### 1. To what does a relative path refer?

A relative path refers to a path that is relative to the current working directory. It does not start from the root directory but rather from the directory where the program is currently running.

### 2. What does an absolute path start with on your operating system?

An absolute path starts with the root directory on your operating system. On Windows, it typically starts with a drive letter followed by a colon and a backslash (e.g., `C:\`). On Unix-like systems, including Linux and macOS, it starts with a forward slash (e.g., `/`).

### 3. What do the functions `os.getcwd()` and `os.chdir()` do?

- `os.getcwd()`: Returns the current working directory as a string.

- `os.chdir(path)`: Changes the current working directory to the path specified.

#### Example:

```python

import os

current\_directory = os.getcwd() # Get the current working directory

print(current\_directory)

os.chdir('/new/directory/path') # Change the current working directory

```

### 4. What are the `.` and `..` folders?

- `.`: Refers to the current directory.

- `..`: Refers to the parent directory (the directory one level up from the current directory).

### 5. In `C:\bacon\eggs\spam.txt`, which part is the dir name, and which part is the base name?

- \*\*Dir name\*\*: `C:\bacon\eggs`

- \*\*Base name\*\*: `spam.txt`

### 6. What are the three “mode” arguments that can be passed to the `open()` function?

The three common "mode" arguments that can be passed to the `open()` function are:

- `'r'`: Read mode (default mode) – opens a file for reading.

- `'w'`: Write mode – opens a file for writing (creates a new file or truncates an existing file).

- `'a'`: Append mode – opens a file for appending (adds content to the end of the file without truncating it).

Other modes include:

- `'b'`: Binary mode – used in conjunction with the above modes for binary files (e.g., `'rb'`, `'wb'`).

- `'+'`: Update mode – used in conjunction with read and write modes to allow for reading and writing (e.g., `'r+'`, `'w+'`).

### 7. What happens if an existing file is opened in write mode?

If an existing file is opened in write mode (`'w'`), the file is truncated to zero length, effectively erasing its contents before writing to it.

### 8. How do you tell the difference between `read()` and `readlines()`?

- `read()`: Reads the entire contents of a file and returns it as a single string.

- `readlines()`: Reads the contents of a file and returns it as a list of strings, where each string represents a line in the file.

#### Example:

```python

with open('example.txt', 'r') as file:

content = file.read() # Read the entire file into a single string

lines = file.readlines() # Read the file into a list of lines

```

### 9. What data structure does a shelf value resemble?

A shelf value (from the `shelve` module) resembles a dictionary. It allows you to store persistent, dictionary-like objects where the keys are strings and the values can be any picklable Python object.