



# Universidad Autónoma de Coahuila

## Facultad de Ingeniería Mecánica y Eléctrica

### Unidad Torreón

Subject	Digital control	Group	9A
Degree	Electrical engineering	Due for	04/10/2016
Exam / Homework	Exam 1	Registration #	<b>12127844</b>
Professor's name	Dr. Suresh Kumar Gadi	Marks Obtained	____ / 10
Student's name	<b>JUAN MIGUEL BARRIENTOS GARCIA</b>		

## Instructions

1. In the calculations, the student should maintain at least a precision of 3 decimal places with a correct rounding.  
(20% of the marks obtained will be reduced)

## Questions

1. Find the Z-transform of the function  $u(k) = \{5, 4, 9, 9, 7, 4, 9, 8, 3, 7, 0, 0, 0\}$ . (2 points)
2. Apply Z-transform to the following equation. (2 points)

$$y(k) = 4x(k) - x(k-1) - \frac{1}{5}y(k-1)$$

3. Find the inverse Z-transform of the following function. (3 points)

$$F(z) = \frac{7}{1 - z^{-1}}$$

4. Draw block diagram for the following transfer function. (3 points)

$$\frac{y(z)}{x(z)} = \frac{z^2 + 9z + 2}{4z^2 + 6z + 4}$$



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### Unidad Torreón

Subject	Digital control	Group	9A
Degree	Electrical engineering	Due for	04/10/2016
Exam / Homework	Exam 1	Registration #	<b>12132791</b>
Professor's name	Dr. Suresh Kumar Gadi	Marks Obtained	____ / 10
Student's name	<b>ISRAEL GONZALEZ</b>		

## Instructions

1. In the calculations, the student should maintain at least a precision of 3 decimal places with a correct rounding.  
(20% of the marks obtained will be reduced)

## Questions

1. Find the Z-transform of the function  $u(k) = \{4, 9, 7, 2, 3, 4, 4, 5, 2, 7, 0, 0, 0\}$ . (2 points)
2. Apply Z-transform to the following equation. (2 points)

$$y(k) = 8x(k) - x(k-1) - \frac{1}{5}y(k-1)$$

3. Find the inverse Z-transform of the following function. (3 points)

$$F(z) = \frac{7}{1 - z^{-1}}$$

4. Draw block diagram for the following transfer function. (3 points)

$$\frac{y(z)}{x(z)} = \frac{z^2 + 6z + 4}{5z^2 + 6z + 6}$$



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### Unidad Torreón

Subject	Digital control	Group	9A
Degree	Electrical engineering	Due for	04/10/2016
Exam / Homework	Exam 1	Registration #	<b>10062268</b>
Professor's name	Dr. Suresh Kumar Gadi	Marks Obtained	____ / 10
Student's name	<b>JULIO ALEJANDRO MARIN GARCIA</b>		

## Instructions

1. In the calculations, the student should maintain at least a precision of 3 decimal places with a correct rounding.  
(20% of the marks obtained will be reduced)

## Questions

1. Find the Z-transform of the function  $u(k) = \{3, 6, 6, 7, 2, 5, 2, 9, 9, 2, 0, 0, 0\}$ . (2 points)
2. Apply Z-transform to the following equation. (2 points)

$$y(k) = 7x(k) - x(k-1) - \frac{1}{9}y(k-1)$$

3. Find the inverse Z-transform of the following function. (3 points)

$$F(z) = \frac{2}{1 - z^{-1}}$$

4. Draw block diagram for the following transfer function. (3 points)

$$\frac{y(z)}{x(z)} = \frac{z^2 + 9z + 7}{7z^2 + 3z + 9}$$



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### Unidad Torreón

Subject	Digital control	Group	9A
Degree	Electrical engineering	Due for	04/10/2016
Exam / Homework	Exam 1	Registration #	<b>98017052</b>
Professor's name	Dr. Suresh Kumar Gadi	Marks Obtained	____ / 10
Student's name	<b>LUIZ EDUARDO</b>		

## Instructions

1. In the calculations, the student should maintain at least a precision of 3 decimal places with a correct rounding.  
(20% of the marks obtained will be reduced)

