

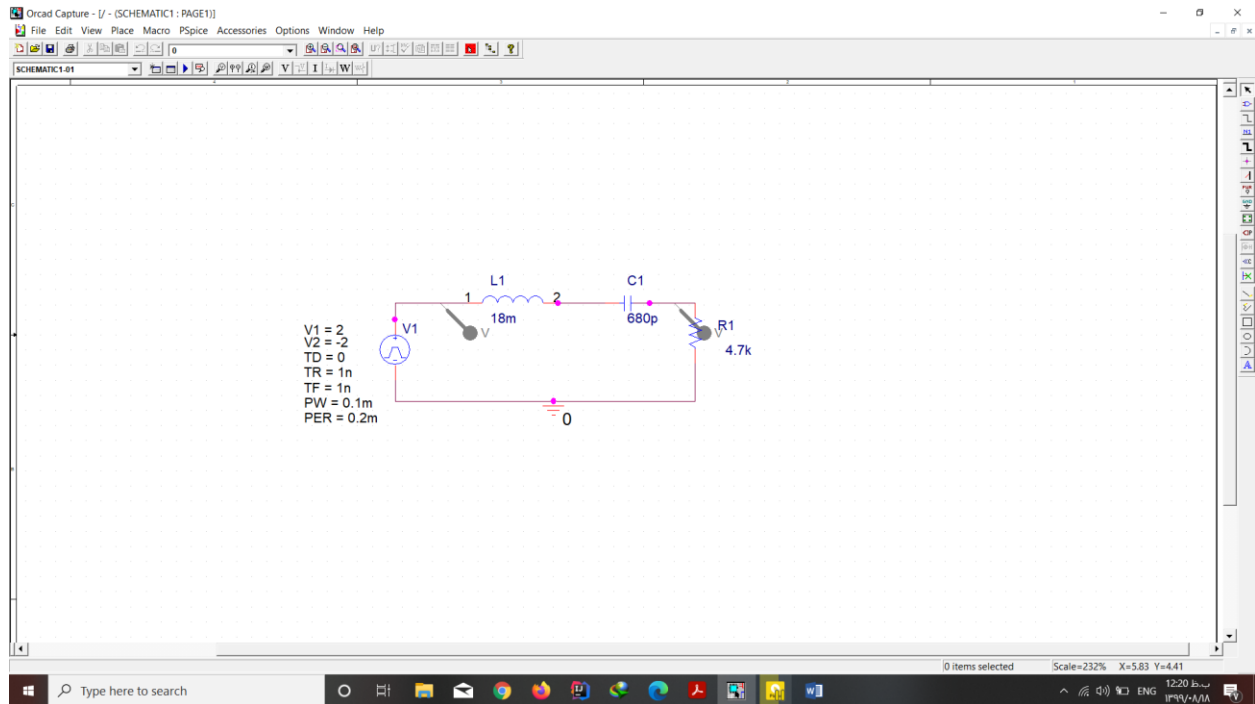
سپهر مقیسه

۹۸۳۱۱۰۳

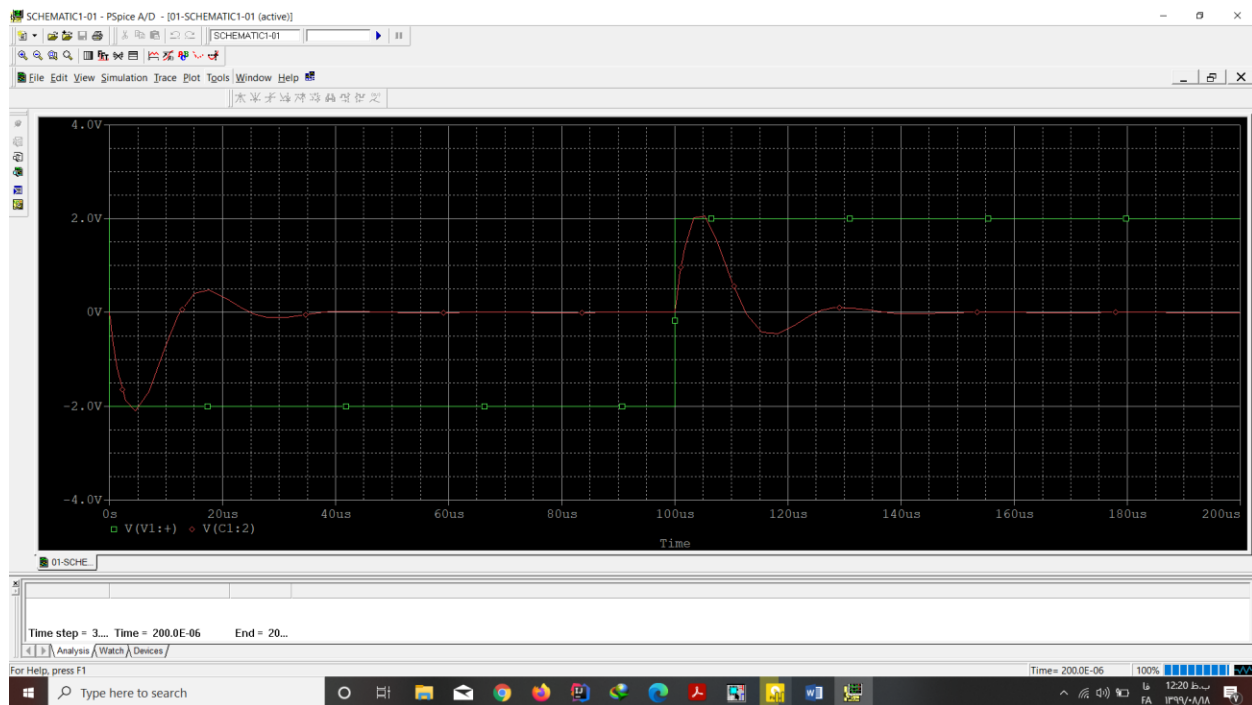
گزارش کار آزمایش ۶

۱--مدار به این شکل است :

$$f = \frac{1}{2\pi} \sqrt{\frac{1}{LC} - \frac{R^2}{4L^2}} = \frac{1}{2\pi} \sqrt{\frac{1}{(18m)(680p)} - \frac{(4.7k)^2}{4(18m)^2}} = 40468.753 \text{ 1/s}$$



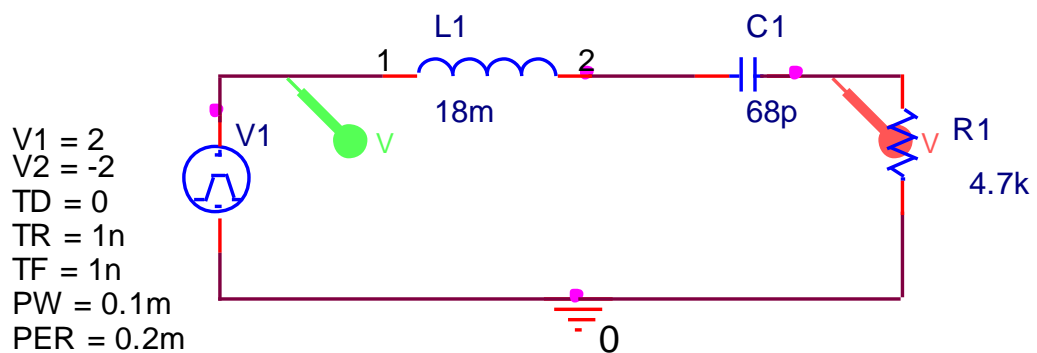
و شکل نمودار:



