

Python for Cheminformatics & Bioinformatics

Quiz: 100 Questions

AI-Driven Drug Development Training

February 2026

Instructions

- Total Questions: 100
 - Time Allowed: 120 minutes
 - Each question is worth 1 point (Total: 100 points)
 - Select the best answer for each question
 - Write your answers on the answer sheet provided
-

1 Variables & Data Types (Questions 1-5)

Question 1

What is the output of the following code?

```
compound_name = "Aspirin"
mw = 180.16
pic50 = "8.28"
print(type(mw) == type(pic50))
```

- A) True
 - B) False
 - C) Error
 - D) None
-

Question 2

What will be the value of logp?

```
compound = ("Ibuprofen", 206.28, 3.97)
name, mw, logp = compound
print(logp)
```

- A) "Ibuprofen"
 - B) 206.28
 - C) 3.97
 - D) Error
-

Question 3

What is the output?

```
ic50 = None # Missing measurement
activity = 0 # No inhibition
smiles = "" # Empty SMILES
print(bool(ic50), bool(activity), bool(smiles))
```

-
- A) True True True
 - B) False False False
 - C) None 0 ""
 - D) Error
-

Question 4

What is the result of `int(5.8) + int(-2.3)`?

- A) 3
 - B) 4
 - C) 3.5
 - D) Error
-

Question 5

Which statement correctly creates a multi-line DNA sequence string?

- A) `seq = "ATGC\nGCTA"`
 - B) `seq = '''ATGC
GCTA'''`
 - C) `seq = """ATGC\nGCTA"""`
 - D) All of the above
-

2 Operators (Questions 6-10)

Question 6

What is the output?

```
total_atoms = 17
heavy_atoms = 5
print(total_atoms // heavy_atoms, total_atoms % heavy_atoms, total_atoms / heavy_atoms)
```

-
- A) 3 2 3.4
 - B) 3.4 2 3
 - C) 3 2 3.0
 - D) 3.0 2.0 3.4
-

Question 7

What is the output?

```
mw = 450
logp = 4.5
passes_mw = mw <= 500
passes_logp = logp <= 5
print(passes_mw and passes_logp)
```

-
- A) True
 - B) False
 - C) None
 - D) Error

Question 8

What is the value of $10^{**}(9 - 8)$?

- A) 1
 - B) 10
 - C) 100
 - D) 0.1
-

Question 9

What is the output?

```
seq = "ATGCgc"
gc_count = seq.count("G") + seq.count("C")
gc_percent = gc_count / len(seq) * 100
print(gc_percent)
```

- A) 66.67 (approximately)
 - B) 50.0
 - C) 33.33
 - D) Error
-

Question 10

What is the output?

```
smiles1 = "CCO"
smiles2 = "CCO"
list1 = [smiles1]
list2 = [smiles2]
print(smiles1 == smiles2, list1 == list2, list1 is list2)
```

- A) True True True

- B) True True False
 - C) True False False
 - D) False False False
-

3 Strings (Questions 11-15)

Question 11

What is the output?

```
 dna = "ATGCGATCG"
print(dna[:3], dna[-3:], dna[::-3])
```

- A) ATG TCG AGC
 - B) ATG TCG AGAG
 - C) ATG GCG ATG
 - D) Error
-

Question 12

What is the output?

```
 dna = "ATGC"
rna = dna.replace("T", "U")
print(rna)
```

- A) AUGC
 - B) ATGC
 - C) UAGC
 - D) Error
-

Question 13

What is the output?

```
 smiles = "c1ccccc1" # Benzene
has_ring = any(c.isdigit() for c in smiles)
print(has_ring)
```

- A) True
 - B) False
 - C) 1
 - D) Error
-

Question 14

What is the output?

```
name = "Aspirin"
pic50 = 5.28
print(f"{name}: pIC50 = {pic50:.1f}")
```

-
- A) Aspirin: pIC50 = 5.28
 - B) Aspirin: pIC50 = 5.3
 - C) Aspirin: pIC50 = 5
 - D) Error
-

