table some delication

Question 1:-

1) Method of met & residue

$$X(Z) = [reside of X(S)Z d ple = -1] + [reside of X(B)Z d ple = -2]$$

$$z-e^{-1}+z-e^{-2i}=1-e^{-2i}+1$$

$$= 2(1-e^{-2T}z^{-1}) - (1-e^{-T}z^{-1})$$

$$= (1-e^{-T}z^{-1})(1-e^{-2T}z^{-1})$$

$$= \frac{1-2e^{-2t}z^{-1}+e^{-t}z^{-1}}{(1-e^{-t}z^{-1})(1-e^{-2t}z^{-1})}$$

2) Method of impulse

$$X(s) = s+3 = A + B = 2 = 1$$

 $(s+1)(s+2) = s+1 = s+2 = s+1 = s+2$

$$S+3 = AS+2A + BS+B \Rightarrow A+B=1 \Rightarrow A=2$$

$$\Rightarrow 2A+B=3 \Rightarrow B=1$$
Invese of laplace $\Rightarrow x(t) = 2e^{-t} - 2e^{-2t}$

$$X(z) = \frac{2}{1 e^{-\frac{1}{2}-1}} - \frac{1}{1 - e^{-\frac{1}{2}-1}} = \frac{1 + e^{-\frac{1}{2}}(1 - 2e^{-\frac{1}{2}}) 2^{-2}}{(1 - e^{-\frac{1}{2}-1})(1 - e^{-\frac{1}{2}-1})}$$

PAGE Question 3:-Y(S) = (5+1)(S+2) X *(S) = (5+1 - 5+2 1 = AS +2A + SB+B -Sackeccian

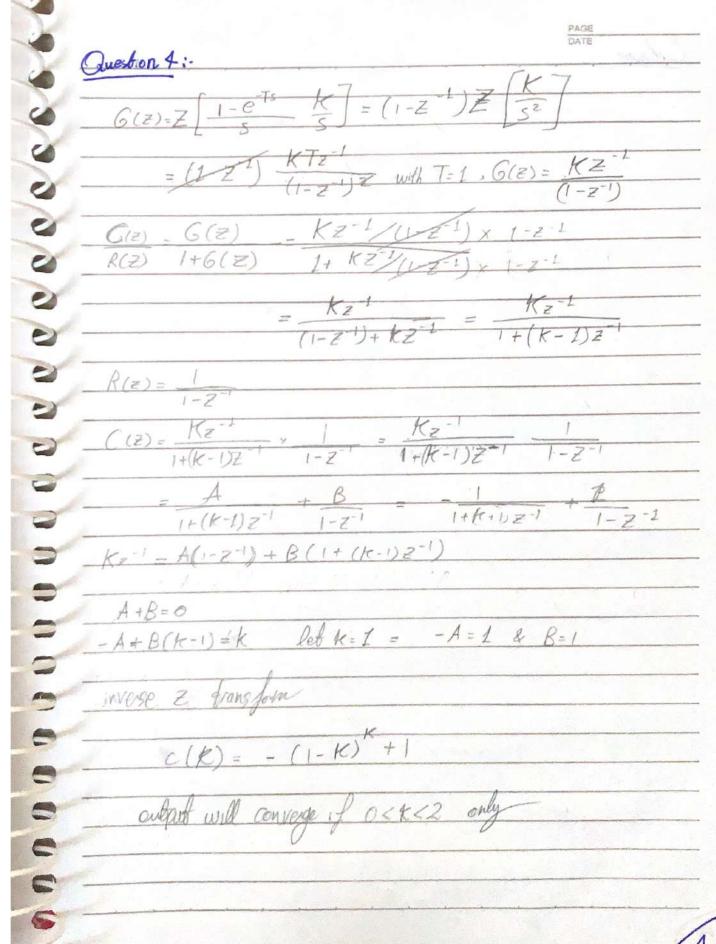
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Controus E(s)= R(s)-C(s) => E*(s)= R*(s)-C*(s) $E'(s) = R''(s) - \left(\frac{K}{S} \cdot \frac{1 - e^{-T_S}}{S}\right)^{\frac{K}{2}} E^{2}(s)$ F*(s)(1+(K 1-e-13)) = R*(s) R*(3)/1+(K1-e-75) * F*(5)= K 1-e-TS 5 5 1 + K 1-e-TS | * R* S $\frac{|K| - e^{-t_3}}{5} = 1 - Z^{-1} Z \left[\frac{K}{5^2} \right] = \frac{|K|^2}{1 - 2^{-1}}$ $\frac{1-e^{-3}}{+(k+1)e^{-3}} = \frac{K}{5!} \left[1 - ke^{-5} + k(k-1)e^{-25} - k(k-1)^2 e^{-35} \right]$ $C(t)=kt-k^2(t-1)!(t-1)+k^2(k-1)(t-2)!(t-2)$ - $k^2(k-1)^2(t-3)!(t-3)+\cdots$