## Questions

1. Find the Z-transform of the function  $u(k) = \{9, 6, 6, 9, 7, 6, 8, 6, 5, 3, 0, 0, 0\}$ . (2 points)
2. Apply Z-transform to the following equation. (2 points)

$$y(k) = 8x(k) - x(k-1) - \frac{1}{6}y(k-1)$$

3. Find the inverse Z-transform of the following function. (3 points)

$$F(z) = \frac{3}{1 - z^{-1}}$$

4. Draw block diagram for the following transfer function. (3 points)

$$\frac{y(z)}{x(z)} = \frac{z^2 + 9z + 3}{4z^2 + 3z + 5}$$



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### Unidad Torreón

Subject	Digital control	Group	9A
Degree	Electrical engineering	Due for	04/10/2016
Exam / Homework	Exam 1	Registration #	<b>12125213</b>
Professor's name	Dr. Suresh Kumar Gadi	Marks Obtained	____ / 10
Student's name	<b>EMMANUEL ALEJANDRO</b>		

## Instructions

1. In the calculations, the student should maintain at least a precision of 3 decimal places with a correct rounding.  
(20% of the marks obtained will be reduced)

## Questions

1. Find the Z-transform of the function  $u(k) = \{4, 8, 7, 9, 2, 6, 9, 7, 7, 7, 0, 0, 0\}$ . (2 points)
2. Apply Z-transform to the following equation. (2 points)

$$y(k) = 9x(k) - x(k-1) - \frac{1}{2}y(k-1)$$

3. Find the inverse Z-transform of the following function. (3 points)

$$F(z) = \frac{7}{1 - z^{-1}}$$

4. Draw block diagram for the following transfer function. (3 points)

$$\frac{y(z)}{x(z)} = \frac{z^2 + 4z + 7}{3z^2 + 6z + 9}$$



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### Unidad Torreón

Subject	Digital control	Group	9A
Degree	Electrical engineering	Due for	04/10/2016
Exam / Homework	Exam 1	Registration #	<b>12146394</b>
Professor's name	Dr. Suresh Kumar Gadi	Marks Obtained	____ / 10
Student's name	<b>JOSELY ROSALES</b>		

## Instructions

1. In the calculations, the student should maintain at least a precision of 3 decimal places with a correct rounding.  
(20% of the marks obtained will be reduced)

## Questions

1. Find the Z-transform of the function  $u(k) = \{8, 8, 6, 5, 2, 2, 4, 2, 8, 2, 0, 0, 0\}$ . (2 points)
2. Apply Z-transform to the following equation. (2 points)

$$y(k) = 7x(k) - x(k-1) - \frac{1}{7}y(k-1)$$

3. Find the inverse Z-transform of the following function. (3 points)

$$F(z) = \frac{2}{1 - z^{-1}}$$

4. Draw block diagram for the following transfer function. (3 points)

$$\frac{y(z)}{x(z)} = \frac{z^2 + 5z + 4}{7z^2 + 5z + 2}$$



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### Unidad Torreón

Subject	Digital control	Group	9A
Degree	Electrical engineering	Due for	04/10/2016
Exam / Homework	Exam 1	Registration #	<b>12146385</b>
Professor's name	Dr. Suresh Kumar Gadi	Marks Obtained	____ / 10
Student's name	<b>RODRIGUEZ PEREZ RODOLFO</b>		

## Instructions

1. In the calculations, the student should maintain at least a precision of 3 decimal places with a correct rounding.  
(20% of the marks obtained will be reduced)

## Questions

1. Find the Z-transform of the function  $u(k) = \{6, 7, 2, 5, 8, 8, 4, 9, 4, 4, 0, 0, 0\}$ . (2 points)
2. Apply Z-transform to the following equation. (2 points)

$$y(k) = 3x(k) - x(k-1) - \frac{1}{6}y(k-1)$$

3. Find the inverse Z-transform of the following function. (3 points)

$$F(z) = \frac{4}{1 - z^{-1}}$$

4. Draw block diagram for the following transfer function. (3 points)

$$\frac{y(z)}{x(z)} = \frac{z^2 + 7z + 8}{3z^2 + 3z + 5}$$



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### Unidad Torreón

Subject	Digital control	Group	9A
Degree	Electrical engineering	Due for	04/10/2016
Exam / Homework	Exam 1	Registration #	<b>10056986</b>
Professor's name	Dr. Suresh Kumar Gadi	Marks Obtained	____ / 10
Student's name	<b>ARTURO CORDERO ROBLES</b>		

## Instructions

1. In the calculations, the student should maintain at least a precision of 3 decimal places with a correct rounding. (20% of the marks obtained will be reduced)