Question 15

What happens when you run this code?

```
seq = "ATGC"
seq[0] = "G" # Try to create mutation
```

- A) TypeError - strings are immutable
 - B) seq becomes "GTGC"
 - C) seq becomes "GATGC"
 - D) None
-

4 Lists (Questions 16-20)

Question 16

What is the output?

```
library_a = ["CC0", "CC", "CCC"]
library_b = library_a # Reference, not copy!
library_a.append("CCCC")
print(len(library_b))
```

- A) 3
 - B) 4
 - C) Error
 - D) None
-

Question 17

What is the output?

```
compounds = ["Aspirin", "Ibuprofen"]
compounds.extend(["Caffeine", "Metformin"])
print(len(compounds))
```

-
- A) 2
 - B) 3
 - C) 4
 - D) Error

Question 18

What is the output?

```
pic50_values = [5.2, 6.8, 7.3, 4.9, 8.1]
actives = [p for p in pic50_values if p >= 6.0]
print(len(actives))
```

-
- A) 2
 - B) 3
 - C) 4
 - D) 5

Question 19

What is the output?

```
# [MW, LogP, HBD, HBA]
descriptors = [
    [180.16, 1.19, 1, 4],      # Aspirin
    [206.28, 3.97, 1, 2],      # Ibuprofen
    [194.19, -0.07, 0, 6]      # Caffeine
]
print(descriptors[1][1])
```

-
- A) 180.16
 - B) 1.19
 - C) 3.97
 - D) 206.28

Question 20

What is the output?

```
compounds = [("Aspirin", 5.2), ("Drug_X", 8.1), ("Ibuprofen", 6.8)]
compounds.sort(key=lambda x: x[1], reverse=True)
print(compounds[0][0])
```

-
- A) Aspirin
 - B) Drug_X
 - C) Ibuprofen
 - D) 8.1

5 Tuples & Sets (Questions 21-25)

Question 21

What happens?

```
compound = ("Aspirin", 180.16, 5.2)
compound[2] = 6.0 # Try to update pIC50
```

-
- A) TypeError
 - B) compound becomes ("Aspirin", 180.16, 6.0)
 - C) None
 - D) SyntaxError

Question 22

What is the output?

```
data = (1, 2, 3, 4, 5, 6, 7)
first, *middle, last = data
print(len(middle))
```

-
- A) 7
 - B) 5
 - C) 2
 - D) 1

Question 23

What is the output?

```
library_a = {"CMP001", "CMP002", "CMP003"}  
library_b = {"CMP002", "CMP003", "CMP004"}  
common = library_a & library_b  
print(common)
```

-
- A) {"CMP001", "CMP004"}
 - B) {"CMP001", "CMP002", "CMP003", "CMP004"}
 - C) {"CMP002", "CMP003"}
 - D) Error
-

Question 24

What is the output?

```
scaffolds = {"benzene", "pyridine", "benzene", "furan", "pyridine"}  
print(len(scaffolds))
```

- A) 5
 - B) 3
 - C) 2
 - D) Error
-

Question 25

What is the output?

```
all_compounds = {"A", "B", "C", "D"}  
tested = {"B", "D"}  
untested = all_compounds - tested  
print(untested)
```

- A) {"B", "D"}
 - B) {"A", "C"}
 - C) {"A", "B", "C", "D"}
 - D) Error
-

6 Dictionaries (Questions 26-30)

Question 26

What is the output?

```
compound = {"name": "Aspirin", "MW": 180.16}
logP = compound.get("LogP", "N/A")
print(logP)
```

- A) None
 - B) N/A
 - C) Error (KeyError)
 - D) 0
-

Question 27

What is printed?

```
props = {"MW": 180.16, "LogP": 1.19, "HBD": 1}
for item in props:
    print(item, end=" ")
```

- A) 180.16 1.19 1
 - B) MW LogP HBD
 - C) ("MW", 180.16) ("LogP", 1.19) ("HBD", 1)
 - D) Error
-

