Kaferelsheikh University
Faculty of Engineering
Department of electrical Engineering
Year: First Subject: Electronic cir
Name:

ECE1001

Date: 29/12/2019
Time allowed: 1.5 h
Full Mark: 45 degree
Final Exam: 2page
Academic Number:

This exam measures ILOs no: a3, a4, a5,a8 ,a14, b6,c7

[1] Question One: (24 Mark)

A) Derive an expression for AC- Resistance. (4 marks).

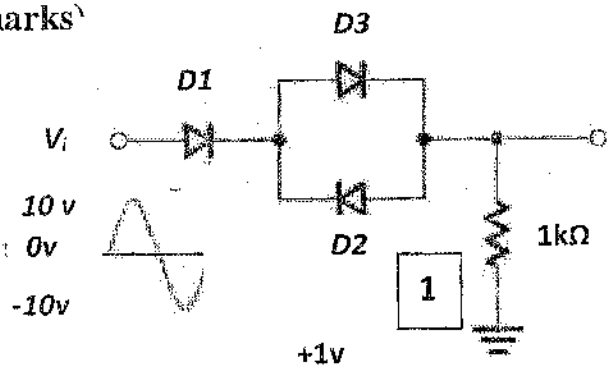
B) sketch diagram of dc power supply, then answer the following questions: (8 marks).

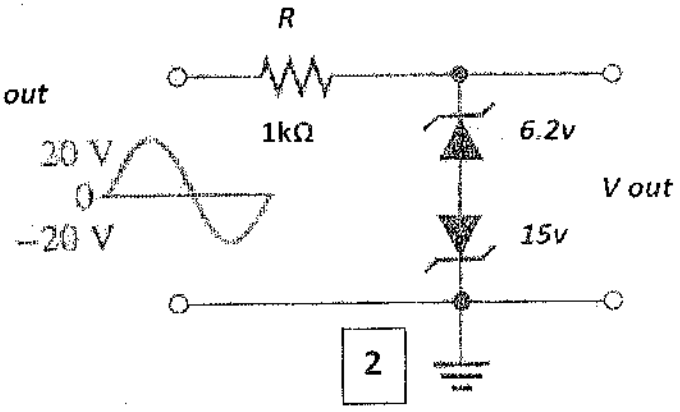
- Defines the function of each component within the diagram.

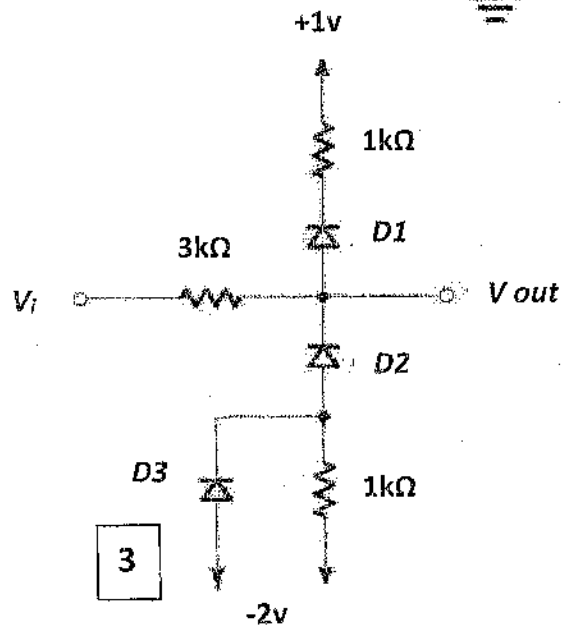
- Sketch the input and output of each component.

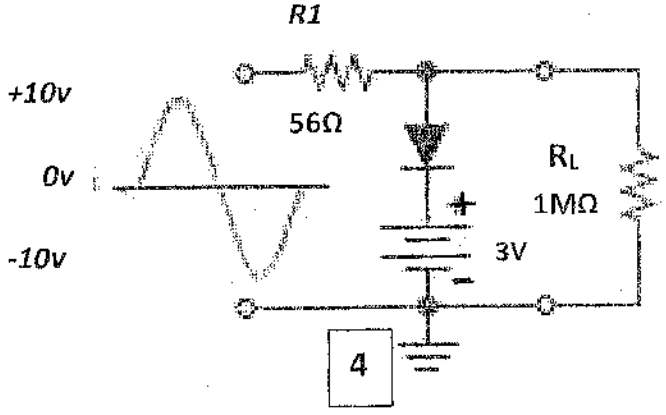
- Explain the full wave rectification by using high PIV diodes, what PIV rating is required for the diodes and the ripple factor for the filtered output.

C) Determine v_o/ (RL voltage) for each network of shown below for the same input shown. (12 marks)









with best wishes

تابع باقى الاسئله فى خلف الورقه

Dr. noha abd al salam

[2] Question Two: (21 Mark)

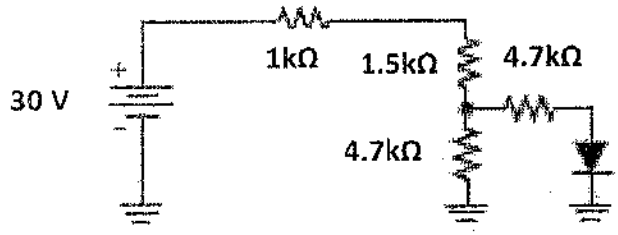
A) To obtain the hole drift current one and half of the electron drift current, how should the carrier densities to obtain? μ_n=1350 cm^2/v.sec, μ_p=480 cm^2/v.sec (7 marks).

