中山大学软件学院 **2009** 级软件工程专业(2009 春季学期)

《电路与模拟电子技术》期末试题试卷(A)

(考试形式： 闭卷 考试时间：2 小时)

警示

《中山大学授予学士学位工作细则》第六条

考试作弊不授予学士学位

方向：_____ 姓名：_____ 学号：_____

注意：答案一定要写在答卷中，写在本试题卷中不给分。本试卷要和答卷一起交回。

1. 10 pt) For the circuit of Figure 1, compute current I_1, I_2, and V_{CD}.

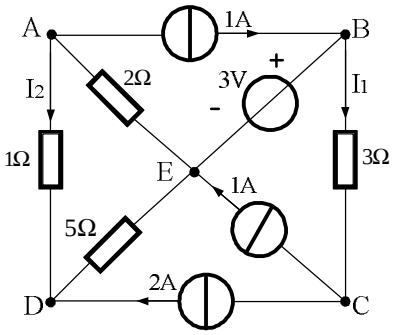

Figure 1

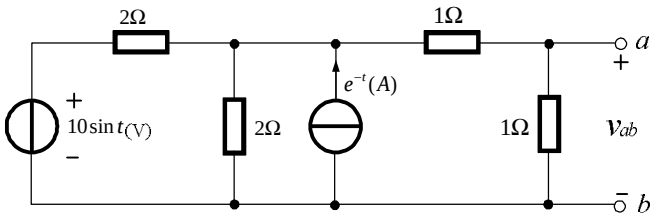

Figure 2

2. (10 pt) Use the superposition theorem to find v_{ab} in the circuit shown in Figure 2.

3. (15pt) Find the Thevenin equivalent of the network in Figure 3 viewed from v.

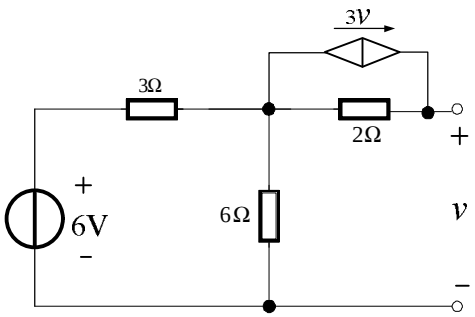

Figure 3

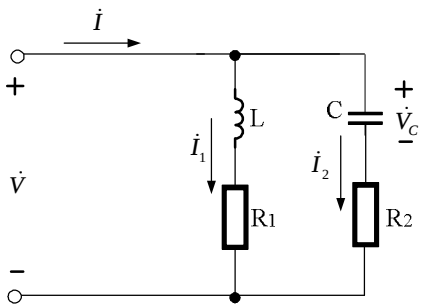

Figure 4

4. (15pt) Compute the currents $\dot{I}$、$\dot{I}_1$、$\dot{I}_2$ and $\dot{V}_C$ in Figure 4. R_1=R_2=10Ω,

L=31.8mH, C=318μF, f=50Hz, $\dot{V} = 10V$.

5. (10 pt) The circuit and input waveform of v_i =10sinωt (V) are shown in Figure 5, sketch the output waveform using the ideal model for the diode.

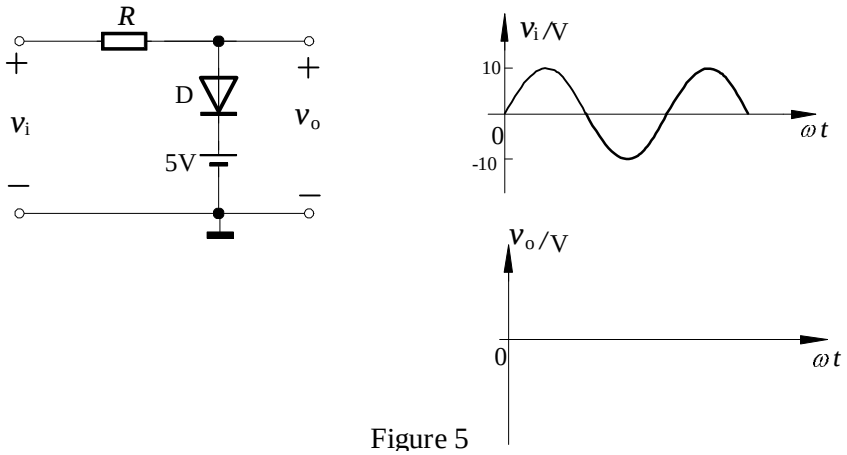

Figure 5

6. (15pt) Find Q-point and gain A_v, input resistance R_i, output resistance R_o for the circuit shown in Figure 6. Assume that the DC current through R_2 is large compared with the expected base current.

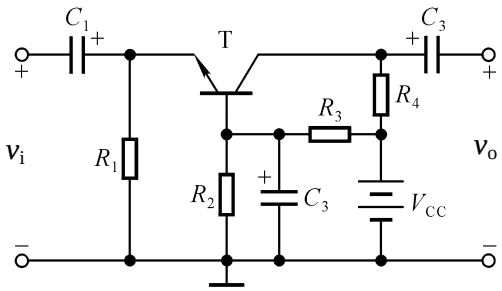

Figure 6

7. (15 pt）Determine the output voltage for the circuit of figure 7

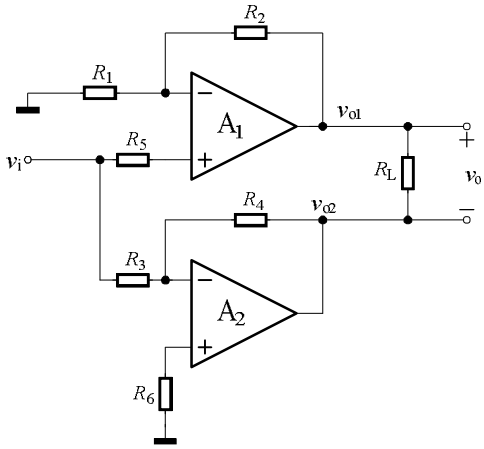

Figure 7

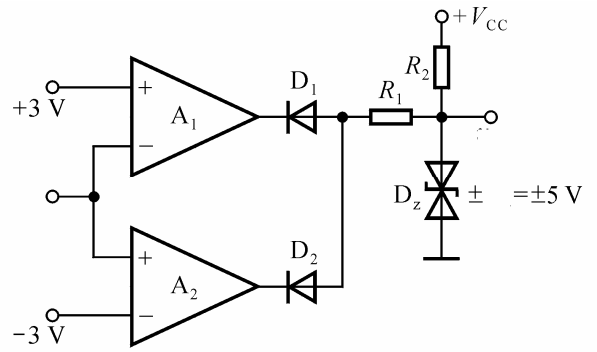

Figure 8

8. (10 pt）The circuit is shown in Figure 8. Find threshold voltages and sketch the transfer characteristics.