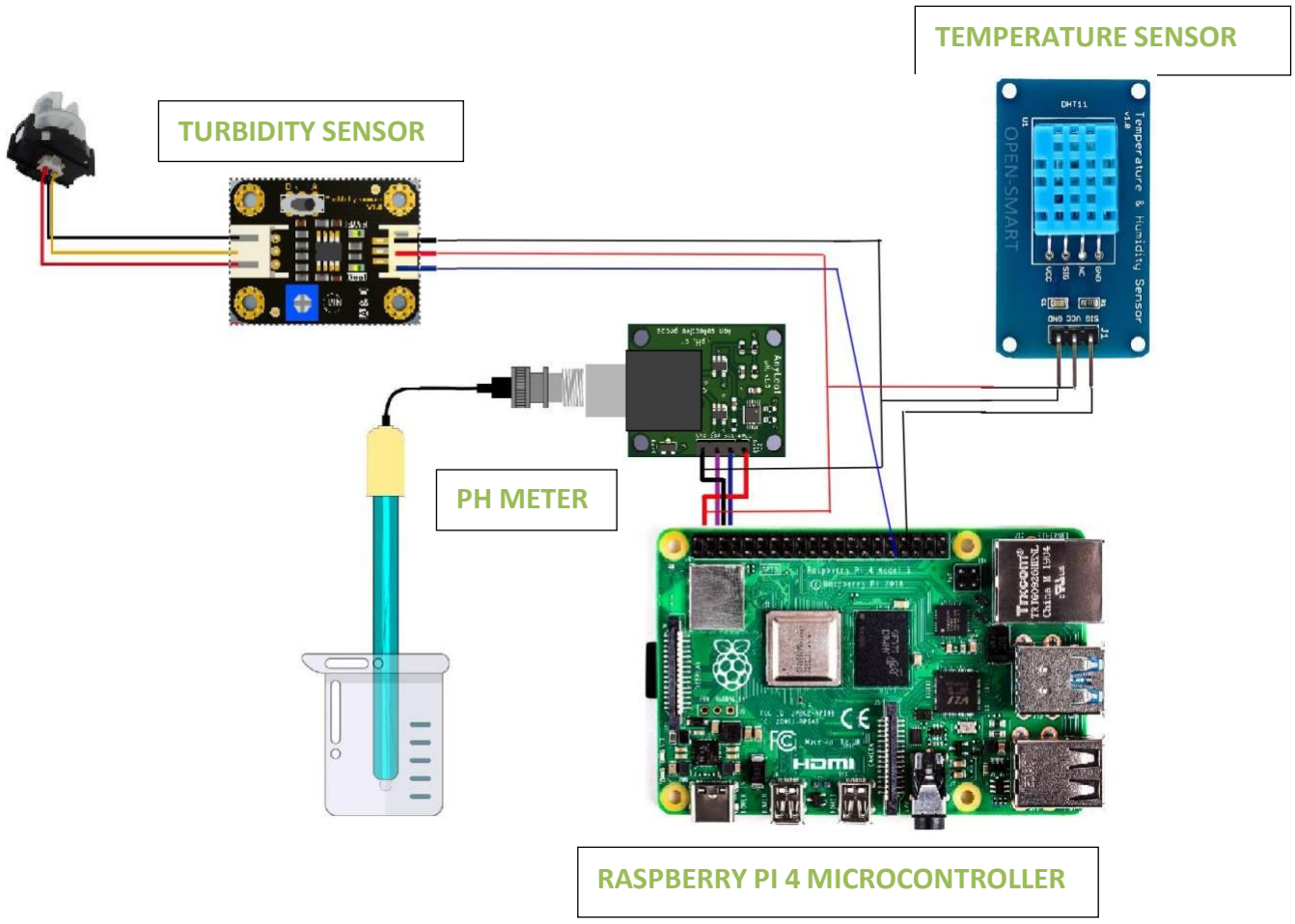
REAL-TIME RIVER WATER QUALITY MONITORING AND CONTROL SYSTEM

CIRCUIT DIAGRAM



PROGRAMMING:

```
import time

import sys

import ibmiotf.application

import ibmiotf.device
```

```
import random



#Provide your IBM Watson Device Credentials

organization = "uo60re"

deviceType = "AKASH"

deviceId = "1234"

authMethod = "token"

authToken = "12345678"


# Initialize GPIO



def myCommandCallback(cmd):

    print("Command received: %s" %

cmd.data['command'])

    status=cmd.data['command']

    if status=="lighton":

        print ("led is on")

    else:

        print ("led is off")

    #print(cmd)
```

```
    try:
        deviceOptions = {"org": organization, "type":
deviceType, "id": deviceId, "auth-method":
authMethod, "auth-token": authToken}
        deviceCli =
ibmiotf.device.Client(deviceOptions)
        #.....


    except Exception as e:
        print("Caught exception connecting device: %s"
% str(e))
        sys.exit()


    # Connect and send a datapoint "hello" with value
"world" into the cloud as an event of type "greeting"
10 times
    deviceCli.connect()


    while True:
        #Get Sensor Data from DHT11


        temp=random.randint(60,100)
        Turbidity=random.randint(0,100)
        phvalue=random.randint(2,14)
```

```
        data = { 'temp' : temp, 'Turbidity':
Turbidity,'phvalue': phvalue}
        #print data
        def myOnPublishCallback():
            print ("Published temp = %s 'C" % temp,
"Turbidity = %s %%" % Turbidity,"phvalue = %s %%" %
phvalue, "to IBM Watson")

        success = deviceCli.publishEvent("IoTSensor",
"json", data, qos=0,
on_publish=myOnPublishCallback)
        if not success:
            print("Not connected to IoTF")
        time.sleep(10)

        deviceCli.commandCallback =
myCommandCallback

    # Disconnect the device and application from the
cloud
    deviceCli.disconnect()
```