**30th Jan Assignment:**

**Only answers are written.**

Ans1)

percentage = float(input("Enter your percentage: "))

if percentage > 90:

grade = "A"

elif percentage > 80:

grade = "B"

elif percentage >= 60:

grade = "C"

else:

grade = "D"

print(f"Your grade is: {grade}")

Ans2)

price = int(input("mention your vehicle price:"))

if price > 100000:

tax= "15%"

elif price >50000 :

tax = "10%"

elif price <= 100000 :

tax = "10%"

elif price <= 50000:

tax = "5%"

print(f"you have to pay: {tax} tax on your veicle ")

Ans3)

city = input("mention your city:")

if city == "delhi":

Monument = "Red Fort"

elif city == "agra":

Monument = "Taj Mahal"

elif city == "jaipur":

Monument = "Jai Mahal"

print(f"your city's monument is : {Monument} ")

Ans4)

# Accept the input number from the user

number = int(input("Enter a number: "))

# Initialize a variable to keep track of the number of divisions

count = 0

# Keep dividing the number by 3 until it becomes less than or equal to 10

while number > 10:

number /= 3

count += 1

# Display the number of times it was divided by 3

print(f"The number can be divided by 3 {count} times before it is less than or equal to 10.")

Ans5)

A while loop in Python is used when you want to repeatedly execute a block of code as long as a specified condition is true. It is a control flow structure that allows you to create loops or repetitive tasks in your program. The loop continues executing as long as the condition remains true, and it terminates when the condition becomes false.

for example:

numbers = [1, 2, 3, 4, 5, 6]

total = 0

index = 0

while index < len(numbers):

total += numbers[index]

index += 1

print("Sum of numbers:", total)

Ans6)

# Pattern 1: Right Triangle Pattern

n = 5

i = 1

while i <= n:

j = 1

while j <= i:

print("\*", end=" ")

j += 1

print()

i += 1

# Pattern 2: Square Pattern

n = 4

i = 1

while i <= n:

j = 1

while j <= n:

print("\*", end=" ")

j += 1

print()

i += 1

# Pattern 3: Hollow Square Pattern

n = 4

i = 1

while i <= n:

j = 1

while j <= n:

if i == 1 or i == n or j == 1 or j == n:

print("\*", end=" ")

else:

print(" ", end=" ")

j += 1

print()

i += 1

Ans7)

# Reverse while loop to display numbers from 10 to 1

num = 10

while num >= 1:

print(num)

num -= 1