Midterm: What to Expect?

Midterm details:
1. In person
2. In 370 Jay, Rm 202
3. At 2-4 pm on Thu, Dec 2
4. Allowed:
    a. Please bring your own bluebook to write down and submit solutions. If your writing is voluminous, bring two blue books. ONLY BLUEBOOKS will be accepted
    b. One-page cheat sheet with hand-written notes is allowed. No typeset notes will be allowed.
    c. Printed copies of the lecture slides w/out any additional comments/notes
    d. Pen(s), pencil(s), spare mask(s)
5. Not allowed:
    a. Anything which is not listed above under #4, including but not limited to
        i. Laptops, tablets, smart watches, music players. Anything that has a digital screen and I/O ports
        ii. Textbooks, lectures slides with any additional notes/comments
        iii. Calculators
        iv. Exchange of any materials and conversations with other students in class
        v. Any external materials, which are not listed above
        vi. Cheating as defined in NYU Tandon's Student Code of Conduct: "Cheating: intentionally using or attempting to use unauthorized notes, books, electronic media, or electronic communications in an exam; talking with fellow students or looking at another person's work during an exam; submitting work prepared in advance for an in-class examination; having someone take an exam for you or taking an exam for someone else; violating other rules governing the administration of examinations."
        vii. Important note: if you're unsure if a particular action, activity or behavior is allowed during the exam, feel free to ask *before* doing it.

Topics to be covered by the midterm:
1. Regression
2. Empirical risk minimization
3. Perceptron
4. Stochastic and regular gradient descent
5. Neural networks
6. Back-propagation
7. Structural risk minimization

8. VC dimension and bound guarantees
9. Support vector machine
10. Kernels
11. Discrete and continuous probability models
12. Maximum likelihood
13. Gaussian regression
14. Gaussian classification
15. Baeysian inference
16. Mixture models
17. Clustering, K-means
18. Expectation maximization
19. Graphical Models
20. Maximum Likelihood for Graphical Models
21. Bayes Ball Algorithm
22. Junction Trees, Triangulation, Junction Tree Algorithm
23. Hidden Markov Models
24. Application of Hidden Markov Models

How to prepare:
- Review homework solutions (posted online on Brightspace)
- Review lectures and the concepts listed above