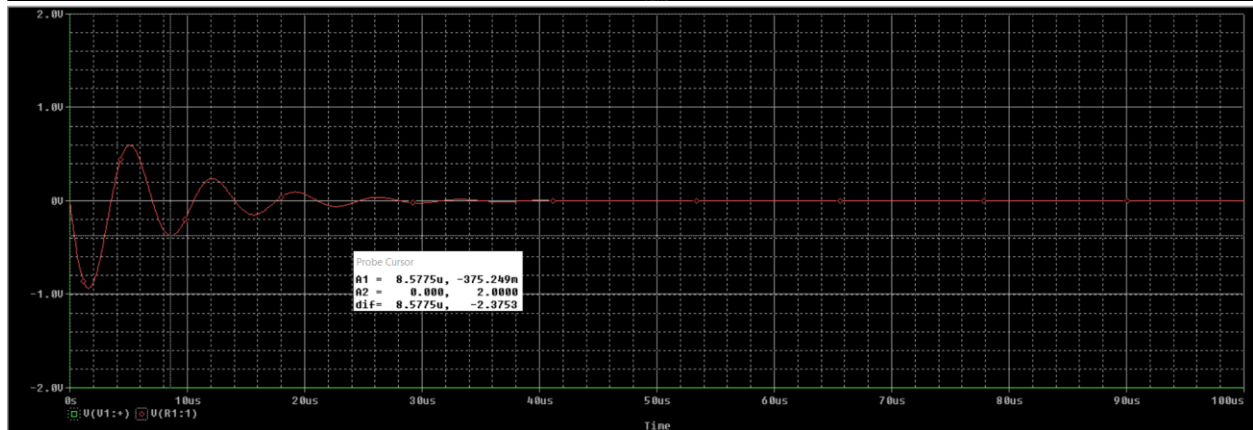
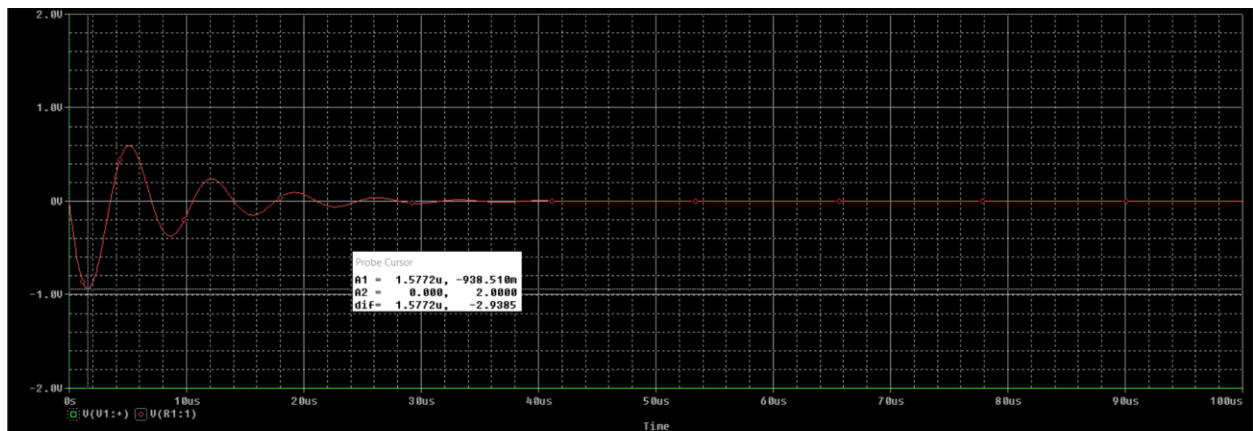
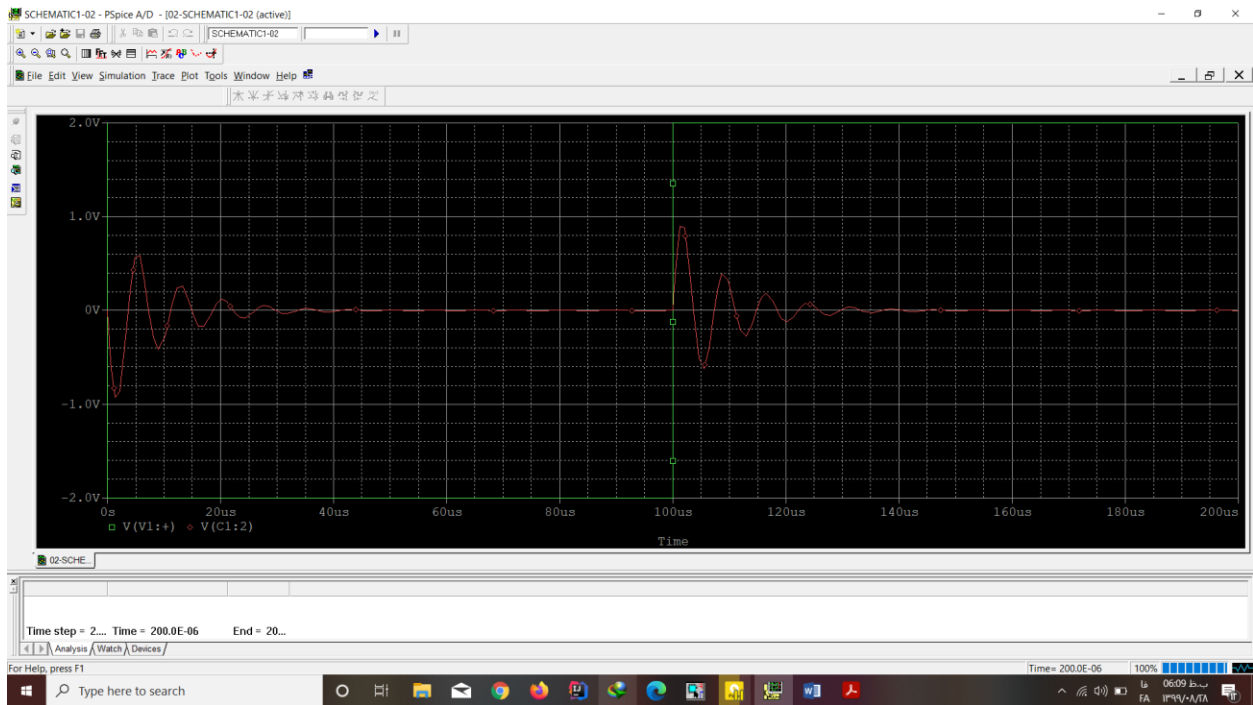
$$t = 28.978\mu - 4.2773\mu = 24.7007\mu s$$

$$f = 1/t = 40484.6826 \text{ 1/s}$$

در قسمت بعد خازن را 68p میگذاریم



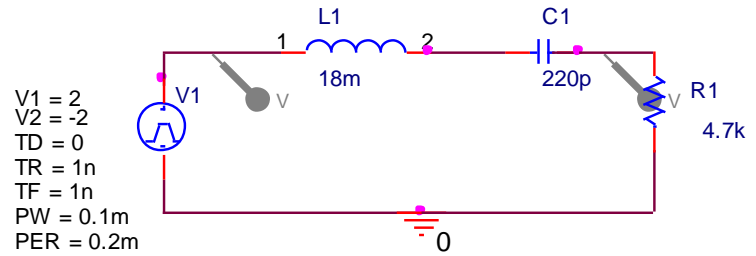
$$f = \frac{1}{2\pi} \sqrt{\frac{1}{LC} - \frac{R^2}{4L^2}} = \frac{1}{2\pi} \sqrt{\frac{1}{(18m)(68p)} - \frac{(4.7k)^2}{4(18m)^2}} = 142347.9454 \text{ 1/s}$$



