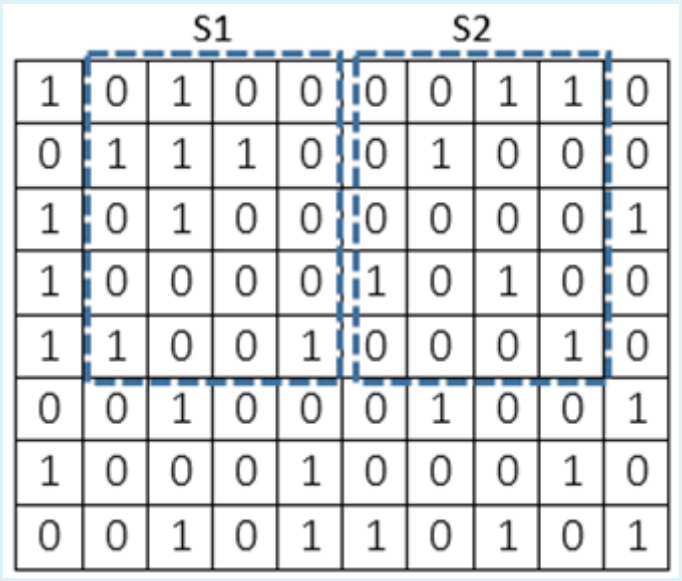
| | |
|---|---|
| **Started on** | Tuesday, September 20, 2022, 12:11 AM |
| **State** | Finished |
| **Completed on** | Tuesday, September 20, 2022, 12:28 AM |
| **Time taken** | 16 mins 53 secs |
| **Grade** | **28.50** out of 31.00 (**92**%) |

Question **1**

Incorrect

0.00 points out of 2.00

- Given two image subsets **S1, S2** and **V = {1}**. Select the correct option(s) from the following.




Select one or more:

- [ ] The two subsets are 4-adjacent
- [ ] The two subsets are m-adjacent
- [ ] The two subsets are 8-adjacent
- [x] None of the above options ✖

Your answer is incorrect.

The correct answers are: The two subsets are 8-adjacent, The two subsets are m-adjacent

Question **2**

Correct

1.00 points out of 1.00

- Which of these arithmetic operations are used for image noise reduction?

Select one:

- (•) Addition ✔
- ( ) None of these
- ( ) Multiplication
- ( ) Division
- ( ) Subtraction

Your answer is correct.

The correct answer is: Addition

Question **3**

Correct

1.00 points out of 1.00

- A_____ phenomenon defines the perseverance of a large, sudden variation in the intensity level by a human visual system.

Select one:

- Contrast discrimination
- Illumination reflectance
- Simultaneous contrast
- Brightness adaptation ✔

Your answer is correct.

The correct answer is: Brightness adaptation

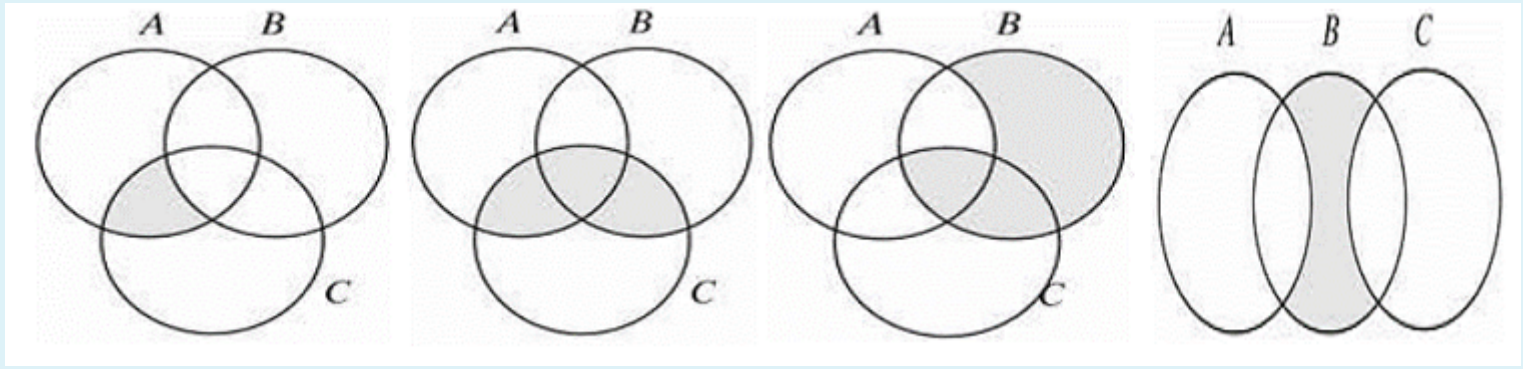
Question **4**

Correct

3.00 points out of 3.00

- Select the correct Venn diagram for the following expression:

$$B - [(A \cap B) - (A \cap B \cap C)]$$




**(A)** **(B)** **(C)** **(D)**

- Enter the correct image name (A, B, C, or D) in the following text box without any extra space

