Assignment 5

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2018-09-12, 23:59 IST.

1) In the multirate system shown in Fig. 1, $y(n)$ is given by:
   - $2x(n - 2)$
   - $x(2n - 2)$
   - $x(2n)$
   - $x(n - 3)$

No, the answer is incorrect.
Score: 0

Accepted Answers:
- $x(n - 3)$

2) Consider the decimator shown in the Fig. 2. The decimator is:

- $x(n)$
- $y(n)$

Score: 1 point
3)
\[ x(n) \xrightarrow{z^{-1}} x(n-1) \]
\[ x(n) \xrightarrow{z^{-1}} x(n-1) \]

(a) \hspace{1cm} (b)

\[ x(n) \xrightarrow{z^{-1}} x(n-1) \]
\[ x(n) \xrightarrow{z^{-1}} x(n-1) \]

(c) \hspace{1cm} (d)

**Fig. 3**

The system shown in the Fig. 3(a) is equivalent to

- the system shown in the Fig. 3(b),
- the system shown in the Fig. 3(c),
- the system shown in the Fig. 3(d),
- None of the above.

No, the answer is incorrect.
Score: 0

**Accepted Answers:**
None of the above.

4)
\[ x(n) \xrightarrow{L} y(n) \]

**Fig. 4**

In the system shown in the Fig. 4

- \( y(n) = x(n) \),
- \( y(n) = \begin{cases} x(n), & \text{if } \frac{n}{L} \text{ is an integer} \\ 0, & \text{otherwise} \end{cases} \)
- \( y(n) = x(Ln) \),
- \( y(n) = \begin{cases} x(n/L), & \text{if } \frac{n}{L} \text{ is an integer} \\ 0, & \text{otherwise} \end{cases} \)

No, the answer is incorrect.
Score: 0

**Accepted Answers:**
\[ y(n) = \begin{cases} x(n), & \text{if } \frac{n}{L} \text{ is an integer} \\ 0, & \text{otherwise} \end{cases} \]
Consider the system in the Fig. 5. It is given that $h(n)$ is a length 2 causal sequence with $h(0) = 1$, $h(1) = -1$, and $g(n) = h(-n)$. Then,

- $y(4) = x(4) - x(3)$,
- $y(4) = x(4) - x(2)$,
- $y(4) = -x(4) + x(3)$,
- $y(4) = -x(4) + x(2)$.

No, the answer is incorrect.

Score: 0

Accepted Answers:
- $y(4) = -x(4) + x(3)$,