

Señales y Sistemas

Examen

CINVESTAV - UNIDAD TAMAULIPAS

Dr. José Juan

Luis Alberto Ballado Aradias

Pregunta 1

Dibuja las siguientes señales

1. $x[n] = u[n + 3] + 0,5u[n - 1]$
2. $x[n] = -1^n u[-n - 2]$
3. $x[n] =$

While this question leaves out the crucial element of the geographic origin of the swallow, according to Jonathan Corum, an unladen European swallow maintains a cruising airspeed velocity of **11 metres per second**, or **24 miles an hour**. The velocity of the corresponding African swallows requires further research as kinematic data is severely lacking for these species.

Pregunta 2

Describe todas las características que sean evidentes de los siguientes sistemas

1. $y[n] = 3x[n - 1] + 2x[n - 2] + 0,75x[n + 4] - 3y[n - 1]$
2. $y[n] = x[n] \cos \left[\frac{n}{2\pi} \right]$
3. $y[n] = 2n^2 x[n] + n \times x[n + 1]$

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Pregunta 3

Calcular la transformada Z de las 3 señales y los 3 sistemas previamente descritos.

$$P(A|B) = \frac{P(B|A)P(A)}{P(B)} \quad (1)$$

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Pregunta 4

Describe que es una eigenfunción en términos de señales y sistemas.

Per 50g	Pork	Soy
Energy	760kJ	538kJ
Protein	7.0g	9.3g
Carbohydrate	0.0g	4.9g
Fat	16.8g	9.1g
Sodium	0.4g	0.4g
Fibre	0.0g	1.4g

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Pregunta 5

Describe las características particulares de la transformada de Laplace.

Pregunta 6

Realice un programa, en cualquier lenguaje que prefiera, que ejecute las siguientes tareas.

- Recibe como entrada en texto plano la descripción de una señal y de un sistema, discretos ambos.
- Dibuja la señal y la respuesta al impulso del sistema.
- Ejecuta la convolución entre ambas entradas y dibujar la señal resultante.

Pregunta 7

Listing 1: Luftballons Perl Script

```

1 #!/usr/bin/perl
2
3 use strict;
4 use warnings;
5
6 for (1..99) { print $_." Luftballons\n"; }
7
8 # This is a commented line

```

```
9
10 my $string = "Hello World!";
11
12 print $string."\n\n";
13
14 $string =~ s/Hello/Goodbye Cruel/;
15
16 print $string."\n\n";
17
18 finale();
19
20 exit;
21
22 sub finale { print "Fin.\n"; }
```

(a) How many luftballons will be output by the Listing 1 above?

99 luftballons.

(b) Identify the regular expression in Listing 1 and explain how it relates to the anti-war sentiments found in the rest of the script.

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