

## MultipleChoiceQuestion

1 Name the filters. c19cd52c-37fd-4e8f-91dc-e63729c6744a

Shovel False None

Sovel False None

Sobel True None

Prewit False None

Prewitt False None

Previt False None

Roberts False None

Robert False None

Row-bert False None

## MultipleChoiceQuestion

2 Name the filters. ef034d9f-b231-477c-a174-79f2a37ec320

Shovel False None

Sovel False None

Sobel False None

Prewit False None

Prewitt True None

Previt False None

Roberts False None

Robert False None

Row-bert False None

## MultipleChoiceQuestion

3 Name the filters. ad2ae678-11d1-4abe-8b81-3176e8be821e

Shovel False None

Sovel False None

Sobel False None

Prewit False None

Prewitt False None

Previt False None

Roberts True None

**Robert False None**

**Row-bert False None**

### **MultipleChoiceQuestion**

**4 Which components of the gradient do these correlational filter masks compute? 0be131ab-d8ac-4857-ae1-daf22d5c337f**

**magnitude and direction of the gradient False None**

**gradient in 45 and 135 degrees False None**

**vertical and horizontal gradient False None**

**magnitude and orientation of the gradient False None**

**horizontal and vertical gradient True None**

**gradient in 45 and -45 degrees False None**

### **MultipleChoiceQuestion**

**5 How many steps does the Canny edge detector have? None**

**0 False None**

**1 False None**

**2 False None**

**3 False None**

**4 False None**

**5 False None**

**6 True None**

**7 False None**

**8 False None**

**9 False None**

**10 False None**

### **MultipleChoiceQuestion**

**6 The last (6th) step in Canny edge detection is... None**

**Gradient computation in perpendicular directions False None**

**Gradient computation in terms of magnitude and orientation False None**

**Double thresholding False None**

**Noise removal False None**

**Non-maxima suppression False None**

**Hysteresits True None**

### **MultipleChoiceQuestion**

7 The second to last (5th) step in Canny edge detection is... None

Gradient computation in perpendicular directions False None

Gradient computation in terms of magnitude and orientation False None

Double thresholding True None

Noise removal False None

Non-maxima suppression False None

Hysteresits False None

### **MultipleChoiceQuestion**

8 The fourth step in Canny edge detection is... None

Gradient computation in perpendicular directions False None

Gradient computation in terms of magnitude and orientation False None

Double thresholding False None

Noise removal False None

Non-maxima suppression True None

Hysteresits False None

### **MultipleChoiceQuestion**

9 The third step in Canny edge detection is... None

Gradient computation in perpendicular directions False None

Gradient computation in terms of magnitude and orientation True None

Double thresholding False None

Noise removal False None

Non-maxima suppression False None

Hysteresits False None

### **MultipleChoiceQuestion**

10 The second step in Canny edge detection is... None

Gradient computation in perpendicular directions True None

Gradient computation in terms of magnitude and orientation False None

Double thresholding False None

Noise removal False None

Non-maxima suppression False None

**Hysteresits False None**

### **MultipleChoiceQuestion**

**11 The first step in Canny edge detection is... None**

**Gradient computation in perpendicular directions False None**

**Gradient computation in terms of magnitude and orientation False None**

**Double thresholding False None**

**Noise removal True None**

**Non-maxima suppression False None**

**Hysteresits False None**

### **MultipleChoiceQuestion**

**12 What noise removal technique should we use when applying Canny edge detection? (first step) None**

**Median filter False None**

**Mean filter False None**

**Correlation using a box filter False None**

**Gaussian filtering True None**

**Non-maxima suppression False None**

### **MultipleChoiceQuestion**

**13 Based on the previous question, what filter or filters could we use in the first step? e58c5bd8-d0d7-4f33-95e4-fa587f9172ac**

**a True None**

**b True None**

**c False None**

**d True None**

**e False None**

**f False None**

### **MultipleChoiceQuestion**

**14 Apply the Gaussian filter in the figure to the highlighted pixel. [RESULTS IN NEXT QUESTION] 04c2f1fa-5276-4e0c-afcf-84d6ad3528a8**

**0 False None**

**1 False None**

**2 False None**

**3 False None**

4 False None

5 True None

6 False None

7 False None

8 False None

9 False None

10 False None

### MultipleChoiceQuestion

15 [RESULT] 6cb38c61-a567-41ea-8079-906433eb41d1

5 True None

0 False None

### MultipleChoiceQuestion

16 Apply the Gaussian filter in the figure to the highlighted pixel. [RESULTS IN NEXT QUESTION]  
d52938cf-acba-4b98-af77-c225f30b6928

1.135 False None

1.615 False None

2.325 False None

2.625 True None

3.325 False None

3.652 False None

### MultipleChoiceQuestion

17 [RESULT] 52c48d3c-004f-440f-a958-e04d2d0b0aae

2.625 True None

0 False None

### ClickMapQuestion

18 Assume that you have computed the gradients of an image and used them to calculate the gradient orientation and its magnitude. The results are shown in the image. Perform the non-maxima suppression of the Canny edge detector for the horizontal direction and select the elements that would be sent to zero in the image. [RESULTS IN NEXT QUESTION] 5c537ac6-a403-4846-8b88-1636c878004b

### ClickMapQuestion

19 Assume that you have computed the gradients of an image and used them to calculate the gradient orientation and its magnitude. The results are shown in the image. Perform the non-maxima suppression of the Canny edge detector for the horizontal direction and select the elements that would be sent to zero in the image. [RESULTS IN NEXT QUESTION] 4d80124b-85f0-4879-b169-39462d45f157

### **ClickMapQuestion**

**20 RESULTS c30e1b5f-b68b-4e77-aca6-199302369ade**

### **ClickMapQuestion**

**21 On paper, perform double thresholding with threshold values of 20 and 34. Provide your answers on Vevox for the high threshold only. 762212e4-021b-4d4b-aa63-7164b9a2a049**

### **ClickMapQuestion**

**22 RESULTS 4300b6b6-30ac-414f-873e-e8b869402b9f**

### **ClickMapQuestion**

**23 Perform ONE hysteresis step. da6e2337-5336-4a90-80ca-5b666e4cee89**

### **ClickMapQuestion**

**24 RESULTS 935228b4-51ea-42d0-b02e-b62712fe1d44**

### **ClickMapQuestion**

**25 Perform a SECOND hysteresis step. 57e13160-8fe7-475f-8e0c-cdd99ce2cef4**

### **ClickMapQuestion**

**26 RESULTS 737bee84-8dfb-4faf-980e-6a8d141bd188**

### **MultipleChoiceQuestion**

**27 Do we need to run a third hysteresis step? e5cee662-3939-45ed-b4f5-e397b242f225**

**no False None**

**it depends True None**

**yes True None**

### **ClickMapQuestion**

**28 RESULTS 1cf6875b-75f6-4a6d-b4db-868c17bfe10d**