

12 Pages

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3. The answers must be legibly written. The Examiners can either ignore the script or have it typed and the expense of typing charged to the candidate.
4. Write your answers in ink.
5. Begin each answer on a fresh page. Do all rough work in the answer book and cross it through.
6. No part of this book is to be torn out; it must be handed in complete.
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[illegible]

Office Use

1	-0.2
2	-0-
3	0.5
4	0.7
5	20

$\frac{34}{100}$

Total

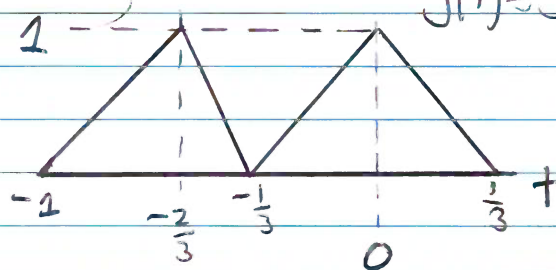
34/100	121
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Q1a) i continuous time signal
Triangular Pulse

ii See below

$$y(t) = x(2t+3)$$

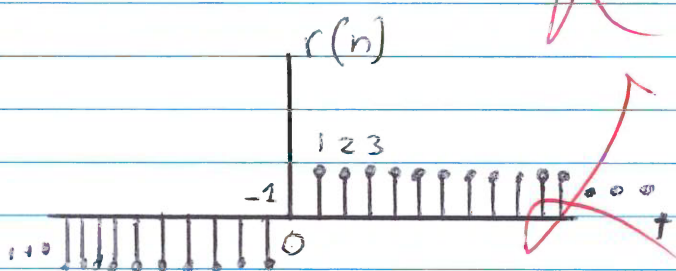
iii)



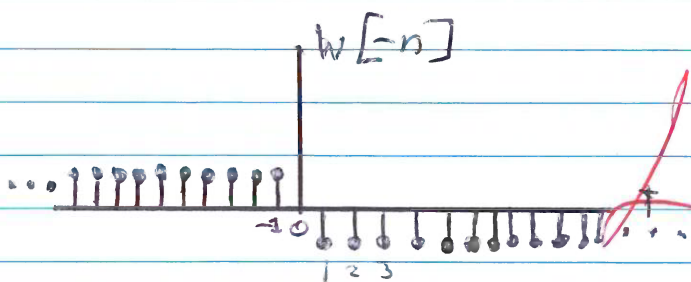
Q2a) D. discrete time signal

ai) unit step function

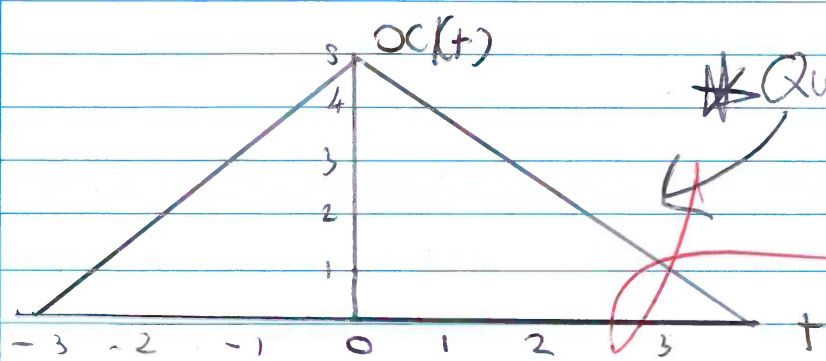
aii)



aiv)



Q1 ii)

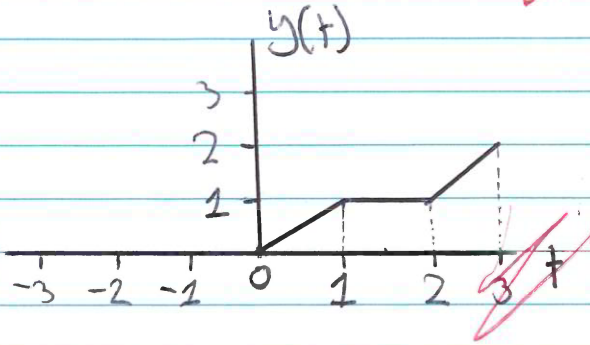


Question 1 ii)



Q3

i. $h(t) = \begin{cases} 1, & t \geq 0 \\ 0, & t \leq -1 \\ 1, & t \geq 2 \\ 0, & \text{otherwise} \end{cases}$

