

**Exam MOL3015
Nanomedicine II - Therapy**

Monday May 19th 2014, 9.00 - 13.00

ECTS credits: 7.5

Number of pages (included front-page): 2

Aids: C – Dictionaries/word books allowed

Language: English or Norwegian

Contact person during the exam:

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Exam results: June 11th

Examination results are announced on <http://studweb.ntnu.no/>

Please do not exceed indicated lengths, illustrations do not count, letter size will be considered. Weight of questions is listed. Good luck.

1) Biomaterials/Tissue engineering (35pts)

- a) What is biocompatibility? (5pts, 1/2page)
- b) Describe the sequence of events in foreign-body reactions? (5pts, 1page)
- c) How do you test for biocompatibility? (5pts, 1page)
- d) Describe 3 options for making a surface more biocompatible (10pts, 1 page)
- e) For tissue engineering, organotypic 3D organized cell growth is needed. What are the inputs and challenges for achieving true 3D tissues? (10pts, 2pages)

2) Drug delivery systems (40pts)

- a) What are the motivations/goals for Drug delivery systems? (10pts 1 page)
- b) What are the possibilities and limitations for targeting of DDS? (10pts, 2 pages)
- c) Describe 3 systems for stimuli-triggered release of DDS content at a specified anatomical location. (20pts, 2pages)

The semester paper is 25pts=100total.

Thank you.