C ✔

Question **5**

Correct

2.00 points out of 2.00

- Find the number of bits required to store a 256x256 image with 32 gray levels.
- Fill your answer as a number without unnecessary space in it, like: 1200305

Answer: 327680 ✔

The correct answer is: 327680

Question **6**

Partially correct

0.50 points out of 1.00

- Which of the following is a non-linear operation(s)?

Select one or more:

- [x] Image division ✔
- [ ] Image multiplication
- [ ] Image summation
- [ ] Image subtraction

Your answer is partially correct.

You have correctly selected 1.

The correct answers are: Image multiplication, Image division

Question **7**

Correct

1.00 points out of 1.00

- Humans can identify the color and resolve fine details of an object viewed using ***rod*** photoreceptor cells.

Select one:

- True
- False ✔

The correct answer is 'False'.

Question **8**

Correct

3.00 points out of 3.00

- How does the below image look if the pixel intensity is scaled in the range **[0,100]** ?
- Fill the scaled image table by **Rounding-off** the pixel values to the **nearest integer**.

**Given image**

| | | |
|---|---|---|
| 15 | 14 | 236 |
| 21 | 1 | 22 |
| 22 | 32 | 3 |

**Scaled image**

| | | |
|---|---|---|
| 6 ✔ | 6 ✔ | 100 ✔ |
| 9 ✔ | 0 ✔ | 9 ✔ |
| 9 ✔ | 13 ✔ | 1 ✔ |

Question **9**

Correct

1.00 points out of 1.00

- A ***blind spot*** in the retina has____.

Select one:

- Both Rod and Cone photoreceptor cells
- Absence of Rod and Cone photoreceptor cells ✔
- Rod photoreceptor cells
- Cone photoreceptor cells

Your answer is correct.

The correct answer is: Absence of Rod and Cone photoreceptor cells

Question **10**

Correct

1.00 points out of 1.00

- In_____ phenomena the eye fills in nonexisting details or wrongly perceives the geometrical properties of objects.

Select one:

- Brightness adaptation
- Simultaneous contrast
- Contrast discrimination
- Optical illusions ✔

Your answer is correct.

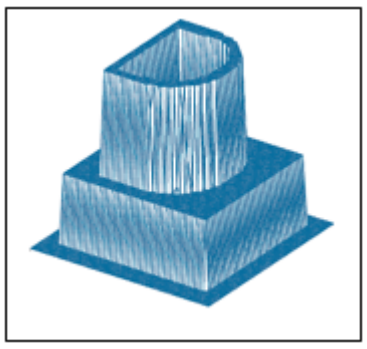
The correct answer is: Optical illusions

Question **11**

Correct

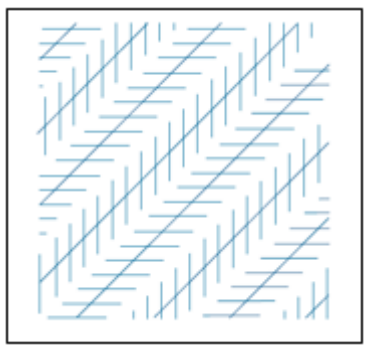
2.00 points out of 2.00

- Match the following image representations.

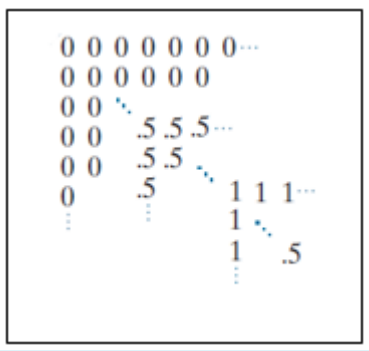


Intensity display ✔

Computer display ✔



Optical illusion ✔

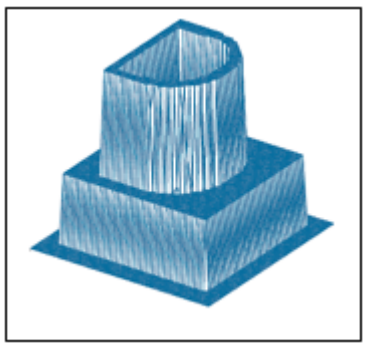



Computer processing ✔

Your answer is correct.

