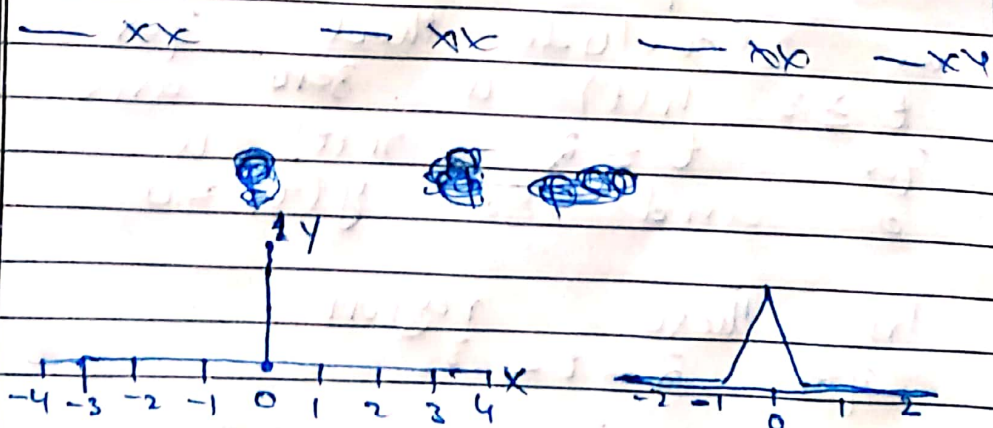# Answer No 2
Part (a)

Impulse Signal in descrete time:

In discrete time the unite Impulse is a Simply a sequence that is zero except at $n=0$ where it is unity.

Impulse Signal in Continous time:

In Continous time, it is somewhat badly be-haved mathematically being of Infinite height and zero width but having a finite area. the unite step and unite Impulse are closely related.

— XX   — XX   — XX   —XX

Discrete time Impulse

Continous unite Impulse signal.

— XX   — XY   — XY Y

Impulse response for system.

When a system is shocked by a delta function it produce an output known as its impulse response to LTI system the impulse response completly determine the output of the system given any arbitrary input. the output can be found using discrete time convolution

$-xx \quad -xv \quad -xv \quad -xv$

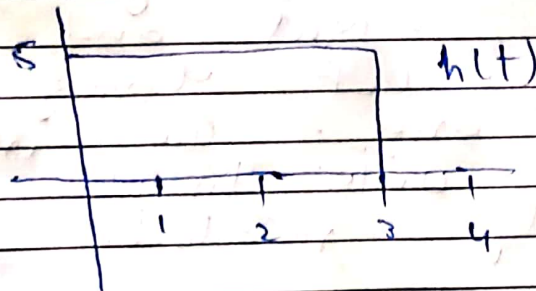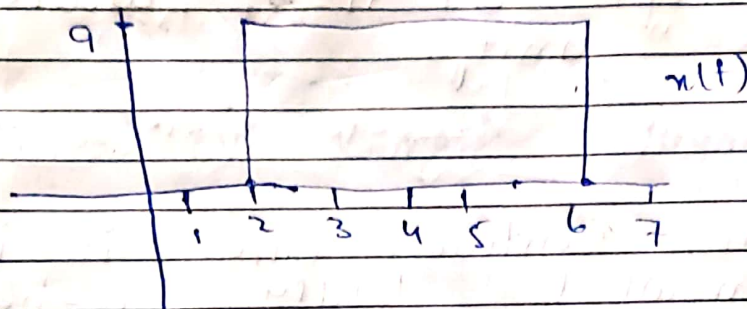P Φ 1 f 6

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Answer No 2

Part (b)

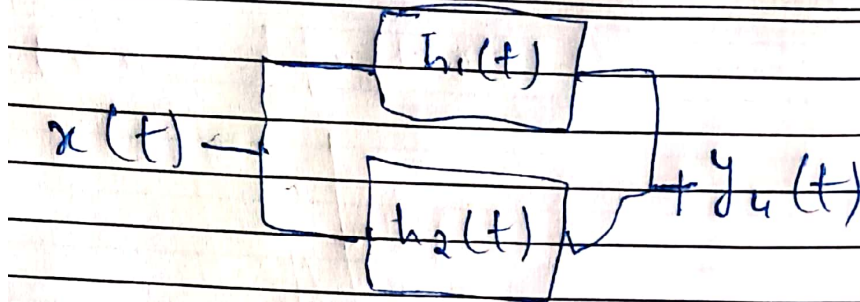My Reg No is 19PWCSE1795
So

$$S = 5$$
$$B = 9$$

we Conclude that for $t \geq 3$ $h(t)$ is zero and for $t < 2$, $x(t)$ is 0 and so $y(t) = 0$

In these region for $2 < t < 3$,

$$y(t) = \int_{2}^{3} x(t) h(t) \, dt$$

$$x(t) = 5 \quad \text{for} \quad 2 < t < 3$$
$$h(t) = 7 \quad \text{for} \quad 2 < t < 3$$

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$$y(t) = \int_{2}^{3} (5)(7) \, dt$$

$$y(t) = 35$$

$$y(t) = \begin{cases} 0 & t < 2 \\ 35 & 2 \le t \le 3 \\ 0 & t > 3 \end{cases}$$

Answer 2

Part (c)

$$x(t) \rightarrow \boxed{h_1(t)} \rightarrow \boxed{h_2(t)} \rightarrow y_1(t)$$

$$y_1(t) = h_1(t) * h_2(t)$$

$$x(t) \rightarrow \boxed{h_2(t)} \rightarrow \boxed{h_1(t)} \rightarrow y_2(t)$$

$$y_2(t) = h_2(t) * h_1(t)$$

By Commutative property

$$y_1(t) = y_2(t)$$

$$x(t) \longrightarrow \begin{array}{c} \boxed{h_1(t)} \\ \boxed{h_2(t)} \end{array} \longrightarrow y_3(t)$$

Castelli

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$$x(t) \longrightarrow \boxed{h_1(t)}$$
$$\boxed{h_2(t)} \longrightarrow + y_4(t)$$

$$y_3(t) = h_1(t) + h_2(t)$$

$$y_4(t) = h_1(t) + h_2(t)$$

$$y_3(t) = y_4(t)$$

the   END