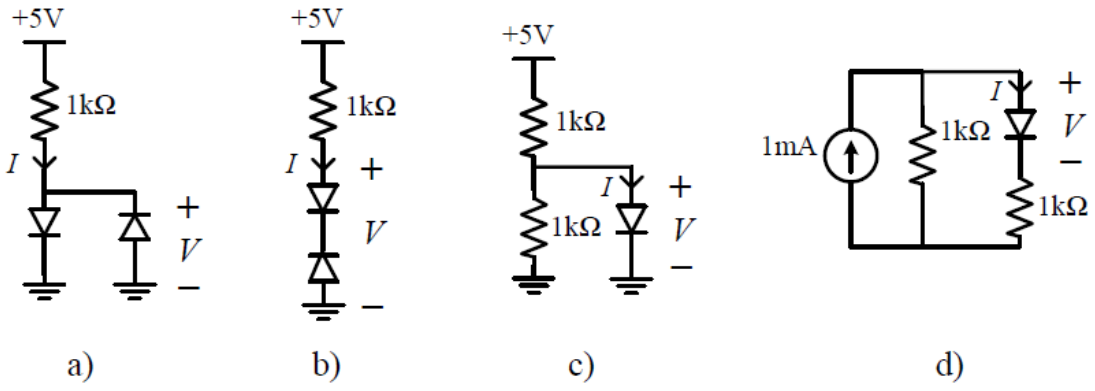
YILDIZ TECHNICAL UNIVERSITY
FACULTY OF ELECTRICAL AND ELECTRONICS ENGINEERING / DEPARTMENT OF BIOMEDICAL ENGINEERING

Name and surname:	**Student number:**			**Signature:**	
Course: BME2312 Analog Electronics	**Date / Time:** 02 May 2021 10:00			**Time:** 90 minutes	
Exam Type:	**Midterm1** x	**Midterm2**	**Make-up** for Midterms	**Final**	**Make-up**
Title Name-Surname: Assist. Prof. Dr. İsmail CANTÜRK **(Instructor)**					

1. Assume $0.7V$ constant voltage drop model and determine the values of I and V for below diode circuits. Show your solution steps clearly and explain them. The answers without solution steps will not be graded. Also, state your results in the sections below the circuits.



a) b) c) d)

$I =$ $I =$ $I =$ $I =$

$V =$ $V =$ $V =$ $V =$

2. Consider the below zener diode circuit and find the values of $I_{D1}, V_{D1}, I_{D2}, and\ V_{D2}$. Use the constant voltage drop model which is shown is Figure 2. Show your solution steps clearly and explain them. The answers without solution steps will not be graded. Also, state your results in the sections below the circuits. ($I_{Zmin} = 0.1mA$)

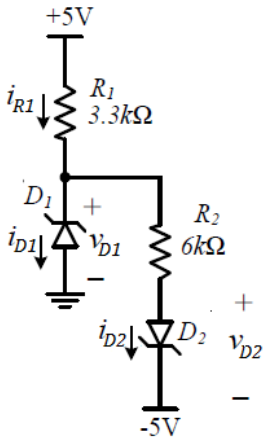


Figure 1

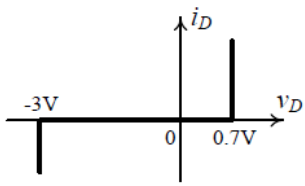
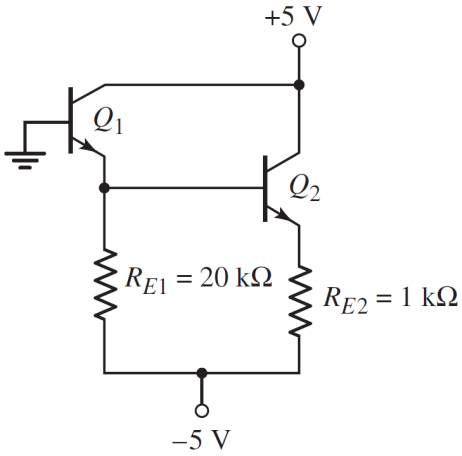


Figure 2

$I_{D1} =$ $I_{D2} =$

$V_{D1} =$ $V_{D2} =$

3. Consider below BJT circuit and determine base, collector, and emitter currents in $Q1$ and $Q2$. Verify your operation mode assumption. Show your solution steps clearly and explain them. The answers without solution steps will not be graded. Also, state your results in the sections below the circuits. $(\beta = 80, V_{BE}(on) = 0.7V)$



$I_{B1} =$ $I_{B2} =$

$I_{C1} =$ $I_{C2} =$

$I_{E1} =$ $I_{E2} =$