

Department of Biology

**Examination paper for BI2064 Fish anatomy and
physiology****Academic contact during examination: Rolf Erik Olsen****Phone: 97598169****Examination date: 24/5-2016****Examination time (from-to): 09.00-13.00****Permitted examination support material: None****Other information:****Language: English****Number of pages (front page excluded): 1****Number of pages enclosed: 0****Informasjon om trykking av eksamensoppgave****Originalen er:****1-sidig** **2-sidig** **sort/hvit** **farger** **Checked by:**_____
Date_____
Signature

English

1 (1.5 h)

Describe and discuss anatomical and physiological adaptations in fish locomotion.

2 (0.5h)

- a) Make a drawing illustrating the main parts of the Atlantic salmon life cycle.
- b) Which hormones are central in changing the salmon's habitat during its lifecycle?

3 (0.5h)

- a) What specific mechanisms do sharks use to regulate the extracellular osmolality?
- b) What physiological problems does this strategy lead to, and how do they solve the problems?

4 (1.0h)

- a) Describe the different parts and their function of a salmonid digestive system (mouth to rectum)
- b) How do the different parts differ from that of a typical herbivore fish?
- c) Describe the cellular organization (histology) of a typical midgut in fish (draw and name the layers from enterocytes to serosa)

5 (0.5h)

Describe the central differences between cartilaginous fish (Chondrichthyes) and bony fish (Osteichthyes). Answers already given in question 3 should only be referred to.