



Question One: (6 Marks)

A) Choose the correct answer:

- The most commonly used semiconductor element is
a) Silicon b) Germanium c) Gallium d) Carbon
- If the Zener Diode is connected in wrong polarity, the voltage across the load is
a) 0.7 V b) 10 V c) 14 V a) 18 V
- The reverse current in a diode is usually
a) Very small b) Very large c) Zero d) In breakdown region
- How much is the base-to-emitter voltage (V_{BE}) of a transistor in the "on" state?
a) 0 V b) 0.7 V c) 0.7 mV d) Undefined
- How many layers of material does a transistor have?
a) One b) Two c) Three d) Four
- For normal operation of a PNP BJT, the base must be _____ with respect to the emitter
a) negative b) zero c) positive d) none of all
- The relation between Base Current I_B , Emitter Current I_E and Collector Current I_C is
a) $I_E = I_B + I_C$ b) $I_C = I_B + I_E$ c) $I_E = I_B - I_C$ d) $I_B = I_C + I_E$
- Relation between α and β is
a) $\alpha = \beta / (\beta + 1)$ b) $\beta = \alpha / (1 - \alpha)$ c) $\alpha = \beta * (\beta + 1)$ d) $\alpha = \beta / (\beta - 1)$

b) What is the definition of:

1. Transistor:

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2. Full-Wave Rectification:

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3. Zener Diode:

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4. Ideal current source:

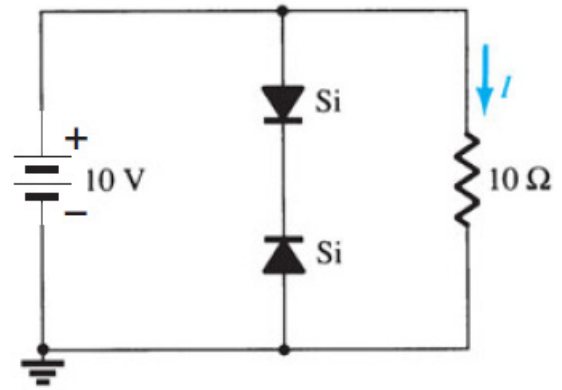
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Question Two:

(10 Marks)

1. Determine V_R in the circuit as show in Figure.
2. Find the I_R ?

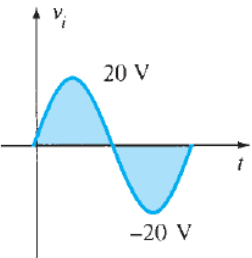
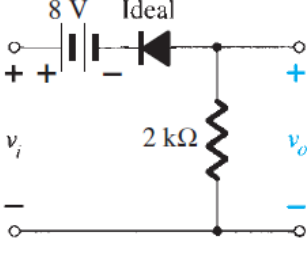
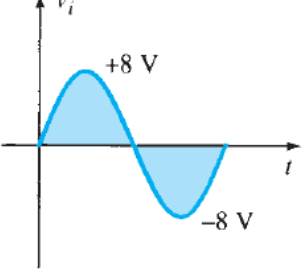
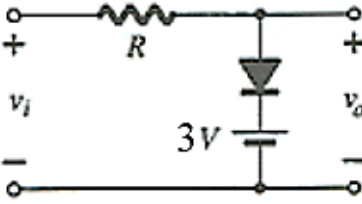
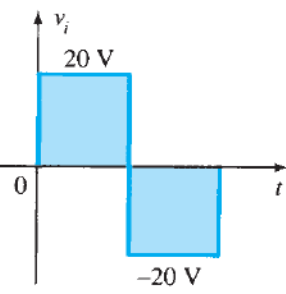
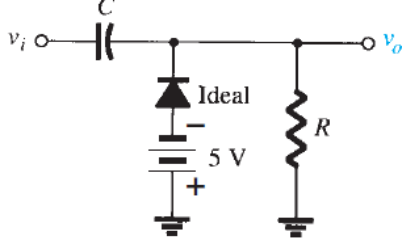


3. What are the differences between the **PNP transistor** and **NPN transistor**?

PNP transistor	NPN transistor



4. Sketch the V_o for each network in the table? The diode is ideal diode?

Input signal	Circuit	Output signal
		
		
		

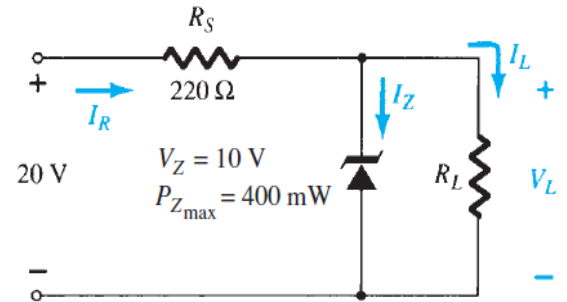
5. List two of the transistor applications in your daily life?