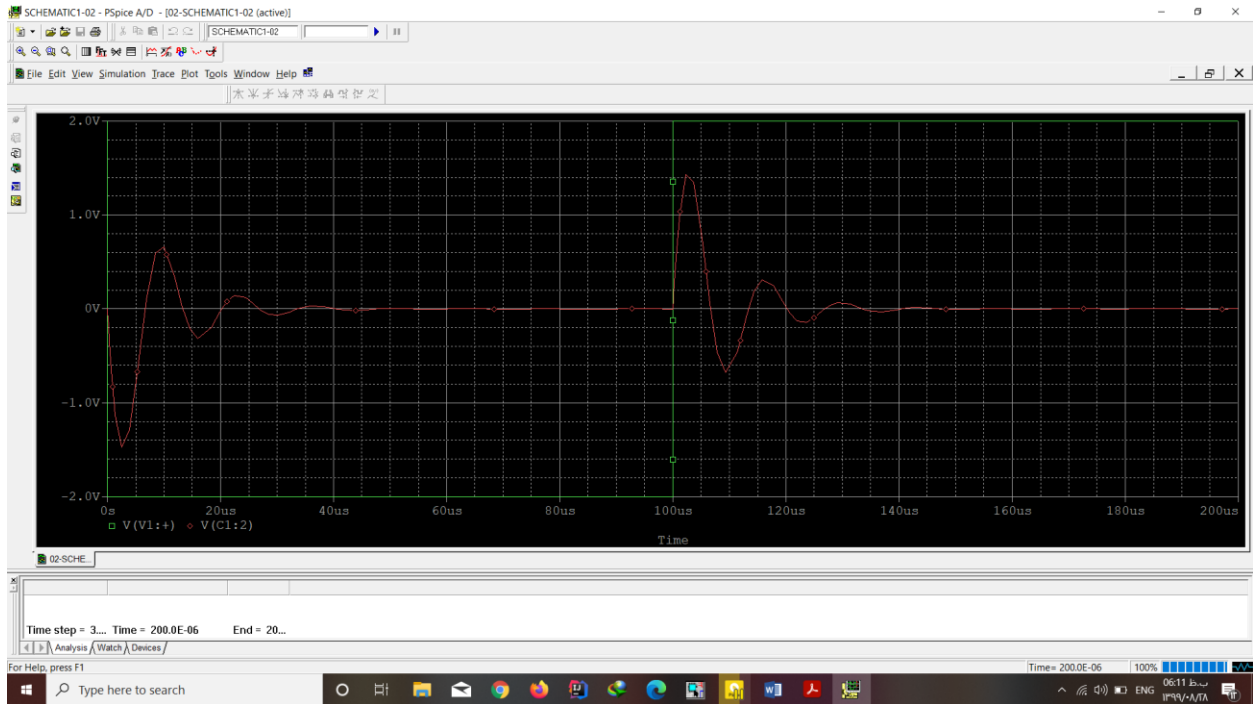
$$t = 8.5775\mu - 1.5772\mu = 7.0003\mu s$$