Question 28

What is the output?

```
compounds = {
    "Aspirin": {"MW": 180.16, "pIC50": 5.2},
    "Ibuprofen": {"MW": 206.28, "pIC50": 6.8}
}
print(compounds["Aspirin"]["pIC50"])
```

- A) 180.16
 - B) 5.2
 - C) 6.8
 - D) Error
-

Question 29

What is the output?

```
import math
ic50_nm = {"A": 10, "B": 100, "C": 1000}
pic50 = {k: 9 - math.log10(v) for k, v in ic50_nm.items()}
print(round(pic50["A"], 1))
```

-
- A) 7.0
 - B) 8.0
 - C) 9.0
 - D) 10.0

Question 30

What is the output?

```
codon_table = {"AUG": "M", "UGG": "W", "UAA": "*"}
protein = codon_table.get("AUG", "X") + codon_table.get("UGG", "X")
print(protein)
```

-
- A) MW
 - B) AUG UGG
 - C) XX
 - D) Error

7 Control Flow (Questions 31-35)

Question 31

What is the output?

```
pic50 = 7.5
if pic50 >= 8:
    print("Highly Active")
elif pic50 >= 6:
    print("Active")
else:
    print("Inactive")
```

-
- A) Highly Active
 - B) Active
 - C) Inactive
 - D) Error

Question 32

What is the sum?

```
total = 0
for i in range(0, 10, 2):
    total += i
print(total)
```

-
- A) 20
 - B) 25
 - C) 30
 - D) 45

Question 33

What is printed?

```
pic50_values = [5.2, 5.8, 7.5, 6.2, 8.1]
for p in pic50_values:
    if p >= 7.0:
        print(f"Found potent: {p}")
        break
```

- A) Found potent: 8.1
 - B) Found potent: 7.5
 - C) Found potent: 7.5
 Found potent: 8.1
 - D) Nothing printed
-

Question 34

What is printed?

```
for compound in ["valid", None, "active", "", "potent"]:
    if not compound:
        continue
    print(compound, end=" ")
```

- A) valid None active potent
 - B) valid active potent
 - C) None
 - D) Error
-

Question 35

What is printed?

```
pic50_values = [5.2, 5.8, 5.5]
for p in pic50_values:
    if p >= 6.0:
        print("Found active")
        break
else:
    print("No actives found")
```

-
- A) No actives found
 - B) Found active
 - C) Nothing
 - D) Error

8 Functions (Questions 36-40)

Question 36

What is the output?

```
def classify_activity(pic50, threshold=6.0):
    return "Active" if pic50 >= threshold else "Inactive"

print(classify_activity(5.5))
```

-
- A) Active
 - B) Inactive
 - C) Error
 - D) None

Question 37

What is the output?

```
def validate_smiles(smiles):
    if not smiles:
        return
    print("Valid")

result = validate_smiles("")
print(result)
```

-
- A) None
 - B) Valid
None
 - C) Error
 - D) Valid

Question 38

What is the output?

```
def average_pic50(*values):
    return sum(values) / len(values)

print(average_pic50(5.2, 6.8, 7.3))
```

-
- A) 19.3
 - B) 6.43 (approximately)
 - C) Error
 - D) (5.2, 6.8, 7.3)

Question 39

What is the output?

```
def create_compound(**props):
    return props

compound = create_compound(name="Aspirin", MW=180.16)
print(type(compound))
```

-
- A) <class 'tuple'>
 - B) <class 'dict'>
 - C) <class 'list'>
 - D) Error

Question 40

What is the output?

```
import math
ic50_to_pic50 = lambda ic50_nm: 9 - math.log10(ic50_nm)
print(ic50_to_pic50(100))
```

-
- A) 7.0
 - B) 8.0
 - C) 9.0
 - D) 2.0

9 File & Error Handling (Questions 41-45)

Question 41

What is correct about this code?

```
with open("sequence.fasta", "r") as f:  
    content = f.read()
```

- A) The file is automatically closed after the with block
 - B) You must call f.close() manually
 - C) The file stays open
 - D) Error
-

