

DIGITAL SIGNAL PROCESSING (CP-301)

Assignment No 4

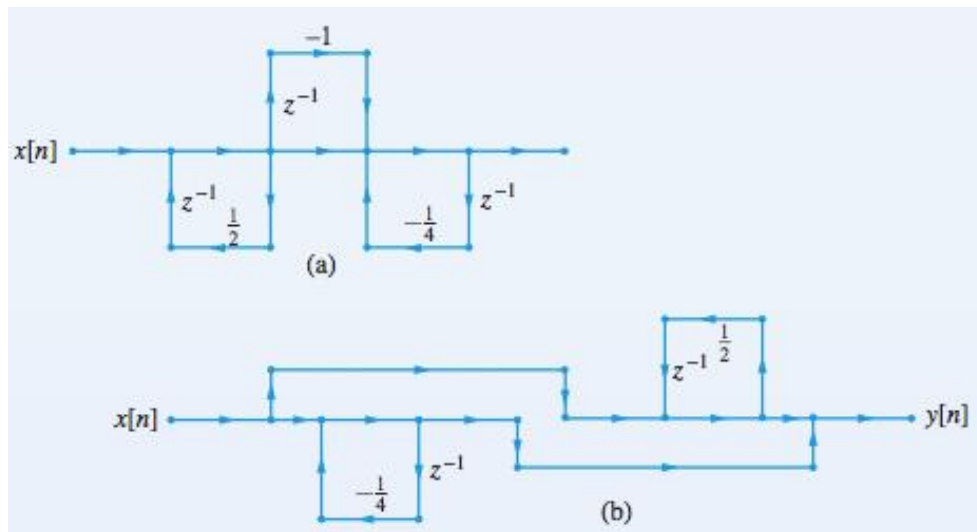
CLO-4

Submission Date: 28-01-2022

Instructions:

- Individual Assignment
- Submit scanned copy online on Microsoft Team

Q No 1: Determine the system function of the following signal flow graphs



Q No 2: Design IIR filters using impulse invariance and bilinear transformation based on Butterworth approximation.

$$0.23306 \leq |H(e^{jw})| \leq 1$$

$$0 \leq |w| \leq 0.4\pi$$

$$|H(e^{jw})| \leq 0.17782$$

$$0.5\pi \leq |w| \leq \pi$$

Q No 3: Design IIR filters using impulse invariance and bilinear transformation based on Butterworth approximation.

$$0.78166 \leq |H(e^{jw})| \leq 1$$

$$0 \leq |w| \leq 0.5\pi$$

$$|H(e^{jw})| \leq 0.34409$$

$$0.6\pi \leq |w| \leq \pi$$