You are taking "Final Exam" as a timed exam. The timer on the right shows the time remaining in the exam. To receive credit for problems, you must select "Submit" for each problem before you select "End My Exam". **Show Less**

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Final Exam

Question 1: Multiple Choice

1/1 point (graded)

What's wrong with the following lines of code?

```
q=torch.tensor(1.0,requires_grad=False)

fq=2q**3+q

fq.backward()

q.grad
```

- (●) The parameter `requires_grad` should be set to `True`
- ( ) q is a float

A differentiable function should be used

✔

Submit You have used 1 of 2 attempts

✔ Correct (1/1 point)

Question 2: Multiple Choice

1/1 point (graded)

Consider the following lines of code. How many Parameters does the object `model` have?

```
from torch.nn import Linear
model=Linear(in_features=1,out_features=1)
```

1

2

3

None of the above

✔

Submit You have used 1 of 2 attempts

✔ Correct (1/1 point)

Question 3: Multiple Choice

1/1 point (graded)

The loss is a function of `w` and `b`. What is wrong with the following lines of code?

```
w.data=w.data-lr*w.grad.data
```

```
b.data=b.data-lr*b.grad.data
```

```
loss.backward()
```

- `b.data` is not an attribute
- `w.data` is not an attribute
- ✔ You need to call `loss.backward()` before you have access to the gradient of `w` and `b`

Submit You have used 1 of 2 attempts

✔ Correct (1/1 point)

Question 4: Multiple Choice

1/1 point (graded)

What's missing from the following code?

```
yhat=model(x)

loss=criterion(yhat,y)

loss.backward()

optimizer.step()
```

- There is no prediction
- Calculation of the loss
- Does not clear the gradient
- There is no Backward pass

✔

Submit You have used 1 of 2 attempts

✔ Correct (1/1 point)

Question 5: Multiple Choice

1/1 point (graded)

Training data is used to train the model; validation data is used to obtain what?

- Hyperparameters
- A test of how good the model performs in the real world
- The reduced model variance

✔

Submit You have used 1 of 2 attempts

✔ Correct (1/1 point)

Question 6: Multiple Choice

1/1 point (graded)
What is the result range for the logistic regression?

- Negative
- Between 0 and 1
- Larger then 1

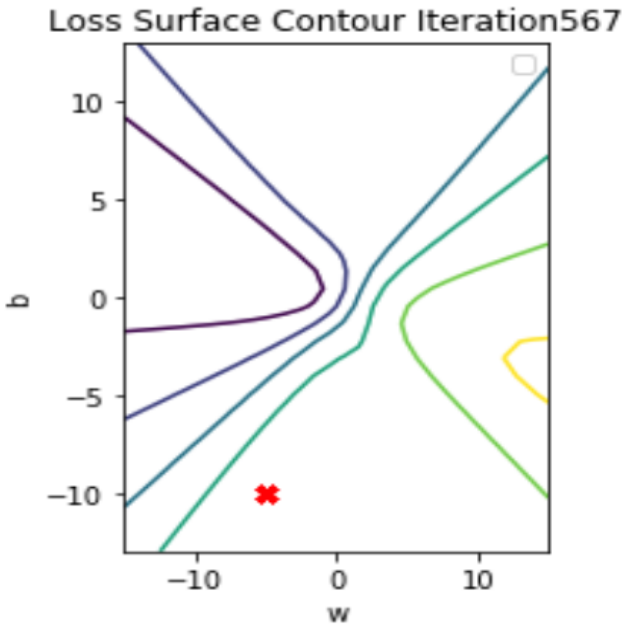
✔

Submit You have used 1 of 2 attempts

✔ Correct (1/1 point)

Question 7: Multiple Choice

1/1 point (graded)
Consider the plot of the total loss or cost surface after 567 iterations?



- (●) Mean Square Error
- ( ) Cross Entropy Loss

✔

Submit You have used 1 of 2 attempts

✔ Correct (1/1 point)

Question 8: Multiple Choice

1/1 point (graded)

Consider the following neural network model or class:

How many hidden layers does the following neural network object have?

```
model=Net(1,3,1)
```

1 ✔

1

Submit You have used 1 of 2 attempts

✔ Correct (1/1 point)

Question 9: Multiple Choice

1/1 point (graded)
Select the model used for linear regression?

- (●) torch.nn.Sequential(torch.nn.Linear(2, 2),torch.nn.Sigmoid(), torch.nn.Linear(2,1))
- ( ) torch.nn.Sequential(torch.nn.Linear(2, 2),torch.nn.Sigmoid(), torch.nn.Linear(2,1),torch.nn.Sigmoid())
- ( ) torch.nn.Sequential(torch.nn.Linear(2, 2),torch.nn.Linear(2,1), torch.nn.Linear(2,1),torch.nn.Sigmoid())

✔

Submit You have used 1 of 2 attempts

✔ Correct (1/1 point)

Question 10: Multiple Choice

1/1 point (graded)
What is the problem with the tanh and sigmoid activation function?

- They are discontinuous functions
- You can't take the derivative
- ✔ The derivative is near zero in many regions
- They are periodic functions

✔

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✔ Correct (1/1 point)

Question 11: Multiple Choice

1/1 point (graded)
What is the purpose of using dropout?

- ✔ Reduce the impact of noise or overfitting
- Reduce the computation cost
- Get higher accuracy on the training set

A method for validating your model

✔

Submit You have used 1 of 2 attempts

✔ Correct (1/1 point)

Question 12: Numerical Input

1/1 point (graded)
Consider the following code:

```
nn.Conv2d(in_channels=1, out_channels=1,kernel_size=2,stride=3,padding=1)
```

how many rows and columns will be padded in total?

4 ✔

4

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✔ Correct (1/1 point)

Question 13

1/1 point (graded)
What do the following lines of code do

```
linear=nn.Linear(input_size,output_size)
```

```
torch.nn.init.xavier_uniform_(linear.weight)
```

- perfroms prediction
- perfoms Xavier initialization
- Performers, He initialization

✔

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✔ Correct (1/1 point)

Question 14

1/1 point (graded)

What type of initialisation method should you use for Relu

- Defult
- He initialization
- Xavier initialization

✔

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✔ Correct (1/1 point)

Question 15

1/1 point (graded)
Consider the output layer of a Convolutional Neural Network, how many classes

self.fc1=nn.Linear(out_2*49,9)

9 ✔

9

Submit

✔ Correct (1/1 point)

Question 16

1/1 point (graded)
Consider the output layer of a Convolutional Neural Network,before flattening the activation layer is 12x12 what is the value of x

```
self.fc1=nn.Linear(out_2*x*x,5)
```

12 ✔

12

Submit

✔ Correct (1/1 point)

Question 17

1/1 point (graded)

Consider a Convolutional neural network used to classify `28 x 28` image `x` , is the following code correct to make prediction.

```
z=model(x.view(-1,28*28))
```

- (●) False
- ( ) True

✔

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ℹ Answers are displayed within the problem

Question 18

1/1 point (graded)

what loss function should you use for a convolutional neural network with 4 classes

- ( ) nn.MSELoss()
- (●) nn.CrossEntropyLoss()
- ( ) nn.BCELoss()

✔

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✔ Correct (1/1 point)

Question 19

1/1 point (graded)

The kernel parameters are obtained via training just like the parameters like linear regression, softmax and neural network?

- False
- True ✔

Submit

ℹ Answers are displayed within the problem

Question 20

1/1 point (graded)

More layers to a neural network always equal better performance

- False ✔
- True

Submit

✔ Correct (1/1 point)

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