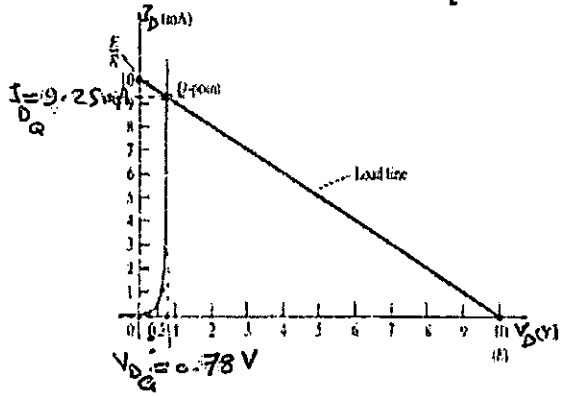
E`lectronics 1
Course Code: ECE 261
Fall Semester Exam.

BME Program - Level 200
Exam Date: 11-11- 2019
Allowed Time: 1 Hour

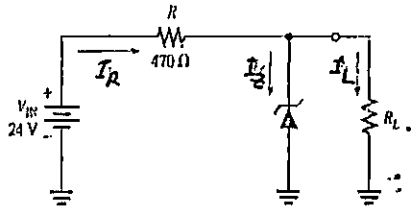
Attempt five questions only. Assume any missed data. Full mark is 20.

Q.1) Design a diode circuit that satisfies the characteristics shown. **[4 Marks]**

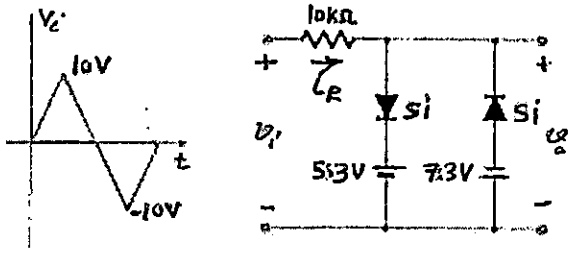


Q.2) Determine the minimum and the maximum load currents and the minimum value of R_L for which the zener maintains voltage regulation. **[4 Marks]**

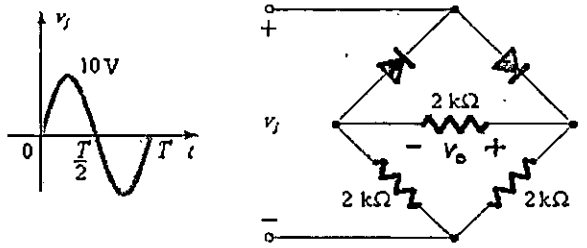
$V_z = 12V \quad I_{z_{min}} = 1mA \quad P_{z\,max} = 600mW$



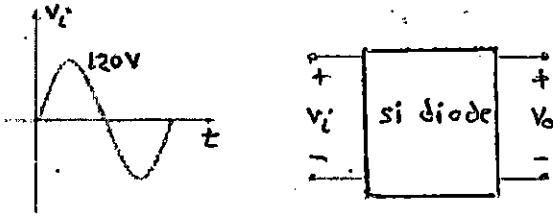
Q.3) Sketch V_o and i_R for the configuration shown below. **[4 Marks]**

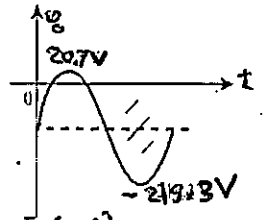


Q.4) Find and sketch V_o. Determine the DC value. Find the PIV. **[4 Marks]**



Q5) Design a clamper to perform the function indicated in the figure. **[4 Marks]**



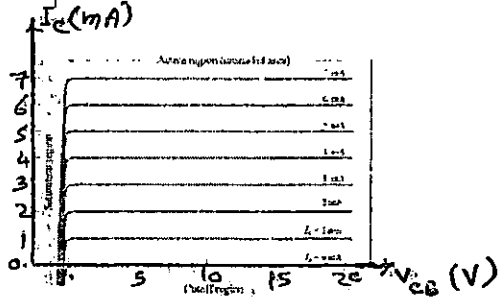


Q.6) Using the characteristics shown:

a) Determine the type of configuration. Define α

b) Determine the resulting collector current if $I_E = 3mA$ and $V_{CB} = 10V$

c) Determine V_{BE} if $I_C = 4mA$ and $V_{CB} = 20V$



☺My best wishes to all of you☺ *Assoc. Prof. Hossam El-Din Moustafa*