Question 42

What happens?

```
with open("compounds.csv", "r") as f:  
    f.write("Aspirin,180.16")
```

- A) Data is written successfully
 - B) io.UnsupportedOperation error
 - C) FileNotFoundError
 - D) Nothing happens
-

Question 43

What is printed?

```
def parse_smiles(smiles):  
    if not smiles:  
        raise ValueError("Empty SMILES")  
    return smiles  
  
try:  
    result = parse_smiles("")  
except ValueError:  
    print("Error")  
print("Done")
```

- A) Error
 - B) Done
 - C) Error
 Done
 - D) Nothing
-

Question 44

What is printed?

```
def process_compound():
    try:
        return "Processed"
    finally:
        print("Cleanup")

result = process_compound()
```

- A) Processed
 - B) Cleanup
 - C) Both (Cleanup first, then returns “Processed”)
 - D) Error
-

Question 45

What is printed?

```
try:
    ic50 = float("invalid")
except ValueError:
    print("Invalid IC50")
except TypeError:
    print("Wrong type")
```

- A) Invalid IC50
 - B) Wrong type
 - C) Both
 - D) Error (uncaught)
-

10 Advanced Topics (Questions 46-50)

Question 46

What is the difference?

```
list_comp = [x**2 for x in range(1000000)]
gen_exp = (x**2 for x in range(1000000))
```

- A) Both use the same memory
 - B) Generator uses less memory (lazy evaluation)
 - C) List uses less memory
 - D) They produce different values
-

Question 47

What is the output?

```
import math
ic50_values = [10, 100, 1000]
pic50_values = list(map(lambda x: 9 - math.log10(x), ic50_values))
print(pic50_values)
```

-
- A) [8.0, 7.0, 6.0]
 - B) [1.0, 2.0, 3.0]
 - C) [10, 100, 1000]
 - D) Error

Question 48

What is the output?

```
pic50_values = [5.2, 6.8, 7.3, 4.9, 8.1]
potent = list(filter(lambda p: p >= 7.0, pic50_values))
print(potent)
```

-
- A) [5.2, 6.8, 4.9]
 - B) [6.8, 7.3, 8.1]
 - C) [7.3, 8.1]
 - D) [8.1]

Question 49

What is the output?

```
names = ["Aspirin", "Ibuprofen", "Caffeine"]
pic50s = [5.2, 6.8, 4.8]
compounds = list(zip(names, pic50s))
print(compounds[0])
```

-
- A) Aspirin
 - B) 5.2
 - C) ("Aspirin", 5.2)
 - D) ["Aspirin", 5.2]

Question 50

What is the output?

```
smiles_list = ["CCO", "CC(=O)O", "c1ccccc1"]
for idx, smiles in enumerate(smiles_list, start=1):
    print(f"{idx}: {smiles}")
    break
```

-
- A) 0: CCO
 - B) 1: CCO
 - C) CCO: 1
 - D) Error

11 Classes & Object-Oriented Programming (Questions 51-60)

Question 51

What is the output?

```
class Compound:
    def __init__(self, name, mw):
        self.name = name
        self.mw = mw

aspirin = Compound("Aspirin", 180.16)
print(aspirin.name)
```

-
- A) Compound
 - B) Aspirin
 - C) 180.16
 - D) Error

Question 52

What is the output?

```
class Molecule:
    atom_count = 0 # Class variable

    def __init__(self, atoms):
        Molecule.atom_count += atoms

m1 = Molecule(10)
m2 = Molecule(15)
print(Molecule.atom_count)
```

-
- A) 10
 - B) 15
 - C) 25
 - D) Error

Question 53

What is the output?

```
class Drug:  
    def __init__(self, name):  
        self._name = name # Protected  
  
    @property  
    def name(self):  
        return self._name.upper()  
  
d = Drug("aspirin")  
print(d.name)
```

- A) aspirin
 - B) ASPIRIN
 - C) _name
 - D) Error
-

Question 54

What is the output?

```
class Protein:  
    def __len__(self):  
        return 150 # amino acids  
  
p = Protein()  
print(len(p))
```

