**Assignment 3**

**Due on 2023-02-12, 22:09 IST.**

5 points

1. Entropy is represented as

\[ H(X) = -\sum_x P(x) \log P(x) \]

- None of the above

**Answer Attraction:**

- 5 points

2. Which of the following statement is true?

- An event with high probability has high information content.
- An event with low probability has high information content.
- None of the above

**Answer Attraction:**

- 5 points

3. The number of models in the input layer is 15 and the hidden layer is 4. The maximum number of connections from the input layer to the hidden layer are

- More than 60
- 60
- None of these

**Answer Attraction:**

- 5 points

4. Consider the following Feed Forward Neural Network:

![Feed Forward Neural Network Diagram](image)

- Consider the number of hidden layers in the above figure

- 3
- 4
- 5
- None of the above

**Answer Attraction:**

- 5 points

5. Consider the figure in question 4. Find the number of neurons in the above figure in 2nd hidden layer

- 4
- 3
- 2
- None of the above

**Answer Attraction:**

- 5 points

6. Consider the figure in question 4. What is the dimension of the weight matrix to connect input to 1st layer

- \( 1 \times 2 \)
- \( 3 \times 2 \)
- None of the above

**Answer Attraction:**

- 5 points

7. Consider the figure in question 4. What is the dimension of the first bias?

- \( 1 \times 1 \)
- \( 2 \times 1 \)
- None of the above

**Answer Attraction:**

- 5 points

8. Consider the figure in question 4. Find the number of inputs

- \( 1 \times 1 \)
- \( 2 \times 1 \)
- None of the above

**Answer Attraction:**

- 5 points

9. Which of the following methods is used at the output layer for classification?

- Linear
- Sigmoid
- None of these

**Answer Attraction:**

- 5 points

10. Consider the problem, which of the following loss function will be used?

- Cross entropy
- Mean square error
- None of these

**Answer Attraction:**

- 5 points