Brownian motion
Exam feedback - 2014/2015

The exam was written very well. Still there were some common errors, which can be found below.

Question 1 The main difficulties were with question 1.2. Many students tried to prove solve it by saying that $B_t$ is a Gaussian process and there is nothing to prove. The correct solution was to use the definition of the Brownian motion and to check all its requirements.

Question 2 In this question the main difficulties were with part (2.5). Some care is needed in order to apply the optional stopping theorem. Also, as a part of the proof one should show that $P(\tau_a < \infty) = 1$.

Question 3 Not many students attempted this question. The main difficulties were with the reflection principle (3.3).

Question 4 Not many students attempted this question. Those who attempted did it well.

Question 5 There were some difficulties in solving (5.2.4). The rest was done very well.

Question 6 This question was done well. Occasionally there were some difficulties with solving differential equations. In particular there were some problems to integrate the following integral $\int \frac{dx}{(x-a)(x-b)}$. 