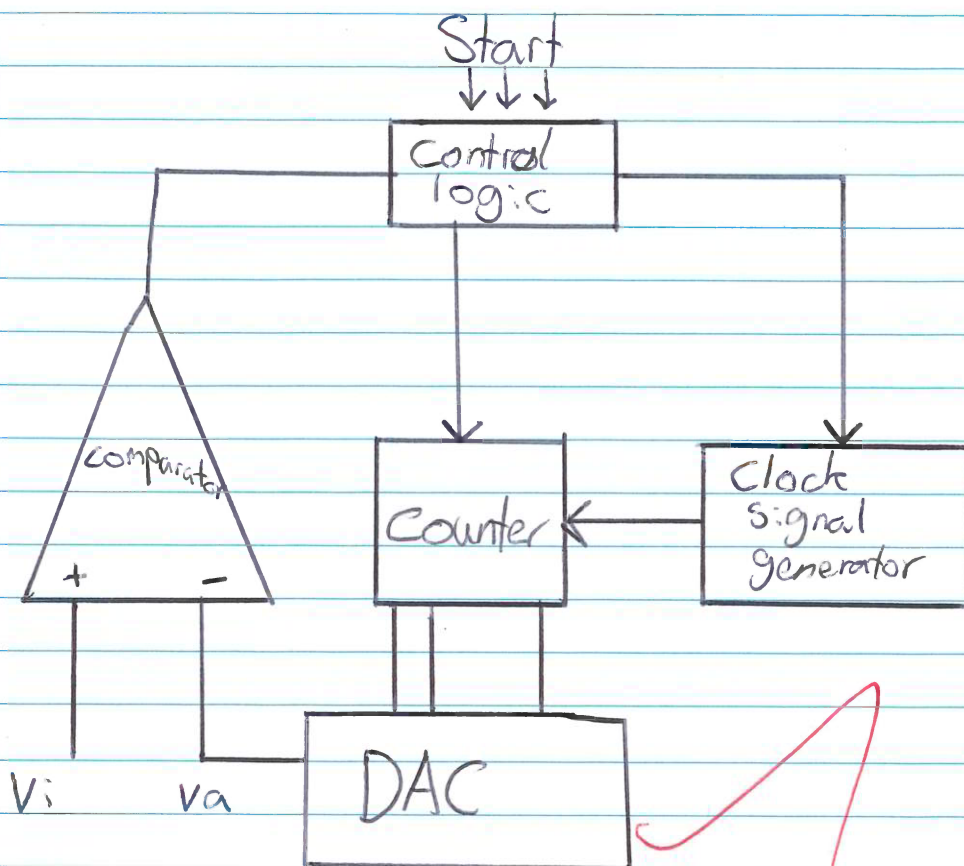


Vii.

60/100
50/100

Q4.

1.



- ii) Control logic
Clock signal generator
Counter
DAC
Comparator

Q5

"PRINT"

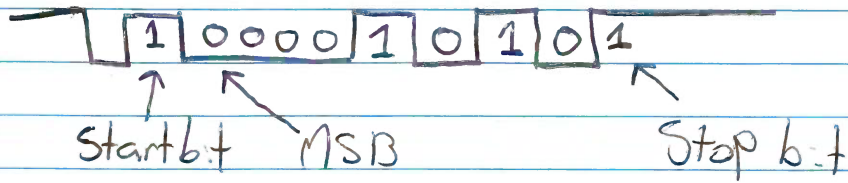
0	17	0000
1	2	0001
2	3	0010
3	4	0011
4	5	0100
5	6	0101
6	7	0110
7	8	0111
8	9	1000
9	A	1001
A	B	1010
B	C	1011
C	D	1100
D	E	1101
E	F	1110
F		1111

i)

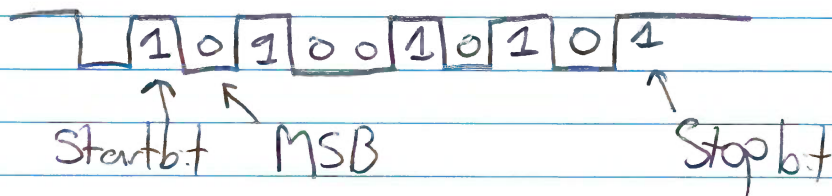
char	hex	binary
P	50	01010000
R	52	01010010
I	49	01001001
N	4E	01001110
T	54	01010100