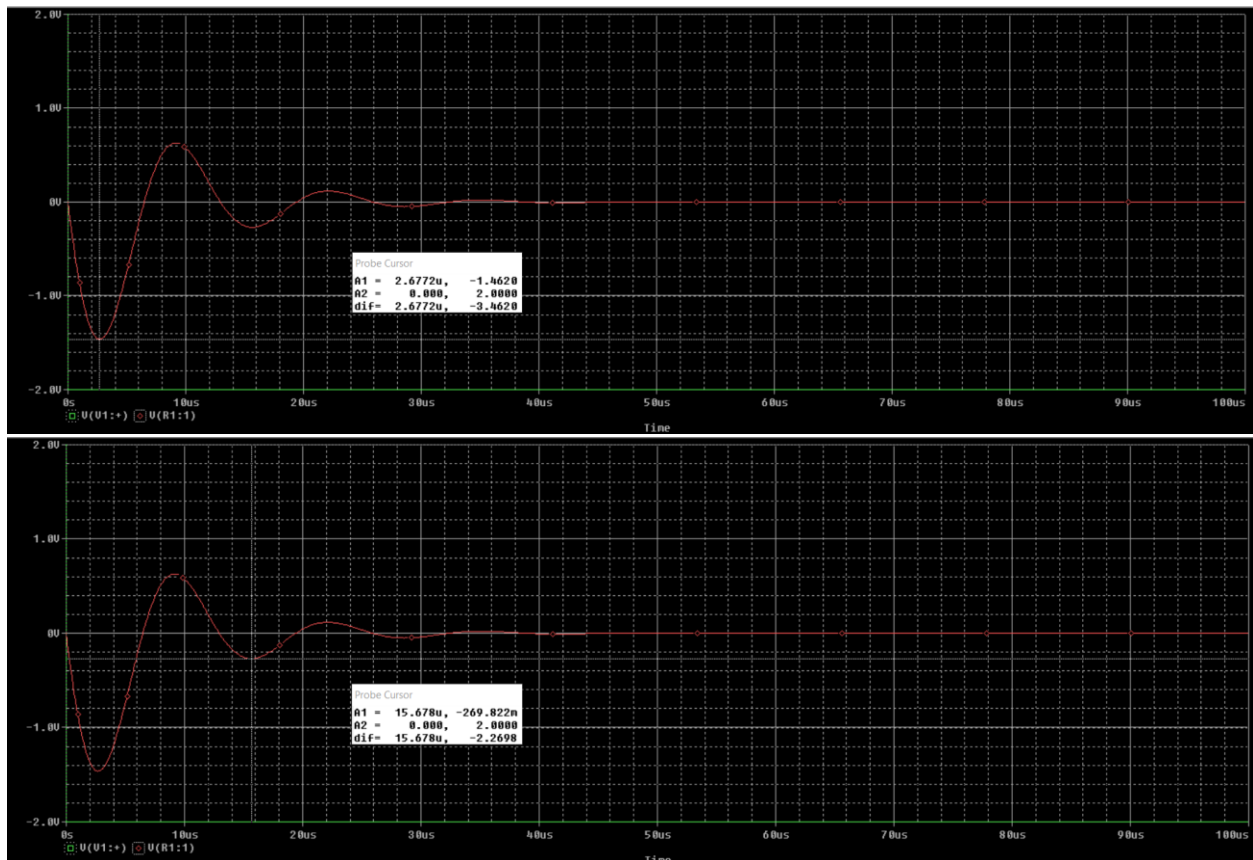
$$f = 142795.9445 \text{ 1/s}$$

و در قسمت بعد ۲۲۰ p میگذاریم



$$f = \frac{1}{2\pi} \sqrt{\frac{1}{LC} - \frac{R^2}{4L^2}} = \frac{1}{2\pi} \sqrt{\frac{1}{(18m)(220p)} - \frac{(4.7k)^2}{4(18m)^2}} = 77232.05767 \text{ 1/s}$$





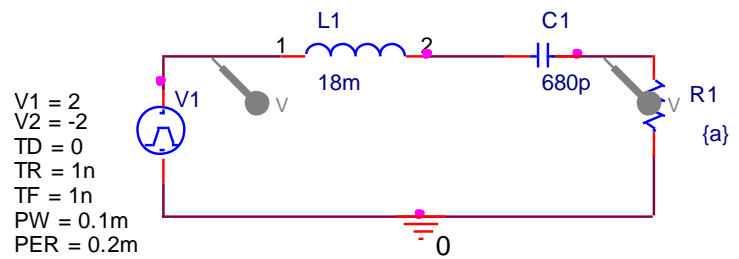
$$t = 15.678u - 2.6772u = 13.0008u \text{ s}$$