- A) Protein
 - B) 150
 - C) None
 - D) Error
-

Question 55

What is the output?

```
class Compound:  
    def __init__(self, name):  
        self.name = name  
  
    def __str__(self):  
        return f"Compound: {self.name}"  
  
c = Compound("Caffeine")  
print(c)
```

- A) <Compound object>
- B) Compound: Caffeine

- C) Caffeine
D) Error
-

Question 56

What is the output?

```
class Molecule:  
    pass  
  
class Drug(Molecule):  
    pass  
  
d = Drug()  
print(isinstance(d, Molecule))
```

- A) True
B) False
C) Drug
D) Error
-

Question 57

What is the output?

```
class Compound:  
    def describe(self):  
        return "Generic compound"  
  
class Drug(Compound):  
    def describe(self):  
        return "Therapeutic drug"  
  
d = Drug()  
print(d.describe())
```

- A) Generic compound
B) Therapeutic drug
C) Both
D) Error
-

Question 58

What is the output?

```
class Enzyme:  
    @staticmethod  
    def calculate_kcat(vmax, enzyme_conc):  
        return vmax / enzyme_conc  
  
result = Enzyme.calculate_kcat(100, 0.5)  
print(result)
```

- A) 50.0
 - B) 200.0
 - C) 0.005
 - D) Error
-

Question 59

What is the output?

```
class Counter:  
    count = 0  
  
    @classmethod  
    def increment(cls):  
        cls.count += 1  
        return cls.count  
  
print(Counter.increment(), Counter.increment())
```

- A) 1 1
 - B) 1 2
 - C) 0 1
 - D) Error
-

Question 60

What is the output?

```
class Compound:  
    def __init__(self, name, mw):  
        self.name = name  
        self.mw = mw  
  
    def __eq__(self, other):  
        return self.name == other.name  
  
c1 = Compound("Aspirin", 180.16)  
c2 = Compound("Aspirin", 180.0)  
print(c1 == c2)
```

- A) True
 - B) False
 - C) Error
 - D) None
-

12 Modules & Imports (Questions 61-65)

Question 61

Which import statement is correct for using only the `sqrt` function?

- A) `import math.sqrt`
 - B) `from math import sqrt`
 - C) `import sqrt from math`
 - D) `math.import(sqrt)`
-

Question 62

What is the output?

```
from math import log10 as lg
ic50 = 100 # nM
pic50 = 9 - lg(ic50)
print(pic50)
```

- A) 7.0
 - B) 9.0
 - C) 2.0
 - D) Error
-

Question 63

What does `__name__ == "__main__"` check?

- A) If the module is imported
 - B) If the script is run directly
 - C) If the function is main
 - D) If Python version is correct
-

Question 64

What is the output?

```
import random
random.seed(42)
print(random.randint(1, 10), random.randint(1, 10))
```

- A) Random numbers each run
 - B) Same numbers each run
 - C) 42 42
 - D) Error
-

Question 65

What is the output?

```
from collections import Counter
bases = "ATGCGATCGATCG"
counts = Counter(bases)
print(counts["G"])
```

-
- A) 3
 - B) 4
 - C) 5
 - D) Error

13 List Methods (Questions 66-70)

Question 66

What is the output?

```
compounds = ["Aspirin", "Ibuprofen", "Caffeine"]
compounds.insert(1, "Metformin")
print(compounds[1])
```

-
- A) Aspirin
 - B) Metformin
 - C) Ibuprofen
 - D) Error

Question 67

What is the output?

```
pic50_values = [5.2, 8.1, 6.8, 7.3]
removed = pic50_values.pop(1)
print(removed, len(pic50_values))
```

-
- A) 5.2 3
 - B) 8.1 3
 - C) 8.1 4
 - D) Error

Question 68

What is the output?

```
smiles = ["CC0", "CC", "CCC", "CC"]
print(smiles.count("CC"))
```

