



**NTNU – Trondheim**  
Norwegian University of  
Science and Technology

Department of Biology

## **Examination paper for BI2045 Communication and Reproductive Behaviour**

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**Examination date: 22 May 2015**

**Examination time (from-to): 09:00 – 13:00**

**Permitted examination support material: None**

**Other information:**

All questions count equally for the grade

**Language: English**

**Number of pages (front page excluded): 1**

**Number of pages enclosed:**

**Checked by:**

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Date

Signature

### **Question 1**

What is sexual selection, and how does it relate to natural selection? What kinds of traits can be selected for by sexual selection (give examples)? What role does variation in mating success play in sexual selection?

### **Question 2**

What do we mean with the term “sex roles” in evolutionary biology? What are the main types of sex roles among animals (illustrate by examples)? What do we mean with “operational sex ratios” (OSR), and how can we test whether OSR affects sex roles?

### **Question 3**

Give an example of a dishonest signal in plant-pollinator interaction. Explain what the benefit of such a signal is for the plant and how such an interaction can persist.

### **Question 4**

(a) Describe the question (phenomenon) that was the basis for your group’s project, and the hypotheses that have been suggested to explain the phenomenon. Which hypothesis do you think best explains the phenomenon, as judged from existing evidence? Explain why you think that particular hypothesis is most likely to be true. If you think several hypotheses may apply, explain why.

(b) Describe the questions that were the basis for two of the other group projects (your choice which), and outline potential explanations (hypotheses) that may explain each of these phenomena. (You do not need to discuss evidence for or against each).

Part (a) counts twice as much as (b) for the grade.