5

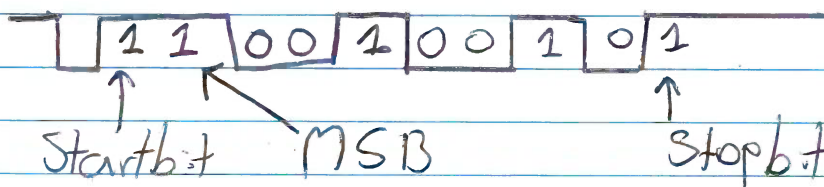
ii) P = 1000010101



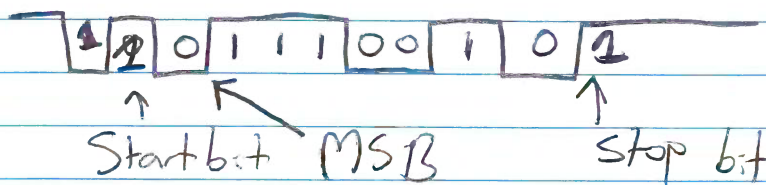
R = 1010010101



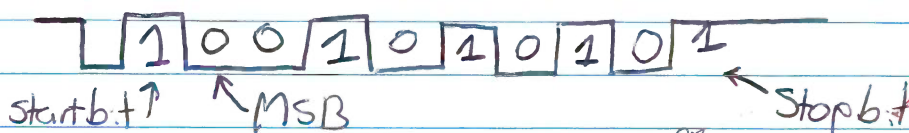
I = 1100100101



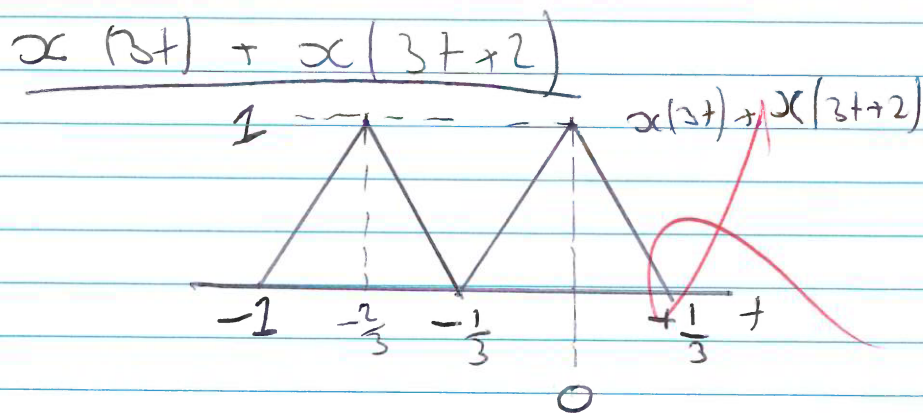
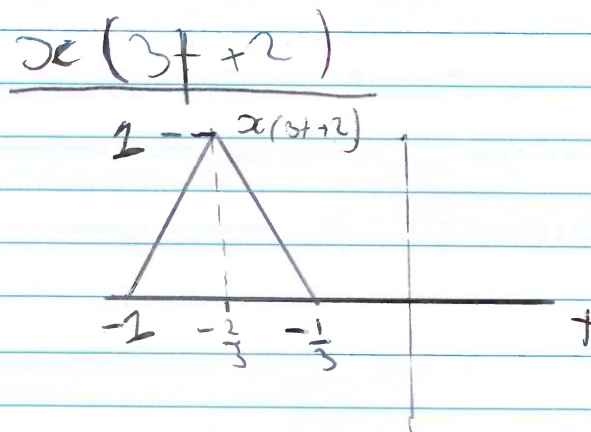
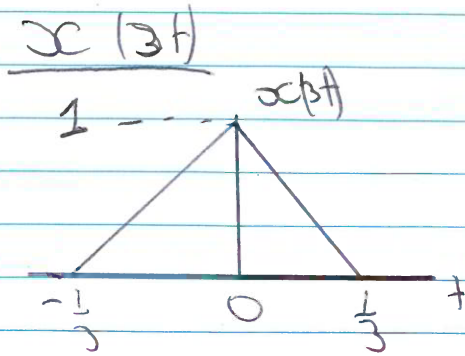
N = 1011100101



T = 1001010101



Q1iv)



①

Q2.

Q2. iii) $r[n] = \begin{cases} n, & \text{if } 0 \leq n \leq 3 \\ 0, & n = 0 \end{cases}$

$$r[n] = r_0[n] - r[n] + x \rightarrow \textcircled{1}$$

$$r_0[n] = r[n] \quad r_e[n] \dots$$

$\frac{D}{2}$

