Examination topics 2016/17
Introduction to quantization

1. Gaussian integrals
2. Hilbert-Schmidt operators and their integral kernels
3. x, p quantization
4. Weyl quantization
5. The Baker-Cambell-Hausdorff formula, and the Weyl quantization in terms of Weyl operators
6. Symplectic vector space, definition of the Weyl quantization for an abstract representation of the CCR
7. The parity operator and its relationship to Weyl quantization
8. Coherent states.
9. Covariant and contravariant quantization
10. Wick and anti-Wick quantization
11. Functional calculus and semiclassical quantization.
12. Semiclassical asymptotics of the dynamics and the Egorov Theorem
13. Weyl asymptotics of Schrödinger operators
14. The Lie-Trotter formula
15. Path integral for the Schrödinger equation
16. The Wiener measure and the Feynman-Kac formula.