Istanbul Technical University
Department of Computer Engineering

BLG 231E - Digital Circuits
Assignment 5

Due Date: Thursday, December 22, 2022, 23:59.

- Please **write and draw** <u>neatly.</u>
- <u>Please prepare your homework using a computer. Points will be taken off for handwritten submissions.</u>
- **Consequences of plagiarism:** Any cheating will be subject to disciplinary action.
- **No late submissions** will be accepted. **Do not send your solutions by e-mail.** We will only accept files uploaded to the official Ninova e-learning system before the deadline. Do not risk leaving your submission to the last few minutes.
- **Submissions:** Submit your solution PDF to Ninova. Please **write your full name** (first and last name) and Student ID in the box below.

Student ID :	If you have any questions, please e-mail teaching assistant
Full Name :	• **Esin Ece Aydın** (aydinesi16@itu.edu.tr)

Analyze the synchronous sequential circuit with a single input (X) and two outputs (A, B) shown in the figure below. **(Note:** One flip-flop is a J-K flip-flop, the other is a D flip-flop).

a) Write the next state equations, $S^+= H(S,I)$.

b) Construct the state/output table.

c) Draw the state diagram.