Question Three:

(10 Marks)

1. The Zener diode network in the Figure
 - a) Determine V_L , I_L , I_Z , and I_R if $R_L = 470\Omega$.
 - b) Determine the minimum value of R_L to ensure that the Zener diode is in the “on” state.
 - c) Determine the value of R_L that will establish maximum power conditions for the Zener diode.



Course No: SWEN2301
Course Title: Electronics Principles
Date: 12/1/2019
No. of Questions: (5)
Time: 2 hours
Using Calculator (Yes)

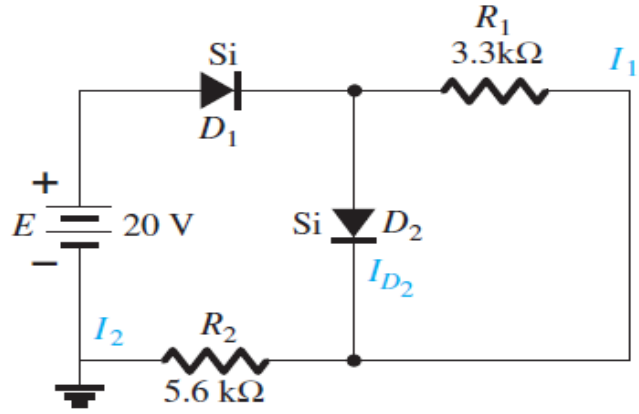
University of Palestine



Final Exam
2018-2019
Total Grade:30

Instructor Name: Dr. Alaa AbuZaiter
Student No.: _____
Student Name: _____
College Name: Engineering
Dep. / Specialist: Software Eng.
Using Dictionary (No)

- Determine the current I_1 , I_2 and I_{D2} for the networks of Figure.
- Find the V_{R1} and V_{R2} ?





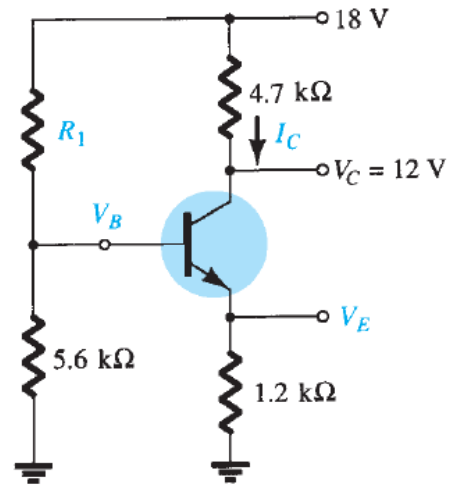
Answer one of these two questions (4 & 5)

Question Four:

(7 Marks)

1. Given the information provided in Figure, determine:

- a) I_C
- b) V_E
- c) V_B
- d) R_1



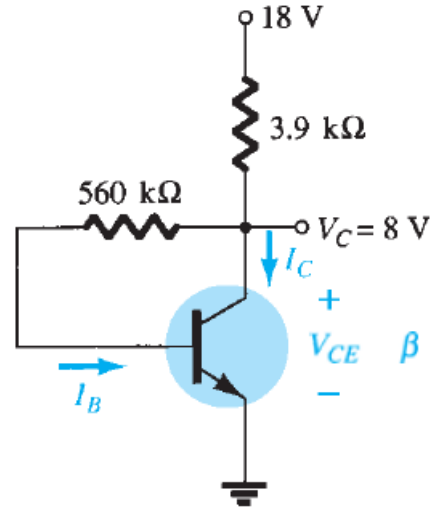


Question Five:

(7Marks)

1) Given $V_C = 8\text{ V}$ for the network of Figure, determine:

- a) I_B
- b) I_C
- c) β
- d) V_{CE}



End of Questions
Good Luck