Feedback — Homework 1

Help Center

You submitted this quiz on **Fri 3 Apr 2015 3:05 AM PDT**. You got a score of **8.00** out of **8.00**.

Question 1

Which of the followings are digital signals? Check all that apply.

Your Answer		Score	Explanation
☑ text messages received on a cellphone	✔	0.20	
☑ videos streamed from online sources	✔	0.20	
☑ sound tracks stored on a CD	✔	0.20	
☐ pencil drawing made on a piece of paper	✔	0.20	
☐ an x-ray film image	✔	0.20	
Total		1.00 / 1.00	

Question 2

Functional magnetic resonance imaging (fMRI) is a technology where volumetric scans of the brain are acquired while the subject is performing some cognitive tasks over time. Based on this description, what is the dimensionality of fMRI output signals?

Your Answer	Score	Explanation
○ 1D		
○ 2D		
○ 3D		

◉ 4D	✔	1.00
○ more information is needed to answer this question		
Total		1.00 / 1.00

Question 3

True or false: All digital images are visible, i.e., they are all captured with visible light.

Your Answer		Score	Explanation
○ true			
◉ false	✔	1.00	
Total		1.00 / 1.00	

Question 4

Digital videos are signals that are discrete in time.

Your Answer		Score	Explanation
◉ true	✔	1.00	
○ false			
Total		1.00 / 1.00	

Question 5

Which of the following are examples of electromagnetic (EM) waves? Check all that apply.

Your Answer	Score	Explanation

☑ microwave	✔	0.25
☐ ripples in a lake	✔	0.25
☐ sound wave	✔	0.25
☑ light from the sun	✔	0.25
Total		1.00 / 1.00

Question 6

True or false: Digital image processing is a subject distinctly different from computer vision.

Your Answer		Score	Explanation
○ true			
◉ false	✔	1.00	
Total		1.00 / 1.00	

Question 7

Approximately, how many different 100x100 binary digital images exist? How many 24bit-RGB color images of the same size exist? (Hint: for binary images each pixel can assume one of two values; for 24bit-RGB color images each pixel has three color channels and each color channel can assume one of 256 values.)

Your Answer		Score	Explanation
◉ 2^{10000} for binary images and $2^{24\times10000}$ for 24bit-RGB color images	✔	1.00	
○ 2^{100} for binary images and $2^{24\times100}$ for 24bit-RGB color images			
○ 100^2 for binary images and 100^{24} for 24bit-RGB color			

images	
10000^2 for binary images and 10000^{24} for 24bit-RGB color images	
infinitely many for both binary and 24bit-RGB color images	
Total	1.00 / 1.00

Question 8

Suppose your smart phone has a 10-megapixel camera (1 megapixel = 10^6 pixels). Without any form of compression, how big would a 24bit-RGB color image be? (Hint: 1 byte = 8 bits)

Your Answer		Score	Explanation
30 megabytes	✔	1.00	
10 megabytes			
300 kilobytes			
more information is needed to answer this question			
Total		1.00 / 1.00	