(b)

```
num_units=30
eta=0.5
mini_batch_size=256
epochs=5
alpha=0.5
The best accuracy on the validation set until now: 0.9386;
------------------------------------------------------------
num_units=30
eta=0.1
mini_batch_size=128
epochs=5
alpha=0.1
The best accuracy on the validation set until now: 0.9422;
------------------------------------------------------------
num_units=30
eta=0.1
mini_batch_size=64
epochs=10
alpha=0.1
The best accuracy on the validation set until now: 0.9562;
------------------------------------------------------------
num_units=40
eta=0.1
mini_batch_size=256
epochs=5
alpha=0.1
The best accuracy do not change this time
------------------------------------------------------------
num_units=40
eta=0.1
mini_batch_size=128
epochs=10
alpha=0.1
The best accuracy on the validation set until now: 0.9578;
------------------------------------------------------------
num_units=40
eta=0.01
mini_batch_size=64
epochs=10
alpha=0.01
The best accuracy do not change this time
------------------------------------------------------------
```

```
num_units=40
eta=0.01
mini_batch_size=32
epochs=15
alpha=0.01
The best accuracy do not change this time
------------------------------------------------------------
num_units=50
eta=0.5
mini_batch_size=256
epochs=5
alpha=0.1
The best accuracy on the validation set until now: 0.9636;
------------------------------------------------------------
num_units=50
eta=0.5
mini_batch_size=128
epochs=10
alpha=0.1
The best accuracy on the validation set until now: 0.9652;
------------------------------------------------------------
num_units=50
eta=0.1
mini_batch_size=64
epochs=10
alpha=0.1
The best accuracy on the validation set until now: 0.969;
------------------------------------------------------------
num_units=50
eta=0.01
mini_batch_size=32
epochs=20
alpha=0.1
The best accuracy do not change this time
------------------------------------------------------------
Finally, The best accuracy on the validation set: 0.969;

The best hyper parameters--
num_units_best: 50;
alpha_best: 0.1;
epochs_best: 10;
mini_batch_size_best: 64;
eta_best: 0.1;

(50, 0.1, 10, 64, 0.1)
```

（c）

```
The cross-entropy cost on the testing set: 0.129
The accuracy on the testing set:  96.39%
```