**Problem 1**

Output

A screenshot of a computer

Description generated with high confidence

As noted above the test accuracy is **97.92%**

We used a tuning mode in the code to estimate the optimized hyperparameters for the design. The output for the same is shown below:

A screenshot of a computer

Description generated with high confidence

Based on the outcome, we used the following hyperparameters:

Size of hidden layer: **300**

Learning Rate: **0.8**

Minibatch size: **64** and

Number of Epochs: **20,000**

We used the **SGD optimizer** for the analysis here. The **weights were initialized with random value distributed normally** using the tensorflow.random\_normal() function and a standard deviation of 0.1.

**Problem 2:**

A screenshot of a computer

Description generated with high confidence

Test accuracy: **99.19%**