REVISION QUESTIONS

DS2006 - INTRODUCTION TO DATA SCIENCE
Date: 22 Oct. 2025

Question 1

Write a function with an if-elif-else statement to classify a given number as positive, negative, or zero.

Question 2

Using a for loop, print all numbers from 1 to 20.

Question 3

What is the output of the code below?

```
print (5 > 7 or 8 > 2)
```

Question 4

What is the result of the Python code below?

```
score = 5 + 4 * 2.0
print (score)
```

Question 5

What is the output of the following code?

```
my_list = [5, 7, 8, 'House', True]
print (len(my_list))
```

Question 6

What is the output of the following code?

```
my_list = [[5, 7, 8], ['House', 'Pool']]
print (len(my_list[1][1]))
```

Question 7

What is the output of the following code?

```
my_list = [[5, 7, 8], (True, False), ('House', 'Pool')]
print (len(my_list[1][1]))
```

Question 8

Write a class Person with attributes name and age, and a method greet() that prints "Hello, my name is [name]". Create an instance of the Person class.

Question 9

Create a subclass Employee that inherits from Person and adds an attribute salary. Include a method show_salary().

Question 10

Create a DataFrame with columns name, age, salary and 3 rows of data.

Question 11

Write the code to select all rows where age > 30.

Question 12

Add a new column bonus to the DataFrame, which is 10% of salary.

Question 13

What is the difference between a class and an object?

Question 14

In a dataset used to build a model for predicting apartment prices, which columns would be the features and which would be the target?

Table:

Bedrooms	Bathrooms	Price
3	2	Low
1	1	Mid
5	3	High
9	4	High

Multiple-choice options:

- A) Features: Bedrooms, Target: Bathrooms
- B) Features: Bathrooms, Target: Price
- C) Features: Bathrooms, Bedrooms, Target: Price
- D) Features: Bathrooms, Target: Bedrooms, Price

Question 15

What is a confusion matrix, and how does it help evaluate a classification model?

Question 16

What is the purpose of the `_init_` method in a Python class?

Multiple-choice options:

- A) It is called when an object of the class is destroyed
- B) It is a special method used for inheritance
- C) It is just a method
- D) It is called when an object of the class is created and initialises the object's attributes

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Question 17

What is the difference between a Numpy array and a Python list?

Question 18

What is the correct function declaration of `my_function` that will execute the following function:

```
my_function (7, 25)
my_function (50, 12, 5)
```

Multiple-choice options:

- A) `def my_function(a, b, c):...`
- B) `def my_function(a, b, c=5):...`
- C) `def my_function(a, b): ...`
- D) `def my_function(a=50, b=20, c):...`