B) For the following figure answer the following: (6 marks)

1. Whether the silicon diode is forward-biased or reverse-biased.

2. The voltage across the diode in Figures, assuming the practical model.

3. The voltage across the diode in Figures, using the complete diode model with r_d = 10 Ω and r_R = 100 MΩ.



B)Sketch the reverse biased pn junction, the calculate the junction capacitance of a pn junction consider a silicon pn junction at t=300^{O}k. With dopping concentration of N_d=10^{16} cm^{-3} and N_a =10^{15} cm^{-3}, assume that n_i=1.5x10^{10}cm^{-3} and let C_{j0}=0.5Pf and V_R=5v. (8 marks)

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Kafrelsheikh University
Faculty of Engineering
Electrical Engineering Dept.
Subject Name: Electrical Circuits
Marks : 45 Marks
Name :

Date: 29/12/2019
Time allowed: 90 minutes
Year: 1st Year
Subject Code : ECE1001
Pages :1
Academic Number:

This exam measures ILOs no: a2, a3, a6, a8, a14, b3, c4

Answer all the following questions

1-) For **Fig. (1),** find the current I_2 and the voltage V_{ab}. **[8 Marks]**

2-) For **Fig. (2),** find the current through R_1 by using **superposition** theorem. **[15 Marks]**

3-) For **Fig. (3),** find the current through each element by using the **supermesh** analysis approach. **[11 Marks]**

4-) For **Fig. (4),** determine the nodal voltages by using the **supernode** approach. **[11 Marks]**

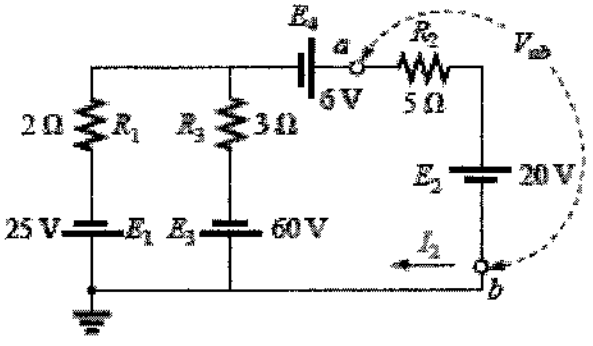

Fig. (1)

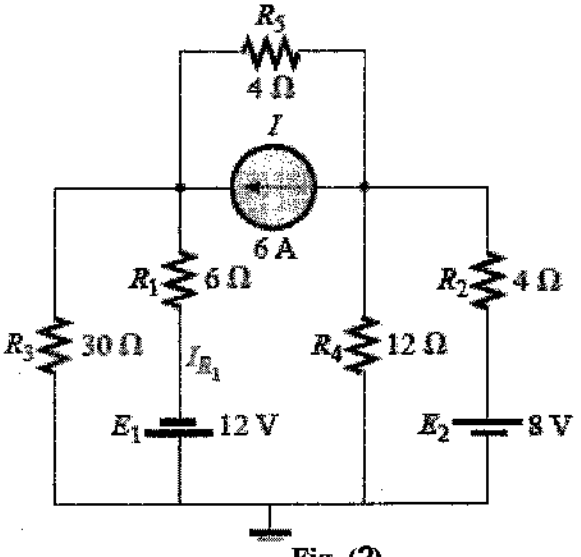

Fig. (2)

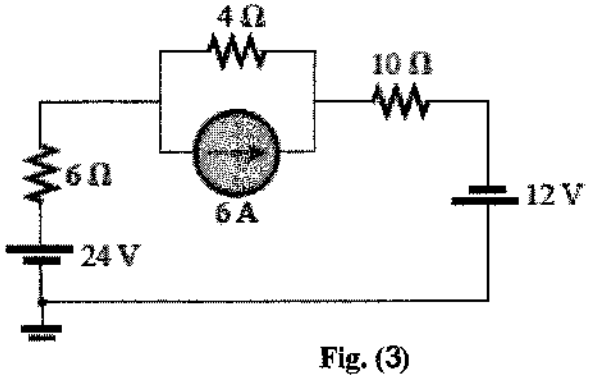

Fig. (3)

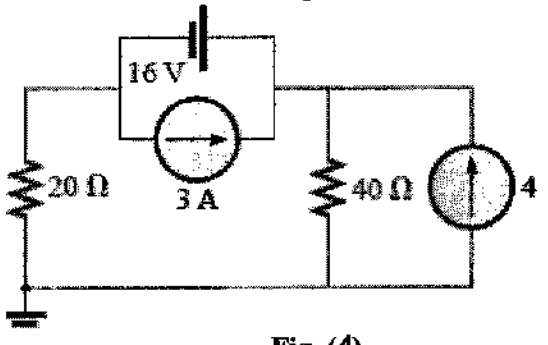

Fig. (4)

With my best wishes
Dr. Sherif Emam