1. Define concept of classification.
2. How you will design a machine learning system? Steps of developing a machine learning.
3. What are real life applications of machine learning?
4. List and explain issues in machine learning.
5. Calculate eigen vector of a given matrix

    A = 1 2 -3
       2 4 -6
       -1 -2 3

6. What are the performance measures to analyze quality of model?
7. Explain overfitting and underfitting of model.
8. Calculate SVD of a given matrix A = 1 0 1
                                    -2 1 0

9. Diagonalize the given matrix A as A= XDX^{-1}

    A = 1 1 1
       1 1 1
       1 1 1

10. Explain support vector machine.
11. What is regularized regression.
12. Explain norm of a vector.
13. Explain supervised machine learning
14. Explain unsupervised machine learning.
15. Find vectors that are orthogonal to [1,2,3]. Explain why we can have infinite number of such vectors.
16. Explain least squares method for supervised machine learning technique.
17. Solve the linear system $-x_1 + x_2 + 2x_3 = 2$, $3x_1 - x_2 + x_3 = 6$, $-x_1 + 3x_2 + 4x_3 = 4$.
18. What are the applications of singular value decomposition (SVD).

*NOTE: Matrix and linear equations may change.