Practice example exam, January, 2022.

For each of the 7 lectures there are 3 MCQ questions + 1 Open question, yielding  $4 \times 7 = 28$  questions in total. There is one correct answer for each MCQ question. Mark the answer on the answer sheet (note the ordering of the A,B,C,D options). Closed book exam: No books, notes, phones, etc allowed. Good luck!

Consider these color pairs: RGB(1, 0, 0)-HSI(0, 1, 1); RGB(1, 1, 1)-HSI(0, 0, 1); RGB(0, 0, 0)-HSI(0, 0, 1); RGB(0, 0, 1)-HSI(0, 1, 1/3). How many pairs represents the same color?  C: 3 pairs  Question 3  Lecture 1  Histograms and $\Box$ A: Subtract 255 from x	□B: Red, Purple, Black □C: Red, Yellow, White □D: Yellow, Purple, Black □E: Yellow, Red, Black □E: Yellow, Red, Black □F: Red, Blue, Black □F: Red, Blue, Black □F: Red, Only 1 pair □B: 2 pairs □C: 3 pairs □C: 3 pairs □C: 3 pairs □C: 3 pairs □C: Multiply x by -1 and add (255*3) □C: Multiply x by -1 and add 255 □D: Subtract 128 from x □D: Subtract 128 from x	Question 1	Lecture 1	Histograms and color
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From the RGB cube, the color plane defined by fixing the coordinate R to 1 (ie: R=1) looks like:    D: Yellow, Purple, Black	r plane defined by fixing =1) looks like:  □E: Yellow, Red, Black □F: Red, Blue, Black □F: Red, Blue, Black □A: Only 1 pair  RGB(1, 0, 0)-HSI(0, 1, 1); RGB(0, 0, 0)-HSI(0, 1/3). How many pairs □C: 3 pairs  Lecture 1	· -	□ <b>B:</b> Red, Purple, Black	
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$\Box \mathbf{E} \text{: Yellow, Red, Black}$ $\Box \mathbf{F} \text{: Red, Blue, Black}$ $\Box \mathbf{G} \text{Uestion 2}$ $Lecture \ 1 \qquad Histograms \ and \ \Box \mathbf{A} \text{: Only 1 pair}$ $\Box \mathbf{A} \text{: Only 1 pair}$ $\Box \mathbf{B} \text{: 2 pairs}$ $\Box \mathbf{B} \text{: 2 pairs}$ $\Box \mathbf{C} \text{: 3 pairs}$	□E: Yellow, Red, Black □F: Red, Blue, Black  □A: Only 1 pair  □B: 2 pairs □C: 3 pairs  □C: 3 pairs  □C: 3 pairs  □C: Multiply x by -1 and add (255*3) □C: Multiply x by -1 and add 255 □D: Subtract 128 from x  □D: Subtract 128 from x		□ <b>D:</b> Yellow, Purple, Black	
Question 2Lecture 1Histograms and $\Box$ A: Only 1 pairConsider these color pairs: RGB(1, 0, 0)-HSI(0, 1, 1); RGB(1, 1, 1)-HSI(0, 0, 1); RGB(0, 0, 0)-HSI(0, 0, 1); RGB(0, 0, 1)-HSI(0, 1, 1/3). How many pairs represents the same color? $\Box$ B: 2 pairsQuestion 3Lecture 1Histograms and $\Box$ A: Subtract 255 from x	Lecture 1  A: Only 1 pair  RGB(1, 0, 0)-HSI(0, 1, 1); RGB(0, 0, 0)-HSI(0, 1/3). How many pairs  Lecture 1  A: Subtract 255 from x  C: Subtract 255 from x  B: Multiply x by -1 and add (255*3)  C: Multiply x by -1 and add 255  D: Subtract 128 from x  Lecture 1  Histograms and color  Histograms and color  Histograms and color  A: Subtract 255 from x  B: Multiply x by -1 and add 255  D: Subtract 128 from x		□ <b>E:</b> Yellow, Red, Black	
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$\Box$ <b>A:</b> Subtract 255 from x	□A: Subtract 255 from x    C   B   Multiply x by -1 and add (255*3)	(0, 1); RGB $(0, 0, 1)$ -HSI $(0, 1, 1/3)$ . How many pairs	$\Box \mathbf{C}$ : 3 pairs	
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	which operations do we nel to obtain an image   C: Multiply x by -1 and add 255   the pixel from the input   D: Subtract 128 from x    Lecture 1   Histograms and color		□ <b>A:</b> Subtract 255 from x	
	hel to obtain an image $\square$ C: Multiply x by -1 and add 255 he pixel from the input $\square$ D: Subtract 128 from x  Lecture 1 Histograms and color		$\Box$ <b>B</b> : Multiply x by -1 and add (255*3)	
need to apply to each channel to obtain an image $\Box C$ : Multiply x by -1 and add 255	□D: Subtract 128 from x  Lecture 1 Histograms and colo	Using point processing on pixels with a typical 8-bit	ED. Manipi, it by I and add (200 0)	
		per channel RGB encoding, which operations do we need to apply to each channel to obtain an image	- · · · · · · · · · · · · · · · · · · ·	
Ouestien 4 Lecture 1 Histograms on		per channel RGB encoding, which operations do we need to apply to each channel to obtain an image with inverted colours? (x is the pixel from the input	$\Box$ C: Multiply x by -1 and add 255	
· · · · · · · · · · · · · · · · · · ·	itensity image and its nivel values	per channel RGB encoding, which operations do we need to apply to each channel to obtain an image with inverted colours? (x is the pixel from the input image)	□C: Multiply x by -1 and add 255 □D: Subtract 128 from x	Histograms and colo
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0-1 1 1 1	1	per channel RGB encoding, which operations do we need to apply to each channel to obtain an image with inverted colours? (x is the pixel from the input image)  Question 4  Lea  Open question: For this 3x4 intensity image and its pixel.	□C: Multiply x by -1 and add 255 □D: Subtract 128 from x	Histograms and color
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End of exam.

Draw its histogram and apply histogram equalization. Give all the performed steps.