Programming Assignment-24

Question 1:

Ans.

```
def amplify(num):
    return [i * 10 if i % 4 == 0 else i for i in range(1, num + 1)]


# Examples
print(amplify(4))  # ➞ [1, 2, 3, 40]
print(amplify(3))  # ➞ [1, 2, 3]
print(amplify(25)) # ➞ [1, 2, 3, 40, 5, 6, 7, 80, 9, 10, 11, 120, 13, 14, 15, 160, 17, 18, 19, 200, 21, 22, 23, 240, 25]
```

Question 2:

Ans.

```
def unique(lst):
    for num in lst:
        if lst.count(num) == 1:
            return num


# Examples
print(unique([3, 3, 3, 7, 3, 3]))      # ➞ 7
print(unique([0, 0, 0.77, 0, 0]))      # ➞ 0.77
print(unique([0, 1, 1, 1, 1, 1, 1, 1])) # ➞ 0
```

Question 3:

Ans.

```
import math


class Circle:
```

```
    def __init__(self, radius):
        self.radius = radius

    def getArea(self):
        return round(math.pi * self.radius ** 2, 2)

    def getPerimeter(self):
        return round(2 * math.pi * self.radius, 2)

# Examples
circy = Circle(11)
print(circy.getArea())      # ➞ 380.13
circy = Circle(4.44)
print(circy.getPerimeter()) # ➞ 27.9
```

Question 4:

Ans.

```
def sort_by_length(lst):
    return sorted(lst, key=len)

# Examples
print(sort_by_length(["Google", "Apple", "Microsoft"]))  # ➞ ["Apple", "Google", "Microsoft"]
print(sort_by_length(["Leonardo", "Michelangelo", "Raphael", "Donatello"]))  # ➞ ["Raphael", "Leonardo", "Donatello", "Michelangelo"]
print(sort_by_length(["Turing", "Einstein", "Jung"]))  # ➞ ["Jung", "Turing", "Einstein"]
```

Question 5:

Ans.

```
def is_triplet(a, b, c):
```

```
    x, y, z = sorted([a, b, c])
    return x**2 + y**2 == z**2

# Examples
print(is_triplet(3, 4, 5))   # → True
print(is_triplet(13, 5, 12)) # → True
print(is_triplet(1, 2, 3))   # → False
```