

ASSIGNMENT NO 9 -APPLICATION OF PYTHON IN THE FIELD OF WASTE WATER ENGINEERING

Q-1

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#To find BOD at 7th day 25C
#To find Decay Coefficient at 25C
K1=float(input("Decay Coefficient:"))
T= int(input("Temperature of 3rd day BOD:"))
T1=int(input("Temperature of 7th day BOD:"))
K2 = (K1*(1.047)**(T1-T))
print("The value ofK2 is:", K2)
#To find Ultimate BOD
e=float("2.718")
print("The value ofe is:", e)
B1=float(input("BOD at 3rd day 20c:"))
t=float(input("time in days for finding B1:"))
E=(1-e**(-0.23*t))
print("The value ofE is:", E)
l0=(B1/E)
print("The value of l0 is:", l0)
#To find BOD at 7th day 25C
#B2 = float(input("BoD at 7rd day 25c:"))
t1 =float(input("time in days for findinfB2:"))
E1 =(1-e**(-0.289*t1))
print("The value ofE1 is:", E1)
B2 = (l0*E1)
print("The value of B2 is:", B2)
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Decay Coefficient:0.23
Temperature of 3rd day BOD:20
Temperature of 7th day BOD:25
The value ofK2 is: 0.2893751572825015
The value ofe is: 2.718
BOD at 3rd day 20c:50
time in days for finding B1:3
The value ofE is: 0.49838804582143437
The value of l0 is: 100.3234335585682
time in days for findinfB2:7
The value ofE1 is: 0.8677141604830975
The value of B2 is: 87.05206392470211
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Q-2

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#Determination if density of sludge removed from aeration tank
M= float(input("Enter the value of initial mass :"))
S=float(input("Enter the value ofsolid containing sludge inpercentage:"))
Gs= float(input("Enterthe value of Specific gravity ofsludge solid:"))
Rho_W= float(input("Enter the value of density of water:"))
Ws = ((S/M)*100)
m =M- Ws
print("the value ofmass of water", m)
print("The value of Solid Content in sludge", Ws)
Vw =m/Rho_W
print("The Value of Volume", Vw)
Rho_S =Gs*Rho_W
print("The value ofDensity of solid content in sludge", Rho_S)
Vs=(Ws/(Gs*Rho_S))
print("The value of volume of solid content in sludge", Vs)
Vt=Vw+Vs
print("The value of total volume of solid content in sludge", Vt)
Rho_SL= M/Vt
print("The value of Density of sludge removed from aeration", Rho_SL)
```

```
Enter the value of initial mass :100
Enter the value ofsolid containing sludge inpercentage:2
Enterthe value of Specific gravity ofsludge solid:2.2
Enter the value of density of water:1000
the value ofmass of water 98.0
The value of Solid Content in sludge 2.0
The Value of Volume 0.098
The value ofDensity of solid content in sludge 2200.0
The value of volume of solid content in sludge 0.00041322314049586776
The value of total volume of solid content in sludge 0.09841322314049587
The value of Density of sludge removed from aeration 1016.1236143768895
```