

- 9:

. - 2013. - .1, .2 - .56-58

Z-

Z-

Z-

s(k)

Z-

Z-

Z-

$$s(k) = a \cdot x(k) + b \cdot y(k), \quad S = aX(z) + bY(z).$$

Z-

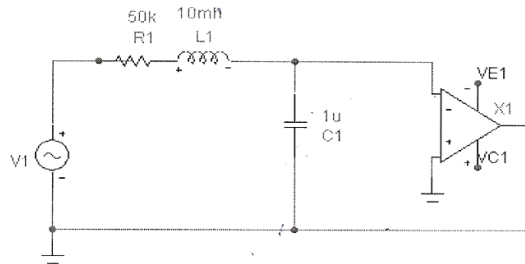
n :

$$y(k) = x(k-n)$$

$$Y(z) = \sum_{k=-\infty}^{\infty} y(k)z^k = \sum_{k=-\infty}^{\infty} x(k-n)z^k = z^n \sum_{k=-\infty}^{\infty} x(k-n)z^{k-n} = z^n \sum_{m=-\infty}^{\infty} x(m)z^m = z^n X(z)$$

n , z- z^n

( .1).



.1 - R, L, C,

$$U = U_m \cdot \sin(\omega t)$$

$$\frac{LC}{k} \frac{d^2 u_{\text{ББХ}}}{dt^2} + \frac{rC}{k} \frac{du_{\text{ББХ}}}{dt} + \frac{1}{LC} u_{\text{ББХ}} = u_{\text{БХ}} \quad (1)$$

$$(2) \quad \frac{d^2 u_{\text{ББХ}}}{dt^2} + \frac{r}{L} \frac{du_{\text{ББХ}}}{dt} + \frac{1}{LC} u_{\text{ББХ}} = \frac{k}{LC} u_{\text{БХ}}$$

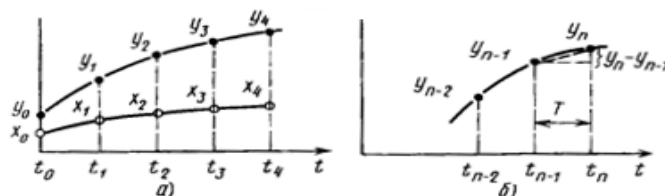
$$u_{\text{ББХ}} = y, \quad u_{\text{БХ}} = x,$$

$$(3) \quad y'' + \frac{r}{L} y' + \frac{1}{LC} y = \frac{k}{LC} x$$

$$y' = y'' -$$

$$y = x$$

$$y' = y''$$



. 2 -

Z-

. 2

$t_1, t_2, t_3, \dots, t_n$   
 $x = y,$

$$y' = y''$$

$$y_{n-1} = y_n$$

$$t_{n-1} = t_n \quad (2)$$

$$y'_n \approx (y_n - y_{n-1})/T$$

$$y_{n-2}, y_{n-1} =$$

$$y'_{n-1}:$$

$$y'_{n-1} \approx (y_{n-1} - y_{n-2})/T.$$

$$y''_n \approx (y'_n - y'_{n-1})/T$$

$$y'_n = y'_{n-1}$$

$$y''_n = (y_n - 2y_{n-1} + y_{n-2})/T^2$$

$$y'_n \text{ и } y''_n$$

(2):

$$\frac{y_n - 2y_{n-1} + y_{n-2}}{T^2} + \frac{r}{L} \frac{y_n - y_{n-1}}{T} + \frac{1}{LC} y_n = \frac{k}{LC} x_n.$$

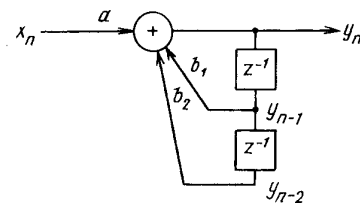
$y_n$ :

$$y_n = \frac{k}{LC \left( \frac{1}{T^2 + \frac{r}{LT}} + \frac{1}{LC} \right)} x_n + \left( \frac{2}{T^2} + \frac{r}{LT} \right) \frac{1}{\frac{1}{T^2} + \frac{r}{LT} + \frac{1}{LC}} \times y_{n-1} - \frac{1}{T^2 \left( \frac{1}{T^2} + \frac{r}{LT} + \frac{1}{LC} \right)} y_{n-2}$$

$$y_n = ax_n + b_1 y_{n-1} + b_2 y_{n-2} \tag{4}$$

$$a, b_1, b_2 \tag{3}$$

, .3. , ;



.3 -

: . . .