Lab Report – KNN2

#QUESTION 1

```
import pandas as pd

import numpy as np

data = pd.read_csv(r'E:\Sem3-GH\Sem3Lab\AI\knn\iris.csv')

"""print("Shape of the data:", data.shape)

print("Type of the data:", type(data))

print("First 3 rows of the data:")

print(data.head(3))"""
```

#QUESTION 2

```
#from sklearn import datasets

#iris = datasets.load_iris()

"""print("Keys:", data.keys())

print("Shape of the data:", data.shape)

print("Feature names:", iris.feature_names)

print("Description:\n", iris.DESCR)"""
```

#QUESTION 3

```
#print(data.info())
```

#QUESTION 4

```python
import pandas as pd
data = pd.read_csv(r'E:\Sem3-GH\Sem3Lab\AI\knn\iris.csv')
stats = data.describe()
print(stats)
```

#QUESTION 5

```python
import pandas as pd
data = pd.read_csv(r'E:\Sem3-GH\Sem3Lab\AI\knn\iris.csv')
setosa = data[data['species'] == 'setosa']
versicolor = data[data['species'] == 'versicolor']
virginica = data[data['species'] == 'virginica']
print("Setosa Observations:")
print(setosa.head())
print("\nVersicolor Observations:")
print(versicolor.head())
print("\nVirginica Observations:")
print(virginica.head())
```

#QUESTION 6

```python
import pandas as pd
data = pd.read_csv(r'E:\Sem3-GH\Sem3Lab\AI\knn\iris.csv')
print("Original DataFrame:")
```

```
print(data.head())

data.drop('Id', axis=1, inplace=True)

print("\nModified DataFrame:")

print(data.head())
```

#QUESTION 7

```
import pandas as pd

data = pd.read_csv(r'E:\Sem3-GH\Sem3Lab\AI\knn\iris.csv')

first_four_cells = data.iloc[:2, :2]

print(first_four_cells)
```

#QUESTION 8

```
import pandas as pd

import matplotlib.pyplot as plt

data = pd.read_csv(r'E:\Sem3-GH\Sem3Lab\AI\knn\iris.csv')

data.boxplot()

plt.title('General Statistics of Iris Dataset')

plt.ylabel('Measurement (cm)')

plt.xticks(rotation=45)

plt.grid(False)

plt.show()
```

#QUESTION 9

```
import seaborn as sns

import matplotlib.pyplot as plt

ax=plt.subplots(1,1,figsize=(10,8))

sns.countplot('species',data=iris)

plt.title("Iris Species Count")

plt.show()
```

#QUESTION 10

```
import pandas as pd

import matplotlib.pyplot as plt

data = pd.read_csv('iris.csv')

species_counts = data['species'].value_counts()

plt.figure(figsize=(6, 6))

plt.pie(species_counts, labels=species_counts.index, autopct='%1.1f%%',
startangle=140)

plt.title('Frequency of Species in Iris Dataset')

plt.axis('equal')  # Equal aspect ratio ensures that pie is drawn as a circle.

plt.show()
```