2020-2021 Spring, CSA, CRN:25203, 1. Quiz **29.03.2021**

The exam is open-book and open-lecture notes. Exams are exclusive to students and they are expected to work on the solutions on their own. The students are expected to abide with the ITU Honor Code

http://www.sis.itu.edu.tr/tr/yonetmelik/AkademikOnurSozuEsaslar.html

The students are expected to upload solutions in PDF format to NINOVA before the deadline.

Each page of the solution papers has to be numbered and should have name, last name and Student ID number on top right corner. Otherwise your score will be taken off by 10 (over 100) points.

The state equations of a second degree circuit are given below. Find the zero-state response of the inductor current $i_L(t)$.

$$\frac{d}{dt}\begin{bmatrix} V_C(t) \\ i_L(t) \end{bmatrix} = \begin{bmatrix} -2 & -1 \\ 1 & -4 \end{bmatrix}\begin{bmatrix} V_C(t) \\ i_L(t) \end{bmatrix} + \begin{bmatrix} 1 \\ 2 \end{bmatrix} u(t) \quad ; \quad \begin{bmatrix} V_C(0) \\ i_L(0) \end{bmatrix} = \begin{bmatrix} 1 \\ 1 \end{bmatrix}$$