**A. Unix commands**

A1:

Answer:

**/tmp/data/images/ -** Every file name which begins with / is an absolute path (also known as full path) which explains how to reach a particular directory starting from the root directory.

**tmp/data/images/ -**  Every file name which doesn't begin with / is a relative path which indicates how to reach a particular file or directory starting from the current directory.

**./tmp/data/images/ -** ./ means "starting from the current directory".

A2:

Answer:

‘~’: This means, ~ is a shortcut for the home directory of the current user.

echo ~ : This command prints the home directory of the current user.

A3.

Answer:

mkdir {1..10}: This command creates multiple directories 1 to 10 in a single

command.

**A4.  
Answer:**

mkdir data: This command creates a new directory called data

mkdir -p data: The -p option allows mkdir to create a directory with nested subdirectories in a single

operations.

**A5.**

**Answer:**

I will use the terminal using following command:

>>cd /directory/

>>eog 10000.png

**This also works:**

xdg-open 10000.png

**A6:**

**Answer:**

I will use the terminal using following command:

>> grep -n "message" file

**B. Python basic**

**B1:**

**Answer:**

\*Please check code B1\_answer.py in ra\_evaluation\_sakir directory.

**B2:**

**Answer:**

\* Please check code B2\_answer.py in ra\_evaluation\_sakir directory.

**B3:**

**Answer:**

The module search path is stored in the system module sys as the **sys.path** variable.

So we need to add directory in sys.path.

**C. Python OOP**

**C1.**

**Answer:**

The meanings of these three different underscores in python language are following:

**\_variable\_name:** Single Pre-Underscore. Single Pre-Underscore is only meant to use for the internal use

**\_\_variable\_name:** Double Pre-Underscores. Double Pre-Underscores tells the Python interpreter to rewrite the attribute name of subclasses to avoid naming conflicts.

**variable\_name\_:** Single Post Underscore. Single Post Underscore is used for naming your variables as Python Keywords and to avoid the clashes by adding an underscore at the end of your variable name.

**C2:**

**Answer:**

We can get features to create a list and append value. Then we get feature by calling

**Print(laptopBrand[0].name)**

\*Please check code C2\_answer.py in ra\_evaluation\_sakir directory.

**C3.  
Answer:**

f() method from class A will be called.

**Output:**

f from class A

**C4:**

**Answer:**

To make the instance callable, we should override the \_\_call\_\_() method in the Layer class.

So We need to implement \_\_call\_\_() method in Layer class to get features like y = Layer(image).

\*Please check code C4\_answer.py in ra\_evaluation\_sakir directory.

**C5:**

**Answer:**

You could use super().\_\_init\_\_ to initialize super class \_\_init\_\_() from child class.

Then we call Image class \_\_init\_\_() method from FlowerImage class.

\*Please check code C5\_answer.py in ra\_evaluation\_sakir directory.

**D. Data structure & algorithm**

**D1.**

**Answer:**

I will use Python Dictionaries. In python, a dictionary is a kind of container that stores the items in key-value pairs.Elements in the dictionary are stored as key-value pairs, where each value is mapped with a key. We can use name, id card number, address, date of birth and so on as keys and store the corresponding values.

As a dictionary, it keeps the elements in key-value mapping format and internally uses hashing for it; therefore, we can get a value from the dictionary by its key very quickly. In best cases, its complexity is O(1), whereas, in the worst case, its complexity can be O(n).

**D2:**

**Answer:**

\* Please check code D2\_answer.py in ra\_evaluation\_sakir directory.

**D3:**

**Answer:**

\* Please check code D3\_answer.py in ra\_evaluation\_sakir directory.

**D4:**

**Answer:**

Here we will use dictionary to improve the speed for frequently searched translations.

\* Please check code D4\_answer.py in ra\_evaluation\_sakir directory.

**E. Numpy**

**F. Deep learning**

**F1:**

**Answer:**

\* Please check code F1\_answer.py in ra\_evaluation\_sakir directory.

**F2:**

**Answer:**

\* Please check code F2\_answer.py in ra\_evaluation\_sakir directory.

**F2:**

**Answer:**

\* Please check code F2\_answer.py in ra\_evaluation\_sakir directory.