QUESTION A

PART 1 🡪 1 mark for each question

1) Which of the following is invalid in terms of Variable Names?

**Options:**

1. \_mystr = "Hello World!"
2. \_\_mystr = "Hello World!"
3. \_\_mystr\_\_ = "Hello World!"
4. None of the mentioned

2) In respect to the scope in Python, which of the following statements is/are TRUE?

**Statement 1:** A variable created within a function belongs to the local scope and can be used outside that function.

**Statement 2:** A local scope is referred to the object present through the execution of code since its inception.

**Statement 3:** A local scope is referred to the local object present in the current function.

**Options:**

1. Only Statement 2
2. Statement 1 and 3
3. Only Statement 3
4. All Statements are True

3) Among the following statements based on the difference between lists and tuples, which one statement is TRUE?

**Statement 1:** List is a sequence data structure, whereas Tuple is not.

**Statement 2:** Lists are immutable; however, Tuples are mutable.

**Statement 3:** Tuple is a sequence data structure, whereas List is not.

**Statement 4:** Tuples are immutable; however, Lists are mutable.

**Options:**

1. Statement 1
2. Statement 4
3. Statement 2
4. Statement 3

4) Which of the following is the library used in machine learning?

* 1. React js
  2. Tensorflow
  3. Node js
  4. None of the above

5) What is unsupervised learning?

* 1. It is a diagram or chart that helps determine a course of action or show a statistical probability.
  2. It is used to train algorithms that classify data or predict outcomes accurately by using labeled datasets
  3. It is a type of algorithm that learns patterns from untagged data and predicts a outcome
  4. None of the above

PART 2 🡪 5 marks for each question

1. What is tuple in Python? Explain with example
2. What is anonymous function in Python?
3. [Write a program in Python to check given number is prime or not.](https://quescol.com/interview-preparation/python-program-to-check-prime-number)
4. Write a program in Python to find prime factors of a given integer.
5. What are the differences between supervised and unsupervised learning?
6. What is overfitting ? How can you avoid overfitting your model?
7. What is logistic regression?
8. What is backward propagation?
9. What is a loss function ? explain a cycle
10. Explain about the artificial neural network?
11. **What do you understand by a random forest model?**

**PART 3 🡪 15 marks for each question**

1. **Write a python function to calculate the n! of a number**
2. **Create a svm machine learning model and train it with cifar10 dataset create a cnn network and train the same dataset**