$$f = 76918.3434 \text{ 1/s}$$

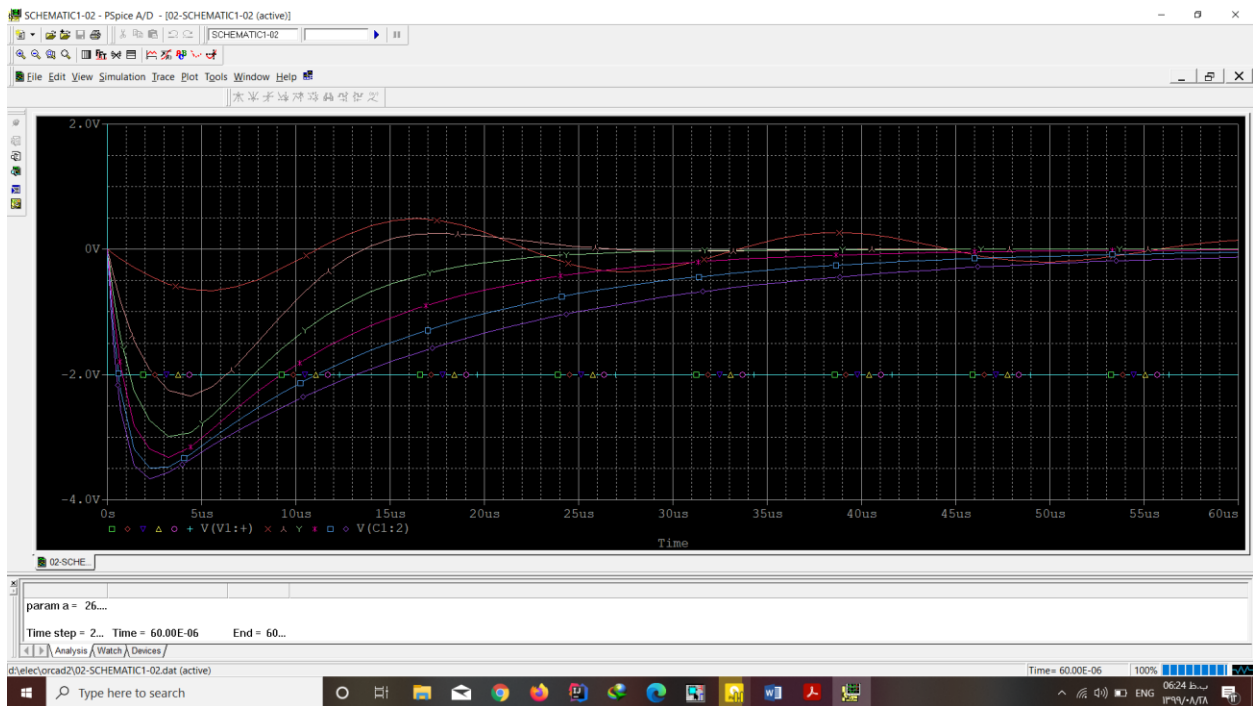
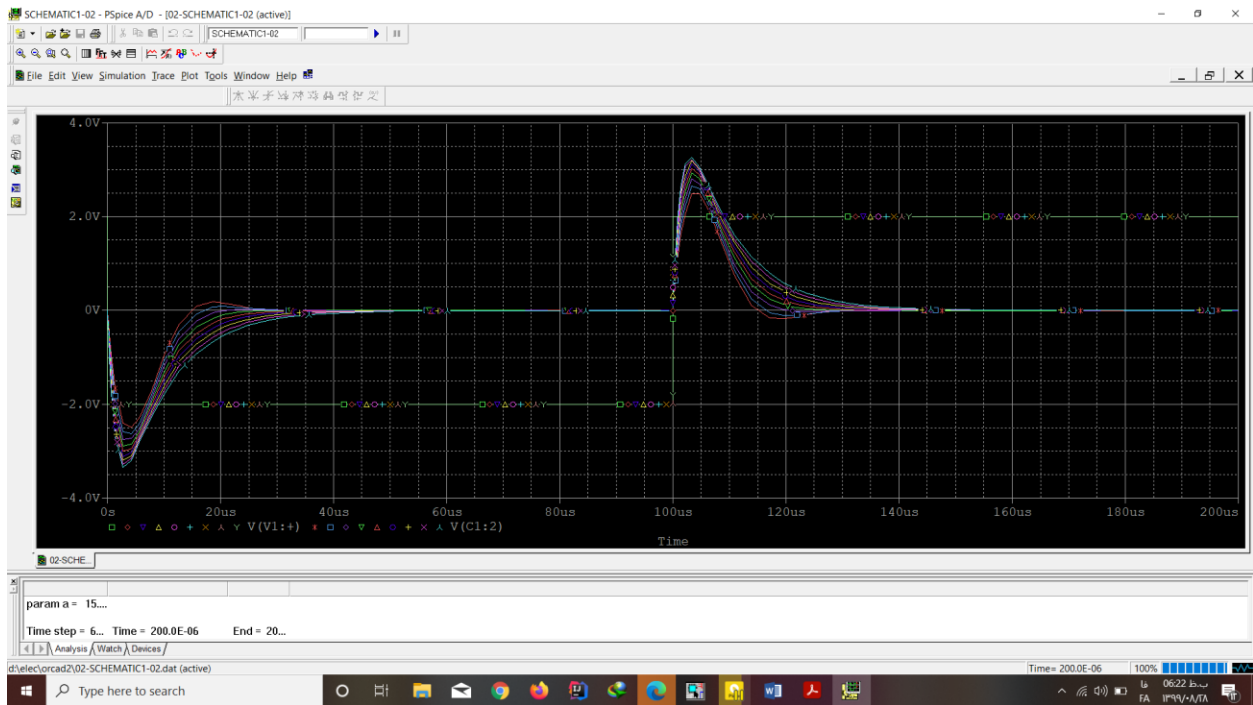
در قسمت ۳ :

PARAMETERS:

$$a = 1$$

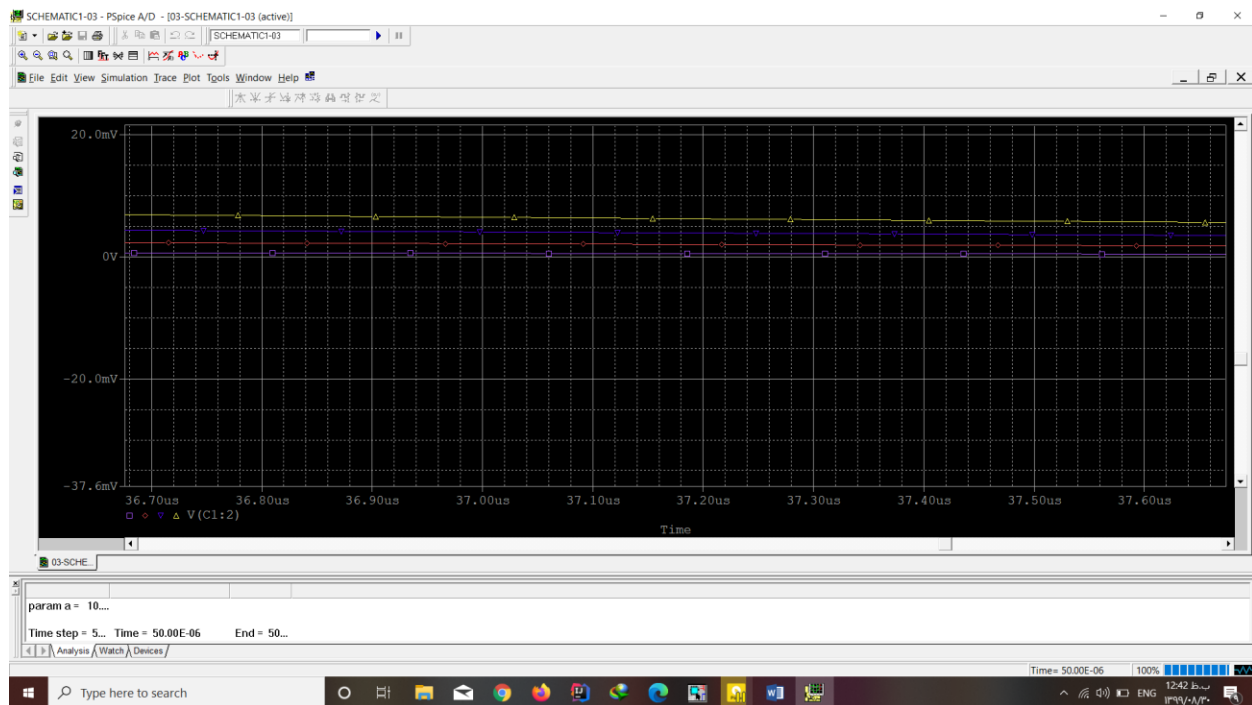


و شکل :



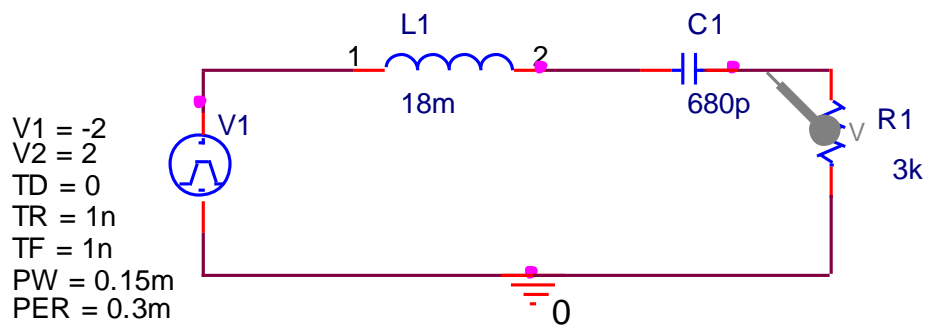
$$R_{blue} = 10.2k$$

$$R_c = 2\sqrt{\frac{L}{C}} = 2\sqrt{\frac{18m}{680p}} = 10.2899k$$

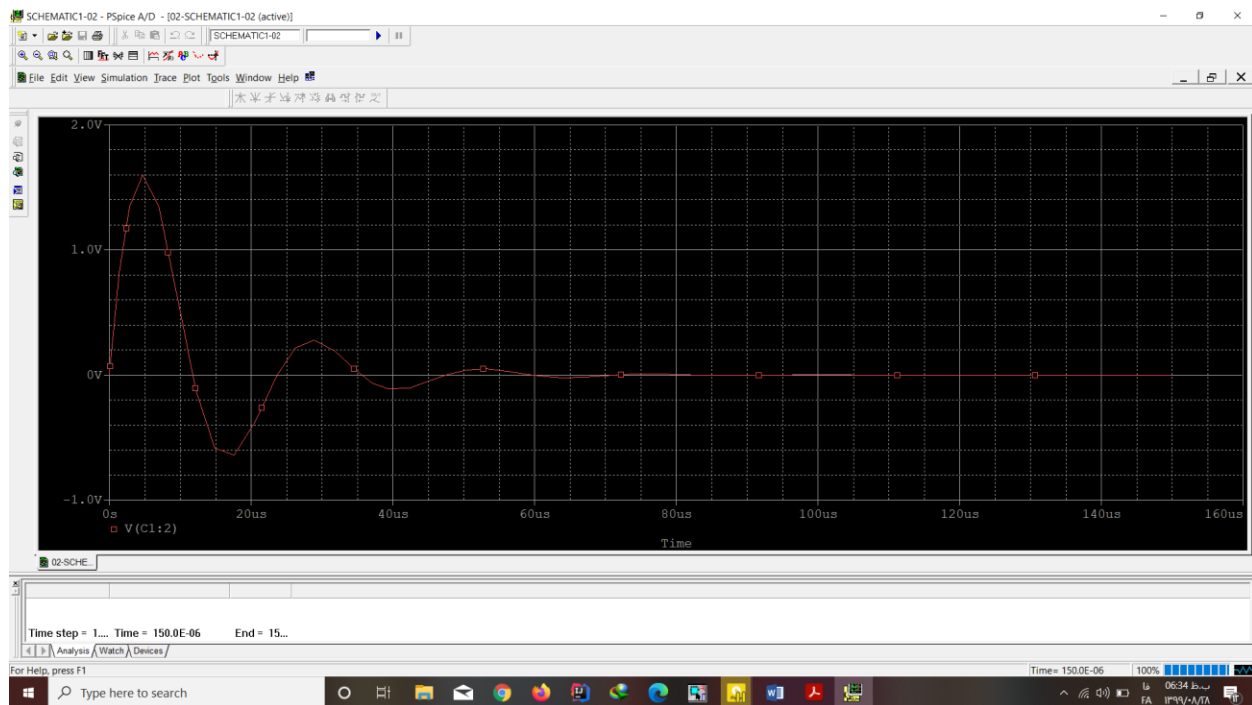


می بینیم که مماس با خط $v=0$ می شود.