- A) 1
 - B) 2
 - C) 3
 - D) 4
-

Question 69

What is the output?

```
compounds = ["Aspirin", "Caffeine", "Ibuprofen"]
compounds.reverse()
print(compounds[0])
```

- A) Aspirin
 - B) Caffeine
 - C) Ibuprofen
 - D) Error
-

Question 70

What is the output?

```
library = ["CC0", "CC(=O)O", "c1ccccc1"]
library_copy = library.copy()
library.append("CCN")
print(len(library_copy))
```

- A) 3
 - B) 4
 - C) Error
 - D) None
-

14 String Methods (Questions 71-75)

Question 71

What is the output?

```
smiles = "CCO"
print(len(smiles.strip()))
```

- A) 7
 - B) 3
 - C) 5
 - D) Error
-

Question 72

What is the output?

```
sequence = "ATGCGATCG"
parts = sequence.split("G")
print(len(parts))
```

- A) 2
 - B) 3
 - C) 4
 - D) 9
-

Question 73

What is the output?

```
compounds = ["Aspirin", "Ibuprofen", "Caffeine"]
result = ", ".join(compounds)
print(result)
```

- A) ["Aspirin", "Ibuprofen", "Caffeine"]
 - B) Aspirin, Ibuprofen, Caffeine
 - C) AspirinIbuprofenCaffeine
 - D) Error
-

Question 74

What is the output?

```
name = "aspirin"
print(name.capitalize(), name.upper())
```

-
- A) Aspirin ASPIRIN
 - B) ASPIRIN Aspirin
 - C) aspirin ASPIRIN
 - D) Error

Question 75

What is the output?

```
smiles = "c1ccccc1"
print(smiles.startswith("c"), smiles.endswith("1"))
```

- A) True True
- B) True False
- C) False True
- D) False False

15 Dictionary Methods (Questions 76-80)

Question 76

What is the output?

```
compound = {"name": "Aspirin", "MW": 180.16}
compound.update({"LogP": 1.19, "MW": 180.2})
print(compound["MW"])
```

-
- A) 180.16
 - B) 180.2
 - C) Error
 - D) None

Question 77

What is the output?

```
props = {"MW": 180.16, "LogP": 1.19}
keys = list(props.keys())
print(keys)
```

-
- A) ["MW", "LogP"]
 - B) [180.16, 1.19]
 - C) [("MW", 180.16), ("LogP", 1.19)]
 - D) Error
-

Question 78

What is the output?

```
compound = {"name": "Aspirin", "MW": 180.16}
removed = compound.pop("MW")
print(removed, "MW" in compound)
```

- A) 180.16 True
 - B) 180.16 False
 - C) None False
 - D) Error
-

Question 79

What is the output?

```
compound = {"name": "Aspirin"}
compound.setdefault("MW", 180.16)
compound.setdefault("name", "Ibuprofen")
print(compound["name"], compound["MW"])
```

- A) Ibuprofen 180.16
 - B) Aspirin 180.16
 - C) Aspirin None
 - D) Error
-

Question 80

What is the output?

```
d1 = {"a": 1, "b": 2}
d2 = {"b": 3, "c": 4}
merged = {**d1, **d2}
print(merged["b"])
```

-
- A) 2
 - B) 3
 - C) 5
 - D) Error

16 Comprehensions (Questions 81-85)

Question 81

What is the output?

```
mw_values = [180, 206, 194, 267]
heavy = [mw for mw in mw_values if mw > 200]
print(heavy)
```

-
- A) [180, 194]
 - B) [206, 267]
 - C) [206, 194, 267]
 - D) Error

Question 82

What is the output?

```
names = ["aspirin", "ibuprofen"]
upper_names = [n.upper() for n in names]
print(upper_names[0])
```

-
- A) aspirin
 - B) ASPIRIN
 - C) Aspirin
 - D) Error

Question 83

What is the output?

```
sequence = "ATGC"
base_set = {base for base in sequence}
print(len(base_set))
```

