

UNIVERSITY OF OSLO

Faculty of Mathematics and Natural Sciences

Exam in MBV4320 / MBV9320 Advanced physiology and cell biology

Day of exam: Friday feb. 20 th 2009

Exam hours: 09.00 – 12.00

This examination paper consists of 2 pages.

Appendices:None

Permitted materials: None

Make sure that your copy of this examination paper is complete before answering.

Number of questions: 7

A. EXAM QUESTIONS IN CELL BIOLOGY

In cellbiology, two of the four questions should be answered (=do not answer more than 2 questions!)

1. Where and by which mechanisms are receptors destined for lysosomal degradation recognized and sorted?
2. How are the glycosaminoglycan (GAG) chains synthesized?
3. Describe collagen processing and assembly in the secretory pathway.
4. Autophagy is now considered an important process for the delivery of antigens to MHC II molecules. Describe three possible ways cytosolic antigens can get access to the MHC class II compartment.

B. EXAM QUESTIONS IN PHYSIOLOGY

In physiology you should try to answer all questions.

5) Dopamine inhibits eel puberty. Explain how, and discuss the experimental evidence leading to this conclusion (including regulatory mechanisms).

6) a) What is the main glycolytic end product in an anoxic crucian carp? In what tissue is it produced and how does it leave the fish?

6 b) Why is adenosine produced during energy deficiency and how can it help the situation?

7) How does the nerve control muscle plasticity? (Do not write more than 2 pages).