

```

1 Q1,a:
2 Accuracy of Train
3 0.8245
4 Accuracy of Test
5 0.8255
6 Q1,b:
7 Q1,e:
8 0
9 Q1,f:
10 [[0. 0. 0. 0. 1.]
11 [0. 0. 0. 1. 0.]
12 [0. 0. 1. 0. 0.]
13 [0. 0. 0. 1. 0.]
14 [0. 0. 1. 0. 0.]
15 [0. 1. 0. 0. 0.]
16 [0. 0. 1. 0. 0.]
17 [0. 1. 0. 0. 0.]
18 [1. 0. 0. 0. 0.]]
19 Q2, a:
20 learning rate = 0.1
21 learning rate = 10
22 learning rate = 1
23 learning rate = 0.001
24 learning rate = 1e-05
25 learning rate = 0.1
26 Q2,a xi:
27 Training accuracy:
28 0.8245
29 0.8245
30 0.0
31 Q2,a xii:
32 Testing accuracy:
33 0.8255
34 0.8255
35 0.0
36 Q2,d:
37 batch size = 30
38 initial learning rate = 0.01
39 decay rate = 1
40 burn in period = 0.1
41 learning rate = 0.01
42 0.8245
43 0.825
44 Difference of training accuracy:
45 0.0
46 Difference of training accuracy:
47 0.0005000000000000056

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```
48 Q3:
49 Q3,a
50 0.8975
51 0.893
52 Q3,b
53 0.875
54 0.872
55 Q3,f
56 difference between clf and EstMean
57 0.0
58 Q3,g
59 difference between clf and EstCov
60 3.763637928078592e-29
61 Q3,h
62 difference between clf and Estprior
63 0.0
64 Q3,i
65 I dont know
66 Q3,j
67 I dont know
68 Q3,k
69 I dont know
70 Q4,a:
71 0.894
72 0.8865
```