## Questions

1. Find the Z-transform of the function  $u(k) = \{3, 3, 4, 7, 9, 6, 8, 9, 2, 3, 0, 0, 0\}$ . (2 points)
2. Apply Z-transform to the following equation. (2 points)

$$y(k) = 4x(k) - x(k-1) - \frac{1}{8}y(k-1)$$

3. Find the inverse Z-transform of the following function. (3 points)

$$F(z) = \frac{3}{1 - z^{-1}}$$

4. Draw block diagram for the following transfer function. (3 points)

$$\frac{y(z)}{x(z)} = \frac{z^2 + 3z + 5}{7z^2 + 6z + 9}$$





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### Unidad Torreón

Subject	Digital control	Group	9A
Degree	Electrical engineering	Due for	04/10/2016
Exam / Homework	Exam 1	Registration #	<b>12157333</b>
Professor's name	Dr. Suresh Kumar Gadi	Marks Obtained	____ / 10
Student's name	<b>EDGAR RICARDO CHAIREZ VILLARRIAL</b>		

## Instructions

1. In the calculations, the student should maintain at least a precision of 3 decimal places with a correct rounding.  
(20% of the marks obtained will be reduced)

## Questions

1. Find the Z-transform of the function  $u(k) = \{8, 9, 6, 3, 3, 5, 8, 6, 6, 2, 0, 0, 0\}$ . (2 points)
2. Apply Z-transform to the following equation. (2 points)

$$y(k) = 2x(k) - x(k-1) - \frac{1}{7}y(k-1)$$

3. Find the inverse Z-transform of the following function. (3 points)

$$F(z) = \frac{2}{1 - z^{-1}}$$

4. Draw block diagram for the following transfer function. (3 points)

$$\frac{y(z)}{x(z)} = \frac{z^2 + 2z + 2}{8z^2 + 2z + 4}$$



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### Unidad Torreón

Subject	Digital control	Group	9A
Degree	Electrical engineering	Due for	04/10/2016
Exam / Homework	Exam 1	Registration #	12142724
Professor's name	Dr. Suresh Kumar Gadi	Marks Obtained	____ / 10
Student's name	<b>ALLISON DANIELA MACIAS HERNANDEZ</b>		

## Instructions

1. In the calculations, the student should maintain at least a precision of 3 decimal places with a correct rounding. (20% of the marks obtained will be reduced)

## Questions

1. Find the Z-transform of the function  $u(k) = \{7, 9, 3, 3, 4, 8, 2, 6, 7, 8, 0, 0, 0\}$ . (2 points)
2. Apply Z-transform to the following equation. (2 points)

$$y(k) = 8x(k) - x(k-1) - \frac{1}{5}y(k-1)$$

3. Find the inverse Z-transform of the following function. (3 points)

$$F(z) = \frac{8}{1 - z^{-1}}$$

4. Draw block diagram for the following transfer function. (3 points)

$$\frac{y(z)}{x(z)} = \frac{z^2 + 2z + 2}{9z^2 + 3z + 8}$$



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### Unidad Torreón

Subject	Digital control	Group	9A
Degree	Electrical engineering	Due for	04/10/2016
Exam / Homework	Exam 1	Registration #	<b>10068360</b>
Professor's name	Dr. Suresh Kumar Gadi	Marks Obtained	____ / 10
Student's name	<b>KIM EDUARDO SANCHEZ REYES</b>		

## Instructions

1. In the calculations, the student should maintain at least a precision of 3 decimal places with a correct rounding. (20% of the marks obtained will be reduced)

## Questions

1. Find the Z-transform of the function  $u(k) = \{4, 8, 3, 7, 3, 7, 8, 4, 5, 3, 0, 0, 0\}$ . (2 points)
2. Apply Z-transform to the following equation. (2 points)

$$y(k) = 3x(k) - x(k-1) - \frac{1}{6}y(k-1)$$

3. Find the inverse Z-transform of the following function. (3 points)

$$F(z) = \frac{3}{1 - z^{-1}}$$

4. Draw block diagram for the following transfer function. (3 points)

$$\frac{y(z)}{x(z)} = \frac{z^2 + 5z + 8}{8z^2 + 2z + 2}$$



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### Unidad Torreón

Subject	Digital control	Group	9A
Degree	Electrical engineering	Due for	04/10/2016
Exam / Homework	Exam 1	Registration #	<b>11288180</b>
Professor's name	Dr. Suresh Kumar Gadi	Marks Obtained	____ / 10
Student's name	<b>JORGE ANTONIO MOLINA RAMIREZ</b>		

