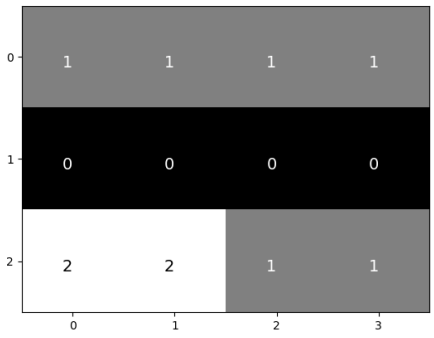
Practice example exam, January, 2022.

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!
(Note: In the actual exam the number of questions will be different and the rubric will not be given.)

Question 1	*Lecture 1*	*Histograms and color*
From the RGB cube, the color plane defined by fixing the coordinate R to 1 (ie: R=1) looks like:	☐**A:** Green, Blue, White ☐**B:** Red, Purple, Black ☑**C:** Red, Yellow, White ☐**D:** Yellow, Purple, Black	

Question 2	*Lecture 1*	*Histograms and color*
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?	☑**A:** Only 1 pair ☐**B:** 2 pairs ☐**C:** 3 pairs ☐**D:** All 4 pairs	

Question 3	*Lecture 1*	*Histograms and color*
Using point processing on pixels with a typical 8-bit 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)	☐**A:** 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	

Question 4	*Lecture 1*	*Histograms and color*
Open question: For this 3x4 intensity image and its pixel values.  Draw its histogram and apply histogram equalization. Give all the performed steps.	**Rubric:** (1pt) Draw its histogram Apply contrast stretching and give (2pt) Contrast stretched histogram (1pt) Contrast stretched image pixel values Apply histogram equalization and give: (4pt) Histogram equalized histogram (2pt) Histogram equalized image pixel values	

End of exam.