Exam topics in nonparametric statistics

1. Regression problem, conditional expectation
2. Stone's theorem, weak universal consistency and the rate of convergence of the partitioning regression function estimates, kernel estimates, nearest neighbour estimates
3. Pattern recognition
4. Glivenko-Cantelli theorem, Vapnik–Chervonenkis dimension of a class of sets
5. Scheffé's theorem, density estimation, L_1 consistency of the histogram density estimates
6. Constantly rebalanced portfolio selection, log-optimal portfolio for memoryless market, examples
7. General dynamical portfolio selection, log-optimal portfolio for stationary market process
8. Empirical portfolio selection

Literature:

For topics 1-3: http://www.cs.bme.hu/~gyorfi/booknonpar.pdf

For topics 4-5: https://math.bme.hu/~koitomi/nonparametricstatistics.pdf

For topics 6-8: http://www.cs.bme.hu/~oti/portfolio/icpproject/ch2.pdf