20CV117

Q 1.
```python
# To find BOD at 7th day 25C
# To find Decay Coefficient at 25C
K= float(input("Decay Coefficient:"))
T= float(input("Temperature of 3rd day BOD:"))
T1=float(input("Temperature of 7th day BOD:"))
K2 = (K*((1.047)**(T1-T)))
print("The value of K2 is:", K2)
# To find Ultimate BOD
e= 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 of E is:", E)
lo = (B1/E)
print("The value of lo is:", lo)
# To find BOD at 7th day 25C
t1 =float(input("time in days for finding B2:"))
E1 = 1-(e**(-0.289*t1))
print("The value of E1 is:", E1)
B2 = (lo*E1)
print("The value of B2 is:", B2)
```

```
Decay Coefficient:0.23
Temperature of 3rd day BOD:20
Temperature of 7th day BOD:25
The value of K2 is: 0.2893751572825015
The value ofe is: 2.718
BOD at 3rd day 20c:50
time in days for finding B1:3
The value of E is: 0.49838804582143437
The value of lo is: 100.32343355585682
time in days for finding B2:7
The value of E1 is: 0.8677141604830975
The value of B2 is: 87.05206392470211
```

Q 2.
```python
#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 in percentage:"))
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 of mass 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 in percentage:2
Enterthe value of Specific gravity ofsludge solid:2.2
Enter the value of density of water:1000
the value of mass of water 98.0
```

20CV117

```
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
```