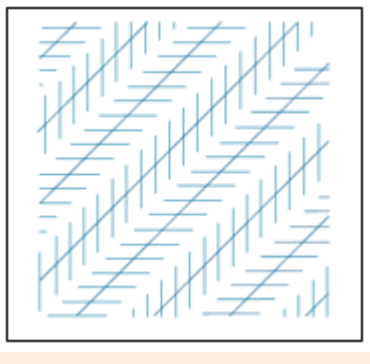
The correct answer is:

- Match the following image representations.

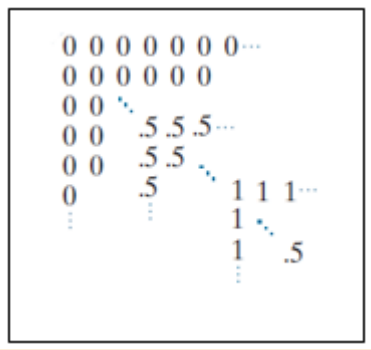


[Intensity display]

[Computer display]



[Optical illusion]



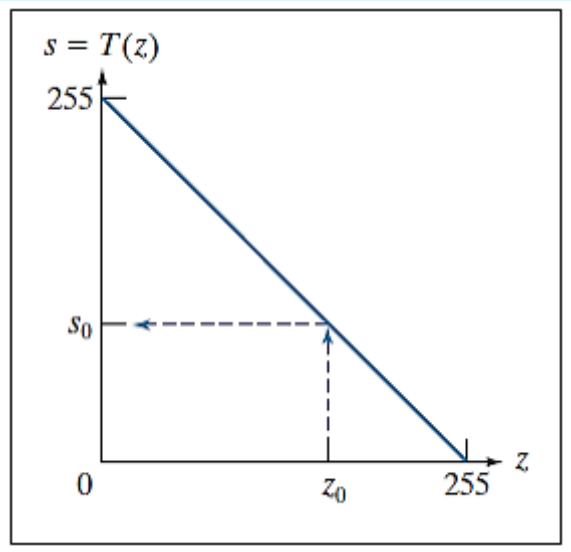
[Computer processing]

Question **12**

Correct

1.00 points out of 1.00

- Select the type of the following image transformation function




Select one:

- Negative transform function ✔
- Identity transform function
- Exponential transform function
- None of these
- Log transform function

Your answer is correct.

The correct answer is: Negative transform function

Question **13**

Correct

1.00 points out of 1.00

- Which of the following is a mid-level image processing task?

Select one:

- Image segmentation ✔
- Scene understanding
- Image sharpening
- None of the above options
- Contrast enhancement

Your answer is correct.

The correct answer is: Image segmentation

Question **14**

Correct

1.00 points out of 1.00

- Which of the following is the property of ***monochromatic light*** ?

Select one:

- Brightness
- Radiance
- Intensity ✔
- Luminance

Your answer is correct.

The correct answer is: Intensity

Question **15**

Correct

1.00 points out of 1.00

- Which of the following is under the human visual band of the electromagnetic spectrum?

Select one:

- Infrared rays
- X-rays
- None of these ✔
- Ultraviolet rays

Your answer is correct.

The correct answer is: None of these

Question **16**

Correct

1.00 points out of 1.00

- What is the output of the elementwise product between the following two images?
- Fill the numbers in all the cells of the Resultant image without any unnecessary space.

