

E)

1. Compiler: It takes an entire program at a time.  
Interpreter: It takes a single line of code or instruction at a time.
2. Compiler: is a translator which transforms source language (high-level language) into object language (machine language).  
Interpreter: s a program which imitates the execution of programs written in a source language
3. Compiler: comparatively faster / more difficult.  
Interpreter: slower/ easier.

F)

1. In Python 3, text strings are Unicode by default. In Python 2, strings are stored as ASCII by default—you have to add a “u” if you want to store strings as Unicode in Python 2.x.
2. In Python 2, if you write a number without any digits after the decimal point, it rounds your calculation down to the nearest whole number. However, in Python 3, the expression  $5 / 2$  will return the expected result of 2.5 without having to worry about adding those extra zeroes.
3. Essentially, in Python 3, the print statement has been replaced with a print () function. For example, in Python 2 it is print “hello” but in Python 3 it is print (“hello”).

G)

**ASCII:** abbreviated from American Standard Code for Information Interchange, is a character encoding standard for electronic communication. ASCII codes represent text in computers Most modern character-encoding schemes are based on ASCII, although they support many additional characters, ASCII is the traditional name for the encoding system.

**UTF-8:** is a variable width character encoding capable of encoding all 1,112,064 valid code points in Unicode using one to four 8-bit bytes.

The encoding is defined by the Unicode standard, the name is derived from Unicode (or Universal Coded Character Set) Transformation Format – 8-bit.

It was designed for backward compatibility with ASCII. Code points with lower numerical values, which tend to occur more frequently, are encoded using fewer bytes. The first 128 characters of Unicode, which correspond one-to-one with ASCII, are encoded using a single octet with the same binary value as ASCII, so that valid ASCII text is valid UTF-8-encoded Unicode as well. Since ASCII bytes do not occur when encoding non-ASCII code points into UTF-8, UTF-8 is safe to use within most programming and document languages that interpret certain ASCII characters in a special way.