

## Sample Exam Questions – Modules 2 and 3

### Lectures 5-9

*Note for students:* Two questions for the exam will be from this list, and two more questions will be from the remaining lectures.

1. Define ‘Segmentation’ from a Computer Vision perspective and comment its subjectivity.
2. Identify the usefulness and the limitations of the *thresholding* technique.
3. In Computer Vision we often mention the presence of ‘magic numbers’. What are they and what is their importance in a segmentation process?
4. Distinguish *simple* and *adaptive thresholding*. Give an example of an *adaptive thresholding* method.
5. Formulate the basic principles of region-based segmentation.
6. Compare the *region splitting* and *region merging* methods for region-based segmentation.
7. Give some examples of gray-level similarity criteria for region-based segmentation.
8. Briefly describe the principles of the *watershed transform*, mentioning the two most popular analogies: *drainage* and *immersion*.
9. What is the typical usage of morphological filters? Mention their usefulness and limitations.
10. Write the algorithm of a morphological *dilation* operation using pseudo-code.
11. Write the algorithm of a morphological *erosion* operation using pseudo-code.
12. Give an example where a morphological *opening* operation is useful, and one where a morphological *closing* operation is useful.
13. What is *connected component analysis*?