

Examen Final Semestre 2

Année Universitaire : 2025/2026

Partie 1 QCM Answers (6 points)

Q1. What is a variable in Python?

- A fixed value that cannot be changed.
- A labelled container that stores a value. ✓**
- A type of loop used to repeat code.
- A function that returns a result.

Q2. Which is a float?

- 12
- "4.5"
- True
- 4.5 ✓**

Q3. Difference between = and ==?

- They are the same.
- = assigns a value. == checks if two values are equal. ✓**
- = compares. == stores.
- Neither is used.

Q4. `len(["Milk", "Yoghurt", "Cheese"])` →

- 0
- 2
- 3 ✓**
- 4

Q5. DNS?

- Stores files.
- Translates domain names into IP addresses. ✓**
- Assigns IP addresses.
- Encrypts data.

Q6. Best prompt?

- "Tell me about food safety."
- "I am a Master's student in Food Science. List 3 microbiological risks in raw milk in a table with the bacteria and the control measure. Formal tone." ✓**
- "Explain bacteria."
- "Write something about dairy products."

Partie 2 Prompt Engineering (4 points)

Q1 — Two problems (1 pt each accept any two):

- No context (does not say who the student is or what field they are in).
- No output format specified.
- Too vague / too broad.
- No constraints (no word limit, no specific aspect).

Q2 Good prompt (2 pts must use at least 3 elements):

"I am a Master's student in Food Science. Explain the nutritional composition of pasteurised milk. Give the main macronutrients in a table showing values per 100ml. Formal academic tone."

Elements: Task ✓ Context ✓ Output format ✓ Tone ✓

Partie 3 Python Answers (10 points)

Exercise 1 Full solution (5 pts):

```

products = ['Milk', 'Yoghurt', 'Cheese', 'Butter', 'Cream']
protein  = [3.2, 5.1, 20.0, 0.8, 2.5]
temp     = [4.0, 4.5, 8.0, 10.0, 6.0]

compliant_count = 0

for i in range(len(products)):
    name  = products[i]
    prot  = protein[i]
    t_val = temp[i]
    if t_val <= 8:
        status = "COMPLIANT"
        compliant_count += 1
    else:
        status = "NON-COMPLIANT"
    print("Product:", name, "| Protein:", prot, "g |", status)

print("Compliant products:", compliant_count)

```

Marking: Q1=1.5 pts (loop+print) · Q2=2 pts (condition+status) · Q3=1.5 pts (counter+final print). Accept format variations.

Exercise 2 Full solution (5 pts):

```

# Student values may differ – any valid values accepted
product_names = ['Whole Milk', 'Yoghurt', 'Feta Cheese', 'Cream', 'Butter']
days_remaining = [7, 2, 14, 1, 30]

expired = 0
expiring_soon = 0
ok = 0

for i in range(len(product_names)):
    name = product_names[i]
    days = days_remaining[i]
    if days <= 0:
        print(name, "-> EXPIRED – remove immediately")
        expired += 1
    elif days <= 3:
        print(name, "-> EXPIRES SOON – flag for discount")
        expiring_soon += 1
    else:
        print(name, "-> OK")
        ok += 1

print("---")
print("OK:", ok, "| Expiring soon:", expiring_soon, "| Expired:", expired)

```

Marking: Q1=1 pt (two lists) · Q2=3 pts (loop+conditions+messages) · Q3=1 pt (summary). Accept any product names and day values.