**Image-1**

| | | |
|---|---|---|
| 2 | 4 | 5 |
| 6 | 1 | 3 |
| 9 | 2 | 2 |

**Image-2**

| | | |
|---|---|---|
| 6 | 7 | 5 |
| 3 | 3 | 3 |
| 3 | 7 | 7 |

**Resultant Image**

| | | |
|---|---|---|
| 12 ✔ | 28 ✔ | 25 ✔ |
| 18 ✔ | 3 ✔ | 9 ✔ |
| 27 ✔ | 14 ✔ | 14 ✔ |

Question **17**

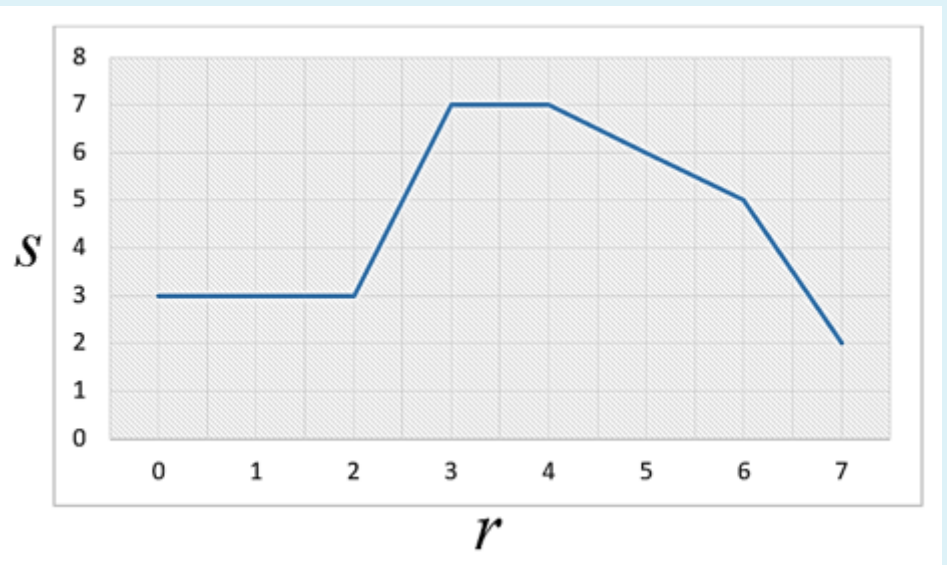
Correct

2.00 points out of 2.00

- What is the output of applying the image below to the transformation ***s=T(r)*** shown in the graph?
- Fill all the cells of the resultant image with proper values without any extra space.

**Given image** **Transformation function**

| | | |
|---|---|---|
| 5 | 4 | 6 |
| 1 | 0 | 2 |
| 2 | 3 | 3 |




**Resultant Image**

| | | |
|---|---|---|
| 6 ✔ | 7 ✔ | 5 ✔ |
| 3 ✔ | 3 ✔ | 3 ✔ |
| 3 ✔ | 7 ✔ | 7 ✔ |

Question **18**

Correct

1.00 points out of 1.00

- Select the components characterizing a 2-D image *f*(x,y).

Select one or more:

- [x] Reflectance ✔
- [ ] Opacity
- [ ] Transparency
- [x] Illumination ✔

Your answer is correct.

The correct answers are: Illumination, Reflectance

Question **19**

Correct

1.00 points out of 1.00

- Which of these is not an affine transformation?

Select one:

- (•) Intensity transform ✔
- ( ) None of the above options
- ( ) Scaling
- ( ) Shearing
- ( ) Reflection

Your answer is correct.

The correct answer is: Intensity transform

Question **20**

Correct

1.00 points out of 1.00

- Select the **TRUE** statement(s) from the following.

Select one or more:

- [ ] Sampling gives the color value (intensity) of pixels in an image
- [x] Quantization gives the color value (intensity) of pixels in an image ✔
- [x] Sampling gives the number of pixels in an image ✔
- [ ] Quantization gives the number of pixels in an image

Your answer is correct.

The correct answers are: Sampling gives the number of pixels in an image, Quantization gives the color value (intensity) of pixels in an image

Question **21**

Correct

3.00 points out of 3.00

- Given the image and the set V of intensity values that define the adjacency.

| | | | | | |
|---|---|---|---|---|---|
| 10 | 200 | 255 | 210 | 21 | 0 |
| 3 | 27 | 45 | **q** | 89 | 255 |
| 2 | 6 | 63 | 66 | 78 | 85 |
| **p** | 96 | 98 | 92 | 5 | 6 |
| 78 | 95 | 45 | 65 | 35 | 85 |

**V** = { **x**: x is the pixel intensity such that **50<x<100**}

- For the **Start pixel p** and **End pixel q**, find the **shortest length** of the following:

8-path 3 ✔

m-path 5 ✔

4-path 5 ✔

Your answer is correct.

The correct answer is: 8-path → 3, m-path → 5, 4-path → 5

◄ Assignment-3 (Fourier Transform implementation)

Jump to...

Quiz-2 ►