-
- A) 4
 - B) 3
 - C) 1
 - D) Error

Question 84

What is the output?

```
compounds = ["Aspirin", "Ibuprofen", "Caffeine"]
name_len = {c: len(c) for c in compounds}
print(name_len["Caffeine"])
```

- A) Caffeine
- B) 8
- C) 7
- D) Error

Question 85

What is the output?

```
matrix = [[i*j for j in range(1, 4)] for i in range(1, 3)]
print(matrix[1][2])
```

- A) 3
- B) 4
- C) 6
- D) Error

17 Sorting & Ordering (Questions 86-90)

Question 86

What is the output?

```
pic50 = [5.2, 8.1, 6.8, 7.3]
sorted_pic50 = sorted(pic50)
print(sorted_pic50[-1])
```

- A) 5.2
 - B) 8.1
 - C) 7.3
 - D) Error
-

Question 87

What is the output?

```
names = ["Caffeine", "Aspirin", "Ibuprofen"]
names.sort()
print(names[0])
```

- A) Caffeine
 - B) Aspirin
 - C) Ibuprofen
 - D) Error
-

Question 88

What is the output?

```
compounds = ["CC", "CCCC", "C", "CCC"]
by_length = sorted(compounds, key=len)
print(by_length[0])
```

- A) CC
 - B) CCCC
 - C) C
 - D) CCC
-

Question 89

What is the output?

```
data = [(5.2, "A"), (8.1, "B"), (6.8, "C")]
sorted_data = sorted(data, reverse=True)
print(sorted_data[0][1])
```

- A) A
 - B) B
 - C) C
 - D) 8.1
-

Question 90

What is the output?

```
values = [3, 1, 4, 1, 5, 9, 2, 6]
print(min(values), max(values))
```

-
- A) 1 9
 - B) 9 1
 - C) 1 6
 - D) Error

18 Type Conversion (Questions 91-95)

Question 91

What is the output?

```
mw = "180.16"
print(type(float(mw)))
```

-
- A) <class 'str'>
 - B) <class 'float'>
 - C) <class 'int'>
 - D) Error

Question 92

What is the output?

```
values = (1, 2, 3, 2, 1)
unique = set(values)
print(len(unique))
```

-
- A) 5
 - B) 3
 - C) 2
 - D) Error

Question 93

What is the output?

```
sequence = "ATGC"
base_list = list(sequence)
print(base_list)
```

-
- A) ATGC
 - B) ["ATGC"]
 - C) ["A", "T", "G", "C"]
 - D) Error
-

Question 94

What is the output?

```
bases = ["A", "T", "G", "C"]
seq = "".join(bases)
print(seq)
```

-
- A) ["A", "T", "G", "C"]
 - B) A T G C
 - C) ATGC
 - D) Error
-

Question 95

What is the output?

```
pic50 = 7.8
print(int(pic50), round(pic50))
```

-
- A) 7 7
 - B) 7 8
 - C) 8 8
 - D) Error
-

19 Boolean & None (Questions 96-100)

Question 96

What is the output?

```
result = None
if result is None:
    print("No data")
else:
    print(result)
```

-
- A) No data
 - B) None
 - C) result
 - D) Error
-

Question 97

What is the output?

```
active = True
selective = False
print(active and selective, active or selective)
```

- A) True True
 - B) False True
 - C) True False
 - D) False False
-

Question 98

What is the output?

```
values = [0, "", None, "active", 42]
truthy = [v for v in values if v]
print(len(truthy))
```

- A) 5
 - B) 3
 - C) 2
 - D) 0
-

Question 99

What is the output?

```
x = 5
y = 10
print(not (x > y), x != y)
```

- A) True True
 - B) False True
 - C) True False
 - D) False False
-

Question 100

What is the output?

```
def check_compound(smiles):
    return smiles or "No SMILES provided"

print(check_compound(""))
print(check_compound("CCO"))
```

- A) """ CCO
 - B) No SMILES provided CCO
 - C) None CCO
 - D) Error
-

Answer Sheet

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Name: _____

Date: _____