANADIAN UNIVERSITY

A large rectangular area with horizontal dotted lines, intended for writing or drawing.