$r=3k$ -۴



شکل:

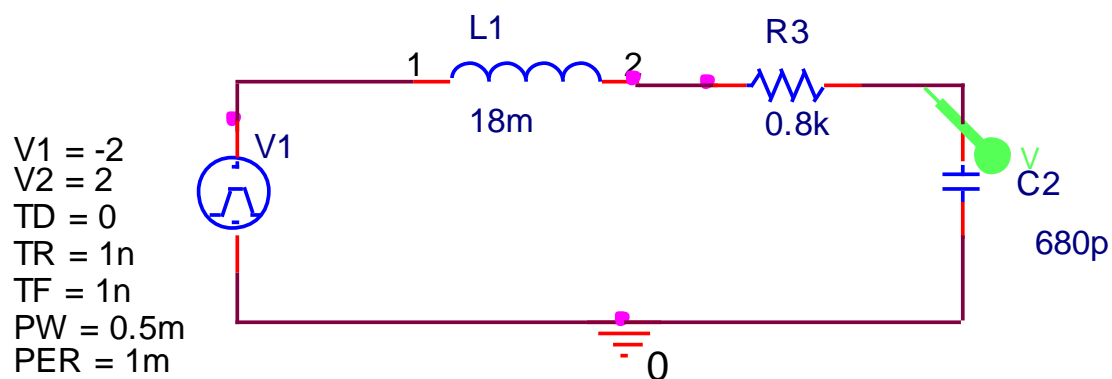


$$5\tau = 59.137\mu$$

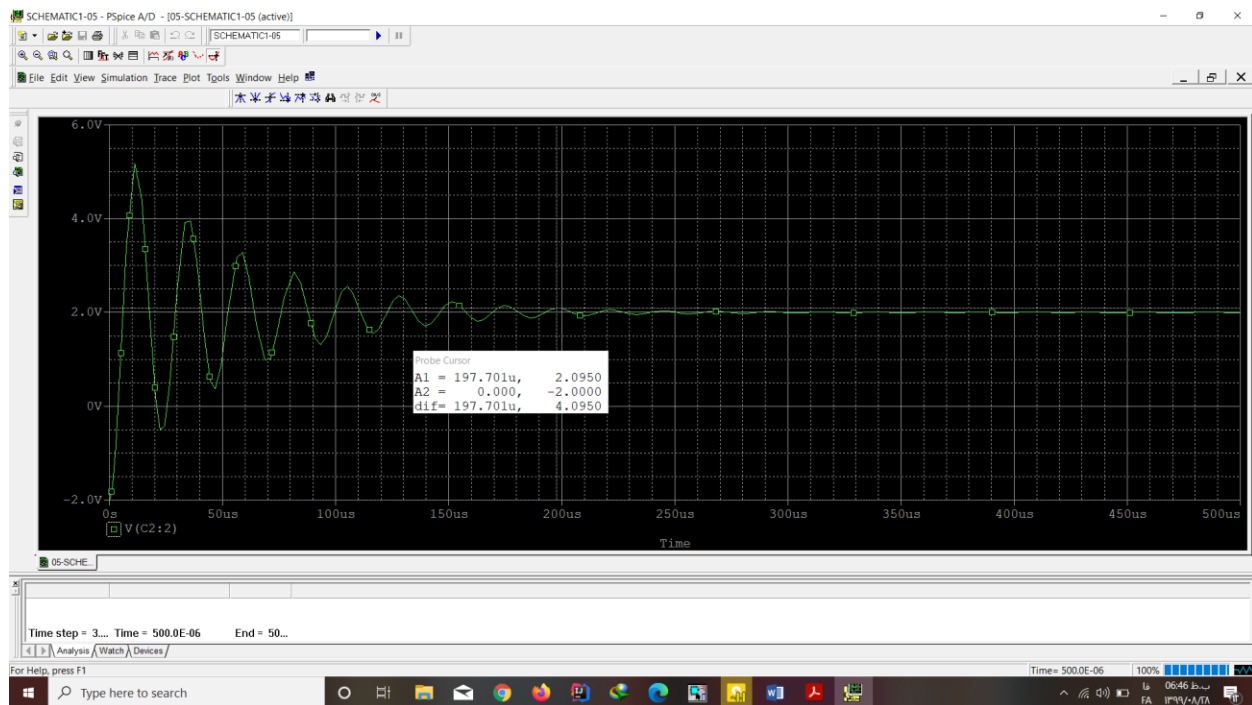
$$\tau = 11.8274\mu$$

$$\tau = \frac{2L}{R} = \frac{2(18m)}{3k} = 12\mu$$

برای قسمت بعدی



و شکل به این صورت است



و تقریبا ۸ تا overshoot است