## Instructions

1. In the calculations, the student should maintain at least a precision of 3 decimal places with a correct rounding.  
(20% of the marks obtained will be reduced)

## Questions

1. Find the Z-transform of the function  $u(k) = \{2, 7, 3, 6, 8, 3, 3, 6, 2, 3, 0, 0, 0\}$ . (2 points)
2. Apply Z-transform to the following equation. (2 points)

$$y(k) = 3x(k) - x(k-1) - \frac{1}{3}y(k-1)$$

3. Find the inverse Z-transform of the following function. (3 points)

$$F(z) = \frac{3}{1 - z^{-1}}$$

4. Draw block diagram for the following transfer function. (3 points)

$$\frac{y(z)}{x(z)} = \frac{z^2 + 4z + 7}{5z^2 + 8z + 7}$$



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### Unidad Torreón

Subject	Digital control	Group	9A
Degree	Electrical engineering	Due for	04/10/2016
Exam / Homework	Exam 1	Registration #	<b>10053330</b>
Professor's name	Dr. Suresh Kumar Gadi	Marks Obtained	____ / 10
Student's name	<b>JOSE FERNANDO AGUILAR COLORADO</b>		

## Instructions

1. In the calculations, the student should maintain at least a precision of 3 decimal places with a correct rounding.  
(20% of the marks obtained will be reduced)

## Questions

1. Find the Z-transform of the function  $u(k) = \{7, 4, 7, 4, 2, 2, 8, 6, 6, 4, 0, 0, 0\}$ . (2 points)
2. Apply Z-transform to the following equation. (2 points)

$$y(k) = 4x(k) - x(k-1) - \frac{1}{6}y(k-1)$$

3. Find the inverse Z-transform of the following function. (3 points)

$$F(z) = \frac{4}{1 - z^{-1}}$$

4. Draw block diagram for the following transfer function. (3 points)

$$\frac{y(z)}{x(z)} = \frac{z^2 + 5z + 7}{4z^2 + 6z + 6}$$



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### Unidad Torreón

Subject	Digital control	Group	9A
Degree	Electrical engineering	Due for	04/10/2016
Exam / Homework	Exam 1	Registration #	<b>10073388</b>
Professor's name	Dr. Suresh Kumar Gadi	Marks Obtained	____ / 10
Student's name	<b>AXEL JAVIER RODRIGUEZ MARIN</b>		

## Instructions

1. In the calculations, the student should maintain at least a precision of 3 decimal places with a correct rounding.  
(20% of the marks obtained will be reduced)

## Questions

1. Find the Z-transform of the function  $u(k) = \{7, 9, 9, 2, 7, 4, 6, 4, 4, 8, 0, 0, 0\}$ . (2 points)
2. Apply Z-transform to the following equation. (2 points)

$$y(k) = 8x(k) - x(k-1) - \frac{1}{5}y(k-1)$$

3. Find the inverse Z-transform of the following function. (3 points)

$$F(z) = \frac{8}{1 - z^{-1}}$$

4. Draw block diagram for the following transfer function. (3 points)

$$\frac{y(z)}{x(z)} = \frac{z^2 + 4z + 7}{3z^2 + 9z + 9}$$



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## Facultad de Ingeniería Mecánica y Eléctrica

### Unidad Torreón

Subject	Digital control	Group	9A
Degree	Electrical engineering	Due for	04/10/2016
Exam / Homework	Exam 1	Registration #	<b>6052185</b>
Professor's name	Dr. Suresh Kumar Gadi	Marks Obtained	____ / 10
Student's name	<b>ROGELIO CASTILLO REYES</b>		

## Instructions

1. In the calculations, the student should maintain at least a precision of 3 decimal places with a correct rounding.  
(20% of the marks obtained will be reduced)

## Questions

1. Find the Z-transform of the function  $u(k) = \{4, 4, 7, 3, 5, 7, 5, 3, 5, 7, 0, 0, 0\}$ . (2 points)
2. Apply Z-transform to the following equation. (2 points)

$$y(k) = 2x(k) - x(k-1) - \frac{1}{4}y(k-1)$$

3. Find the inverse Z-transform of the following function. (3 points)

$$F(z) = \frac{7}{1 - z^{-1}}$$

4. Draw block diagram for the following transfer function. (3 points)

$$\frac{y(z)}{x(z)} = \frac{z^2 + 9z + 5}{6z^2 + 9z + 8}$$