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FPT:

- Z-transform:

- $$v) \quad x(n) = a^n u(n) + b^n u(-n-2).$$

- $$x_2(n) = 4\delta(n) + 3\delta(n-1)$$

- \_/\_/\_
- i) Find the z-transform of the convolution  $(x(z) = z(x_1(n) * x_2(n)))$
- ii) Determine  $x(n)$  using z transformation.

5. Consider the transfer function  $H(z) = \frac{z+1}{z-0.5}$

Determine -

- i) The impulse response  $h(n)$ .
- ii) Step response  $y(n)$
- iii) System response  $y(n)$  if the input is given as  $x(n) = (0.2)^n u(n)$ .

6. Obtain and sketch the impulse response of shift invariant system given below:

$$y(n] = 0.2x(n) + x(n-1) + 0.3x(n-3) + 0.5x(n-4)$$