Python Preparation

```
# 1
a = 5
b = 10
print(a + b)

# 2
name = "Alice"
print("Hello", name)

# 3
x = 7
y = 3
z = x * y
print("Result:", z)

# 4
pi = 3.14159
radius = 2
area = pi * radius ** 2
print("Area:", area)

# 5
is_active = True
print("Status:", is_active)

# 6
print(10 + 3 * 2)

# 7
print(15 // 4)

# 8
print(7 > 5 and 3 < 1)

# 9
print(not (4 == 4))
```

```
# 10
x = 5
x += 3
print(x)

# 11
x = 10
if x % 2 == 0:
    print("Even")
else:
    print("Odd")

# 12
age = 17
if age >= 18:
    print("Adult")
else:
    print("Minor")

# 13
marks = 85
if marks >= 90:
    print("Grade A")
elif marks >= 75:
    print("Grade B")
else:
    print("Grade C")

# 14
a = 3
b = 7
if a > b:
    print(a)
else:
    print(b)

# 15
char = 'a'
if char in 'aeiou':
    print("Vowel")
```

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else:
    print("Consonant")

# 16
for i in range(5):
    print(i)

# 17
for char in "hello":
    print(char)

# 18
sum = 0
for i in range(1, 6):
    sum += i
print(sum)

# 19
for i in range(2, 11, 2):
    print(i)

# 20
for i in [10, 20, 30]:
    print(i * 2)

# 21
i = 1
while i <= 5:
    print(i)
    i += 1

# 22
n = 10
while n > 0:
    print(n, end=" ")
    n -= 2

# 23
x = 0
while x < 3:
```

```
    print("Hello")
    x += 1

# 24
count = 0
while True:
    print(count)
    count += 1
    if count == 3:
        break

# 25
i = 0
while i < 5:
    if i == 3:
        i += 1
        continue
    print(i)
    i += 1

# 26
s = "Python"
print(s[0])

# 27
print("hello".upper())

# 28
print("abc" * 3)

# 29
print("space".replace(" ", "_"))

# 30
print("abcde"[1:4])

# 31
lst = [1, 2, 3]
print(len(lst))
```

```
# 32
lst.append(4)
print(lst)

# 33
print([x * 2 for x in lst])

# 34
lst.remove(2)
print(lst)

# 35
print(lst[::-1])

# 36
t = (10, 20, 30)
print(t[1])

# 37
print(len(t))

# 38
t2 = t + (40,)
print(t2)

# 39
print(t.index(20))

# 40
print(50 in t)

# 41
d = {"a": 1, "b": 2}
print(d["a"])

# 42
d["c"] = 3
print(d)

# 43
```

```
for key in d:
    print(key, d[key])

# 44
print(d.get("x", "Not found"))

# 45
print(list(d.keys()))

# 46
s = {1, 2, 3}
s.add(4)
print(s)

# 47
s.remove(2)
print(s)

# 48
print(3 in s)

# 49
s2 = {3, 4, 5}
print(s & s2)

# 50
print(s | s2)

# 51: Add two numbers
a = int(input("Enter first number: "))
b = int(input("Enter second number: "))
print("Sum:", a + b)

# 52: Check even or odd
num = int(input("Enter a number: "))
if num % 2 == 0:
    print("Even")
else:
    print("Odd")
```

```
# 53: Greet user by name
name = input("Enter your name: ")
print("Hello", name + "!")

# 54: Find the square of a number
num = float(input("Enter a number: "))
print("Square:", num ** 2)

# 55: Calculate simple interest
p = float(input("Enter principal: "))
r = float(input("Enter rate: "))
t = float(input("Enter time: "))
si = (p * r * t) / 100
print("Simple Interest:", si)

# 56: Check if input character is a vowel
ch = input("Enter a character: ")
if ch.lower() in 'aeiou':
    print("Vowel")
else:
    print("Consonant")

# 57: Calculate factorial using loop
n = int(input("Enter a number: "))
fact = 1
for i in range(1, n + 1):
    fact *= i
print("Factorial:", fact)

# 58: Reverse a string
s = input("Enter a string: ")
print("Reversed:", s[::-1])

# 59: Find largest of three numbers
a = int(input("Enter first number: "))
b = int(input("Enter second number: "))
c = int(input("Enter third number: "))
print("Largest:", max(a, b, c))

# 60: Count vowels in a string
```

```
text = input("Enter a string: ")
count = 0
for ch in text.lower():
    if ch in 'aeiou':
        count += 1
print("Number of vowels:", count)
```